

**FACTORS INFLUENCING YOUTH PARTICIPATION IN
AGROPASTORALISM IN ARID AND SEMI-ARID LANDS: A CASE OF
MANDERA COUNTY, KENYA**

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**A Thesis Submitted to the School of Science and Technology in Partial Fulfillment
for the Requirements of the Conferment of Masters of Science Degree in
Agriculture and Rural Development of Kenya Methodist University**

AUGUST 2023

DECLARATION AND RECOMMEDATION

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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AGR-3-0256-2/2021

RECOMMENDATION

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

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DEDICATION

Dedicate to my parents Habiba and Gababa, my sons Binyamin, Hanan, Mahir, Jihan, Safwan, my sister Fatuma and My wives Khadija Yusuf and Khadija Edo.

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ABSTRACT

Whereas Mandera County government, the National Government, and other development partners have invested heavily in youth employment, food provision, and poverty reduction through, the county's youth are still hesitant to be involved in it. Even though it has been shown to be beneficial in the arid and semi-arid regions, little research has been done on the reasons why young people avoid it despite the fact that they are unable to find work in other fields. The aim of this study was to assess the factors that influence young people's involvement in Mandera County. The objectives were to find out how youth involvement in Kenya's Mandera County was influenced by insecurity in the region, technological factors, access to loans, cultural norms, and youth perceptions of the rewards they would expect from the business. The study was anchored on Push and Pull theory and the Integrative Threat Theory. The study adopted a combination of descriptive research design and explanatory research design. The target population consisted of 2900 youth from 145 registered youth organizations in Mandera County. Sloven's formula was used to sample 351 youth from the general population, and the sample proportions of young people in the sub-counties were calculated using the proportionate to size formula. The questionnaire's validity was tested during piloting in the neighboring county of Wajir, and before the real study, reliability was assessed using a Cronbach alpha coefficient. The Statistical Package for Social Sciences (SPSS Version 25) was used to analyze the data after it was gathered using the drop-and-pick questionnaire approach. The results were presented using descriptive and inferential statistics. To draw conclusions, the findings were presented in a variety of ways including frequencies, percentages, tables, pie charts, and bar graphs. Model significance was assessed using F-tests and Analysis of Variance (ANOVA) at 95% confidence interval. Multiple correlation helped to determine the nature and strength of factors that influenced youth participation in the findings indicated that the null hypothesis for insecurity was rejected because the regression coefficient was significant and negative ($\beta=-0.454$, $P=0.000$), and the null hypothesis for credit access was also rejected because the regression coefficient was significant and positive ($\beta=0.51$, $P=0.000$). The findings for technological factors revealed a positive and significant coefficient ($\beta=0.365$, $P=0.000$), youth perception on anticipated gains from the practice revealed a positive and significant coefficient ($\beta=0.551$, $P=0.000$), and cultural factors revealed a positive and significant coefficient ($\beta=0.603$, $P=0.000$) meaning all had an effect on youth participation in hence rejection of the null hypotheses. The study concluded that insecurity, access to credit, technological factors, attitude of the youth and cultural factors influenced youth participation in the study recommends that the county government and the national government dialogue on how to improve on security in Mandera County in order to encourage youth participation in. Furthermore, financial institutions would be persuaded to ease the process of credit access and allow many types of collateral when giving credit facilities geared towards. There is need for awareness on benefits of for youth through educational forums, workshops and sensitizations campaigns. Finally, both young men and women should be sensitized on technological factors to help them practice that align to the climatic conditions in Mandera like drought resistant crops and livestock.

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ABBREVIATION AND ACRONYMS

ANOVA	Analysis of Variance
ASALs	Arid and Semi-Arid Lands
CGM	County Government of Mandera
CIDP	Mandera County Integrated Development Plan
FAO	Food and Agriculture Organization
GoK	Government of Kenya
ICT	Communication Technology
ILO	International Labor Organization
KNBS	Kenya National Bureau of Statistics
MOA	Ministry of Agriculture
NACOSTI	National Commission for Science, Technology & Innovation
NSYIA	National Strategy for Youth Involvement in Agriculture
SACCOs	Savings and Credit Cooperatives
SPSS	Statistical Software for Social Sciences
TNYDP	Tanzanian National Youth Development Policy
UN	United Nations
USDA	United States Department of Agriculture
WB	World Bank
YEDF	Youth Enterprise Development Fund

CHAPTER ONE

INTRODUCTION

1.1 Background

Agropastoralism is a livelihoods system that integrates crop and livestock production, practiced among settled, nomadic, and trans-nomadic communities (FAO, 2016). The type of livestock varies based on culture, climate, environment, topography, geography, and hydrology. As such, it is the main fundamental means of solving issues of unemployment among youths in the arid and semi-arid parts of any country as well as for food security and economic growth globally (Deafalla et al., 2021). In connection to that, agricultural activities remain the most appropriate means of job creation, poverty reduction and economic growth. A study by Food and Agriculture Organization (FAO) which indicated that population in the Sub-Saharan Africa (SSA) can reduce poverty, create employment and economic growth among youths through practice of livestock rearing and crop cultivation. According to a study by International Fund for Rural Development (Gebeyehu et al., 2021) agropastoralism can contribute to food safety and nutritional quality deficiency decrease in arid areas. Livestock farming in the arid and semi-arid lands is characterized by seasonal livestock mobility, extensive grazing systems and communal management of natural resources. Due to their unequal distribution in both area and time, natural rangelands make up the majority of the dryland livestock feed resources; as a result, mobility is essential for the effective and efficient use of these resources. The ongoing issue of feed deficiencies, which are anticipated to account for 70% of the industry's annual fodder needs of over 5.5 billion bales (Sala, 2019) has a

negative impact on the sector's ability to develop sustainably. At least 70% of the country's cattle herd resides in Kenya's arid and semi-arid areas (ASALs), which make up 89 percent of the nation. Kenya's cattle industry is particularly vulnerable to climate change. Over 10 million Kenyans live in the ASALs, where it supports 50% of the country's agricultural labor force and is the primary source of income. The Gross Domestic Product of agriculture that it contributes is about 5%. Livestock raising is essential to the livelihood of pastoralists. People can build secure and fruitful lives when they have access to, control over, and ownership of productive assets like labor, land, money, and social capital (Omolo & Mafongoya, 2019).

The majority of pastoralists in the world live in the Horn of Africa. Pastoralist groups in the area are nomadic, mostly occupy arid or semi-arid terrain, and rely on livestock like cattle, sheep, goats, and camels for their subsistence. They are dependent on having access to pasture land and water, both of which are becoming increasingly scarce. They must take into account the demands of urban people, as well as those of ranchers, farmers, and wildlife (Ahmed et al., 2023). There are a number of factors that contribute to conflicts among the pastoral communities including cattle rustling, small arms proliferation, inadequate security agencies, weakening traditional governance systems, poor government development policies, inadequate land tenure systems, political and social-economic marginalization of the pastoralists (Abebe et al., 2023).

The youth population is expected to continue increasing aggravating the already existing problem of unemployment (Singleton et al., 2023). A study by Deafalla et al. (2021) underscored that unemployment was estimated to increase in the rural set up among youths in the world. The problem of lack and lack of revenue substitutes among the youth

have contributed to driving local youth to engage in cross-border smuggling and trafficking of drugs, arms and migrants.

The wider inclusion of youth, particularly in the development of income diversification activities, including agropastoralism helps in solving these problems (Eselebor, 2019). Globally, as indicated by Pervez Bharucha et al. (2021) the contribution of agropastoralism practices to rural development and food security relies on involvement of the energetic youth who are the budding labor force. According to Wang and Beltagui, (2023), youth are best classified by their inventive conduct, which is full of technological know-how, minimum risk aversion, less conservativeness, and physical strength. It is critical to encourage agropastoral techniques in areas where crop production is scarce in order to ensure food sustainability (Tian et al., 2023). Youth continue to be the primary victims of rising unemployment, which can only be averted by encouraging them to participate in agropastoralism in the arid plains, where livestock keeping is the predominant practice (Adebajo, 2022). Crumpler et al. (2022) found that agropastoralism is one of the foundation pillars of Sub-Saharan Africa (SSA) society's food security and argued that it can only function if effective programs are set for more youth inclusion and involvement. Therefore, youth population of a country should be supported and encouraged to participate in agricultural activities and mainly to help them create job opportunities and produce food for ever skyrocketing population (Stavi et al., 2022). Tatari (2023) suggests that there is low number of youth participating in agropastoralism practices although this category of persons is the most industrious of any civilization as they are in their major stage of their lives bodily and intellectually. Further, a study by Dupar et al. (2021) in South Africa indicated that there was small youth involvement into

practices and this was a result of youths perceiving agricultural activities as part-time jobs and not as a gainful occupation.

Therefore, the insufficient youth involvement in agribusiness has been attributed to many factors like misconceptions that it is supposed to be practiced by old people who are in retirement age, and that there is lack of technology and lack of credit facilities to finance themselves (Dinis & Simões, 2021).

Further, lack of information and interest contributes to low youth participation in agriculture as was reported from a study by World Bank (WB, 2017). In Nigeria, as posited by Aphunu and Atoma (2018) youth participation in farming activities is minimal regardless of them being a major constitute of labor force and resource base of the country. Further, the study found that most youth reported their willingness to work in oil companies rather than being involved in agricultural activities as agriculture was perceived as dirty and unprofitable job. In Tanzania, studies show that over one million youth were unemployed yet the National strategy for Youth Involvement in Agriculture NSYIA, 2016 report showed that youth participation in agriculture was very low. Tanzania's government proposed integrated programs to engage youth in agricultural activities as an approach for self-employment from 2016 to 202. In Kenya's dry and semi-arid regions, agribusiness is the backbone of economic growth, employment creation, and poverty reduction (Mwenzwa, 2019). Further, Orumo and Mwangi, (2023) reported that farming creates the best mechanism and stage for job creation and generation of income among the young generation. The unemployment rate may even skyrocket if the youth are not ready to get involved in agricultural activities thereby slowing down economic growth in the country (Mutuku & Mutiso, 2020). Studies by Ankrah Twumasi et al. (2020)

examined the issues that influenced youth participation in agribusiness in Ghana and found that credit accessibility, youth attitude towards low profit from agribusiness, technological constraints and fear of risks were among the factors hindering their involvement. In West Africa, another study by Richards (2023) added that youth were not willing to invest loans from the youth fund into agropastoralism activities but rather in small and medium enterprises because the businesses were clean and generated fast cash.

Failure of involvement of young people in agropastoralism in Kenya may have bigger than expected implications on youth employment, food security and poverty levels in the country (Adeyanju et al., 2023).

1.1.1 Agropastoralism

Agropastoralism, as a combination of crop farming and livestock rearing, is the primary strategy by which pastoral communities differentiate their modes of production (Little, 2019). It provides a haven and a means of survival by confirming pastoralists have sufficient food resources to see them through (Sobania, 2019). Additionally, Sala (2019) argues that agropastoralism diversifies sources of income and helps pastoral communities manage risk. However, agropastoralism is a difficult phenomenon to quantify precisely in terms of its contribution to pastoralists' livelihoods (Debela et al., 2019). Agropastoralism employs a variety of modes of association and integration of disparate behavioural patterns; these modes of association and integration vary over time and are subject to recurrent historical oscillations (Humphrey, 2018). Adoption of agropastoralism by youth in Mandera County entails not only fiscal happenings but also changes to their immaterial, social, and cultural lives. Caird and Roy (2019) assert that immaterial features of a nation are more problematic to alter than substantial facets, and thus may pose obstacles to

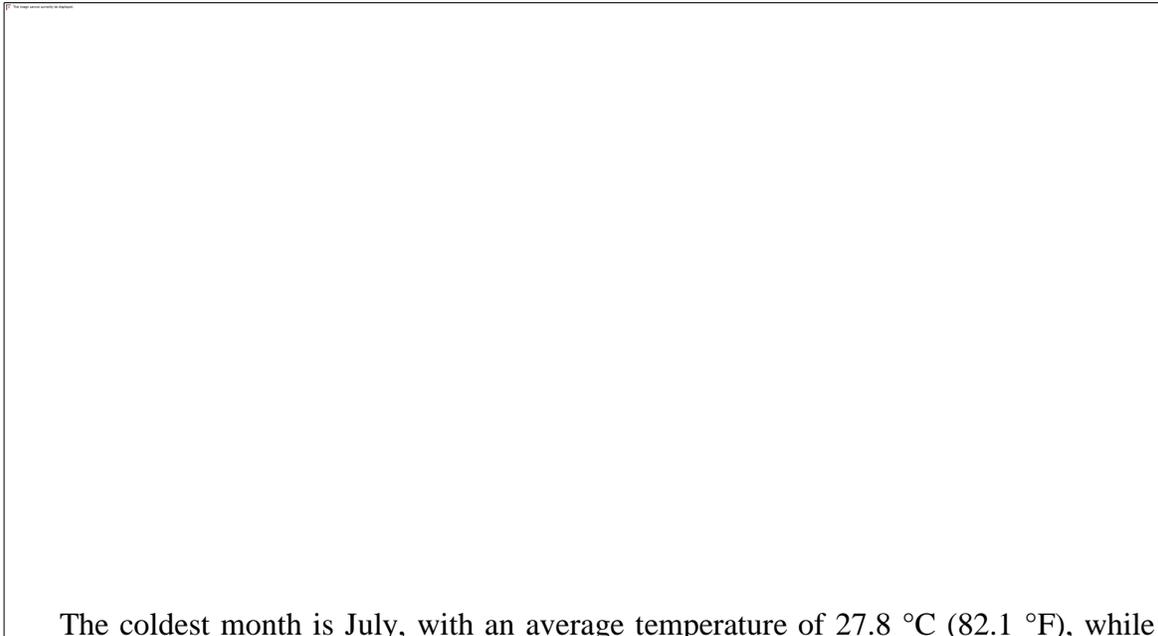
adoption of viable agricultural activities.

1.1.2 Mandera County, Kenya

Mandera County is the North-Eastern far most County in Kenya bordering Somalia to the East, Ethiopia to the North and Wajir County to the Southwest. The county is characterized by rocky hills with flat plains that extend to the Ethiopian boarder (Mandera County Integrated Development Plan [CIDP], 2018-2022). Mandera County has a population of 500,162 youths out of total population of 1,572, 435 people (KNBS, 2019). Mandera County covers an area of 25,991.8Km². The county experiences high temperatures ranging from 24°C- 42°C which support livestock farming and has River Daa that provide irrigation water for crop farming. Figure 1.1 shows the map of Mandera County.

Figure 1.1

Map of Mandera County



warmest month is March, with an average temperature of 31.8 °C (89.2 °F). Rainfall is infrequent because there is only 275 millimeters (10.8 inches) of precipitation per year. The Daua River basin, which covers an area of around 60,106 km², is the largest basin in Mandera County and borders Kenya, Ethiopia, and Somalia. Mandera County contains 9,119 km² of the basin's total area. Boreholes are the main sources of water.

The existing lakes have dried. The main lake is Lake Farwaaley. According to Kenya National Bureau of Statistics (2019), census report, Mandera County has six sub-counties which include Mandera North, Mandera South, Mandera East, Mandera West, Lafey and Banisa. Agreeing to the 2019 census, the county had a population of 1,200,890 and an area of 25,939.8 square kilometres (10,015.4 sqm).

The self-employed population in the county takes a larger percentage with the population majorly dealing in sale of livestock, livestock products, fruits and vegetables through small businesses. There are also retail and wholesale business operations in the county. The unemployment rate in the county stood at 69% in 2018 and this was attributed to limited employment opportunities and limited financial credit facilities that are Sharia-compliant. Pastoralism is the main source of income in the county. Other industries include border trade with Ethiopia, artisanal mining, beekeeping, and agriculture around the Daua River. Agropastoralism, including the rearing of camels, cows, sheep, and goats, as well as crop cultivation, including the growing of maize, sorghum, and cowpeas, are the main socioeconomic activities in Mandera County. These activities are concentrated in the agro-pastoral zones of Mandera West, Mandera East, Mandera North, Lafey, and Banisa. Beekeeping, trading both inside and outside the county, and artisanal mining are a few more significant economic activity in the county. Youth participation in

agropastoral economic activities is limited, despite the fact that these activities are available. According to Mandera Integrated Development Plan (2023), less than 20 percent of youth are engaged in agropastoral forms of economic activities like crop farming and livestock keeping.

1.2 Statement of the problem

Agropastoralism diversifies sources of income and helps pastoral communities improve their livelihood. Globally, agropastoralism has been termed as a essential deed to offset the possible high livestock losses resulting from extremely unpredictable climates. A study in Bhutan and Australia submitted that agropastoralism provides alternative sources of livelihood. However, a study in Pakistan by Franzel et al. (2022) found that the majority of the youth were not willing to get involved in agropastoralism but rather sought alternative sources of employment in towns. A study on young people and agropastoralism in Hamar, Southwest Ethiopia by Maurus (2020) found that the youth never involved themselves in Agropastoralism because it was too risky investment. Agropastoralism employs a variety of modes of association and integration of disparate behavioral patterns. Mandera County's pastoral settlements are based on agropastoralism which is the primary source of income for rural families. However, agropastoralism is a difficult phenomenon to quantify precisely in terms of its contribution to pastoralists' livelihoods; these methods of production are typically affected by low resource input, bad weather, and pre-existing culture. Non-traditional income streams for pastoralists are becoming more and more difficult to come by as communal grazing areas are shrinking, leaving only crop farming as a viable choice for young people.

It has been the responsibility of the Mandera County administration to help the youth with livestock and crop production. Towards this end, rural development funders and partners in the County have initiated new projects. As an added bonus, the county is home to the river Daua, which is tapped by the government for irrigation by young people, most of whom are unemployed and energetic. However, youth participation in agropastoralism remain low. According to Mandera Integrated Development Plan (2023), less than 20 percent of youth are engaged in agropastoral forms of economic activities like crop farming and livestock keeping.

While Mandera County's government, the National Government, and other development partners have invested heavily in youth employment, food provision, and poverty reduction through agropastoralism, the county's youth are still hesitant to be involved in the practice. Even though agropastoralism has been shown to be beneficial in the arid regions, little research has been done into the reasons why young people avoid it despite the fact that they are unable to find work in other fields. Young people in Northern Kenya, despite a high prevalence of youth unemployment and poverty, have little interest in farming because they believe that farming should be done by older people (Lewa et al., 2020) and it is not a lucrative venture. They prefer to move to urban areas in search of better-paying white-collar employment, despite the fact that towns are struggling to keep up with the rapid increase in their population. Mandera County has limited research on young adult's participation in agricultural activities, but there is a lack of information and evidence about the factors that influence youth involvement in agropastoralism. As a result, by examining the factors that influence young people's involvement in agropastoralism in Mandera County, this research was to contribute to the body of

existing knowledge and fill in important knowledge gaps. The findings on level of youth involvement in agropastoral activities may aid in developing agropastoralism practices and policies to encourage their involvement and improve in socio-economic wellbeing in the county, especially food production, which stands to suffer when older people are no longer able to engage in.

1.3 Purpose of the Study

Agropastoralism is feasible in arid and semi-arid lands since the harsh climatic conditions are not favorable to exclusive crop farming or high-level animal husbandry. Additionally, as away of job creation to youth, government of Kenya encourages them to be involved in agropastoralism. Nevertheless, the youth in Mandera County are reluctant to be involved in agropastoralism in argument that agricultural practices are dirty and risky, rather many youths prefer white collar jobs. It is therefore critical that factors that hinder their participation are identified and isolated for special redress.

1.4 Main and Specific Objectives of the study

The main objective of the research was to establish the factors that influence youth participation in agropastoralism in Mandera County.

1.4.1 General Objective

The general objective of the study was to determine the influence of youth participation in agropastoralism in arid and semi-arid lands.

1.4.2 Specific Objectives

The specific objectives were;

- i. To determine the influence of insecurity on youth participation in agropastoralism in Mandera County, Kenya.
- ii. To examine the influence of access to credit on youth involvement in agropastoralism in Mandera County, Kenya.
- iii. To examine the influence of technological factors on youth participation in agropastoralism in Mandera County, Kenya.
- iv. To find establish the influence of youth attitude on perceived benefits on their participation in agropastoralism in Mandera County, Kenya.
- v. To establish the effects of socio-cultural practices on youth participation in agro pastoralism in Mandera County, Kenya.

1.5 Research Hypotheses

The following hypotheses guided the study.

- H₀₁: There is no statistically significant influence of insecurity on youth participation in agropastoralism in Mandera County, Kenya.
- H₀₂: There is no statistically significant effect of technological factors on youth participation in agropastoralism in Mandera County, Kenya.
- H₀₃: Access to credit has no statistically significant effect on youth participation in agropastoralism in Mandera County, Kenya
- H₀₄: Youth attitudes towards perceived benefits of agropastoralism has no statistically significant effect on their participation in agropastoralism in

Mandera County, Kenya

H₀₅: Socio-cultural practices have no statistically significant effect on youth participation in agropastoralism in Mandera County, Kenya.

1.6 Justification of the Study

The youth are the future of any country and are critical in perpetuation of ideals, practices and livelihoods. The Youth in Kenya constitute almost 70 percent of the population hence the future of the country is highly dependent on them. The youth in rural Kenya have not been attracted to agropastoralism or related enterprise mostly due to perceived low and slow returns in the industry. They are mostly interested in quick and high return jobs and enterprises. Many youths also prefer white collar jobs to the perceived ‘dirty’ agricultural practices. This poses danger of the youth abandoning agropastoralism and congregating in towns and cities where there are no jobs hence causing overpopulation and environmental pollution besides increasing crime rates due to non-employment. To avoid continuous rural-urban migration and improve on food security and livelihoods, the youth need to be encouraged to engage in agropastoralism. agropastoralism is feasible in arid and semi-arid lands since the harsh climatic conditions are not favorable to exclusive crop farming or high-level animal husbandry. That is why it is critical for government to encourage youth involvement in agropastoralism where it makes sense to do it in the ASALS by giving requisite incentives. It is therefore critical that factors that hinder their participation are identified and isolated for special redress.

This study wanted to create the extent to which some of the factors singled out herein were the cause of youth shirking agropastoralism and recommend ways of improving their participation.

The study findings would, to a large extent, benefit the youths and policy makers as it would provide information on how insecurity, access to credit facilities, technological factors and their attitude on perceived benefits, affected their participation in agropastoralism for job creation, income generation, poverty reduction and food provision. The results of the study would help to make decisions, policies and programs that facilitate involvement of youth in agropastoralism. Financiers may understand how youth funds would be used to promote agropastoralism in Mandera county and Kenya as whole.

The governments of Mandera County and the national one, through the ministry of Agriculture, stand to benefit from the findings of this study, as they would be able to formulate programmes and implement projects geared at promoting youth enterprise in existing financing models of Uwezo fund, Youth Enterprise Development Fund (YEDF) and Ministry of Agriculture's Youth in Agriculture programmes for employment and food security. The research findings add to the existing body of knowledge on the factors that influence youth participation in agropastoralism. The factors may differ from region to region depending on cultural and demographic characteristics of the residents. Also, the topographic and climatic conditions may differ from regions to regions hence the study brought new knowledge pertaining factors that affect youth participation in agropastoralism in arid and semi-arid regions of norther Kenya and whether the factors compare with other paces in Kenya.

1.7 Scope

This study was confined to the valuation of factors affecting youth contribution in agropastoralism in Mandera County.

The study geographical scope was Mandera County covering all the six sub-counties and concentrated on youth who were out of school. It also targeted organized youth businesses and local leaders from both government and non-governmental organizations including agricultural county officers, Kenya Climate Smart Agriculture Project officers and local chiefs. The inclusion of different youth from different sub counties was to achieve variability in responses and perceptions regarding their level of participation in agropastoralism. Although it was confined to one county, the findings were expected to be applicable and replicated to other counties with similar agro-ecological conditions like the neighboring Wajir, Marsabit and Turkana.

1.8 Limitations

The study was limited to Mandera County. This could limit generalization of findings to counties in Kenya that do not share similar topographic, climatic conditions and socio-demographic factors. However, most counties in the arid North are expected to have similar agro-ecological and climatic conditions to Mandera and therefore, it expected that the findings will be applicable to most of the arid Northern Kenya.

1.9 Assumptions of the study

The study assumed that sampled participants gave accurate indications of the factors affecting youth participation in in Mandera County. Further, it assumed that the respondents were objective and provided correct and genuine responses to the questions and that the findings were representative of other areas with similar agro ecological and climatic conditions hence applicable on a wide scale.

1.10 Operational Definition of Terms

Agropastoralism

The practice of growing some crops and engaging in livestock production under rangeland grazing (FAO, 2016). The grazing may involve animals being driven some distances to get pasture and water and returning in the evening while the farmer has some crops on the sidelines. In this study, it meant the engagement of youth in crop and livestock farming as source of livelihood.

Factor

A factor is an integral component or element that influences a certain decision or results (Dinis & Simões, 2021). In this study, it comprises the factors that affect youth participation in agropastoralism in Mandera County with focus on insecurity, access to credit facilities, technological factors, youth attitude and socio-cultural related factors.

Youth Participation

This is the active involvement of young persons of 18-35 years in the practice of livestock keeping and crop farming (Aphunu & Atoma, 2018). In this study, it includes youth aged 18-35 years who are engaged in one or more forms of crop farming and livestock rearing as source of livelihood.

Credit Facility

Credit facility refers to finances in form of loans and grants that assist investments in agropastoralism practices (World Bank, 2018). In this study, it was operationalized to mean access to credit finances channeled toward agropastoralism in Mandera County.

Insecurity

Insecurity as used in this study is the risk of inter-clan conflicts and banditry that are attached to limited resources of grazing land and sources of water for livestock and crop farming (Wordofa et al., 2023). In this study, it denotes presence of conflicts, wars, disagreement among the community within Mandera and neighbouring counties and how these conflicts impact youth participation in agropastoralism.

Youth

Youth is referred to young people in the age set of 18-35 years (Deafalla et al., 2021). In this study, youth was operationalized as someone aged 18-35 years and is engaged in a source of livelihood.

Perceived benefits

This is perception of tangible financial gains that youth tend to rely on when deciding whether to participate in agropastoralism or not (Bariu, 2020). The benefits can be positive or negative depending on the event of decision. In this study, it refers to benefits associated with agropastoralism like generation of income and provision of food for families, households and community.

Technological factors

Refer to new ideas, knowledge and innovations of agropastoralism that lead to more understanding of agro-pastoralism and use of ICT tools to increase production of livestock and crops for better livelihood (Vema, 2018). In this study it refers to technological application and processes like use of mobile devices in the record keeping of crop farming and cattle rearing activities.

Mobile phone use offers a significant opportunity to increase information access for agropastoral communities, thereby helping their programs for reducing poverty. In some instances, radio frequency identification and mobile phones are used in conjunction to track, locate, and manage animals in grazing fields.

Cultural factors

A nation, a community, or other specific group of people's shared beliefs, moral principles, linguistic customs, and laws (or codes of conduct) are all included in culture (Akdoan et al., 2021). Language used at home, religious observances, customs (such as marriage customs that frequently go hand in hand with religious and other beliefs), acceptable gender roles and occupations, dietary customs, intellectual, artistic, and leisure activities, and other aspects of behavior are examples of characteristics that are influenced by culture. This study includes cultural perspectives of youth's beliefs, practices, and vocations related to agropastoralism in Mandera County.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews prior research on the factors that influenced youth participation in agro- pastoralism. Additionally, the chapter reviewed pertinent theoretical frameworks and empirical studies on the factors that influence youth participation in agropastoralism. Likewise, the chapter discussed the conceptual framework as well as operational framework.

2.2 Theoretical Framework

According to Kivunja (2018), in instruction to give a methodical picture of phenomena by defining relationships among variables, a theory is a collection of interconnected concepts, definitions, and propositions. According to Baird and Maruping (2021), the generalized notions or abstractions that are used to explain a relationship should fall within the parameters of the stated critical boundary of the assumptions made by the theory. This will help better comprehend the phenomenon and take appropriate action. This study relied on a number of socio-economic theories.

2.2.1 The Push and Pull Theory-Access to credit facility

In the context of today's youth, the importance of a source of financing for agropastoralism cannot be overstated. Push and Pull theory argues that there are some push and pull factors that influence the decision to participate or not to participate in any economic activity. Goba (2021) strongly asserted that, access to credit facility push or pull youth from participating in agricultural activities under pastoral management areas. This is because push factors relate to expulsive forces like high rate of poverty, unemployment, lack of income to support

livelihood and rapid population growth rate that creates basis and justification for individuals to engage in economic activity while pull factors correspond to attractions to engage in a socioeconomic activity. Examples of pull factors include access to finances, supportive climate-smart technological capacity factors, and good income prospects and secure environment (Rice & Khanin, 2019). By examining the helpful and impedimental variables, the push and pull theory is helpful in determining why people migrate and immigrate in order to improve their living situations. It also helps to comprehend the role of youth in agro-pastoral activities (Chepkemoi, 2020; Ndeke, 2021). According to Dolma (2020), when youth are able to access credit facilities like loans to finance the cost of production and investment in more improved production capacities, they would participate in agropastoralism to provide food to their families and create an investment for themselves. A study by Maritim (2020) on youth participation in agriculture, underscored that availability of credit was a major factor that influenced youth participation in agricultural activities. On the contrary, a study by Dolma (2020) found that credit facility was not the only primary driver of youth participation in agropastoralism in Arid and Semi-Arid areas but there were others like insecurity and use of technological capacity in agropastoralism. Therefore, there is a strong relevance of Push and Pull Theory with access to credit facility in this framework.

2.2.2 The Integrated Threat Theory-Security issues

The Integrated Threat Theory of Stephan and Stephan (2000) theorizes on how the social - economic relationship among groups get impacted by perceived or physical threats. Physical threats create fear, alienation and worries to individual and community at large while perceived threats can cause prejudice among groups that would influence peaceful

coexistence. Further, a study by Senda et al. (2022) indicated that security can push or pull individuals from participating in a social or economic activity.

Agro- pastoralism is an economic activity that provides livelihood of households of pastoral communities. A study by Ibrahim (2019) observed that inter-clan conflicts and cattle rustling leads to series of threats that sometimes are physical. He further found that insecurity caused youth to migrate from the rural communities to urban areas where they would be secure (Ibrahim, 2019). For instance, conflicts and threats that are organized by armed bandits are very frequent in dry arid lands of Northern Kenya and are feared to have fueled movement of over one million youth among pastoralist communities to urban centers (Senda et al., 2022). From these studies, it is clear that security issues may discourage the youths from participating in agropastoralism. Therefore, this theory was to underpin the study in terms of how social economic factors like culture, community ways of living, income generating activities influenced youth participation in agropastoralism.

2.2.3 The Entrepreneurial Cognition Approach Theory

The theory is based on the structures of knowledge used by individuals to make assessments, decisions or judgments that involve the evaluation of an opportunity, as well as creation and growth of the opportunity. Anderson first proposed the idea in 1996. The theory emphasizes the importance of an entrepreneur's personality as the primary factor in the creation of new businesses, paying necessary attention to the contributions that individuals make to the entrepreneurial process. However, attempts to identify psychological or demographic traits shared by all entrepreneurs or specific to them have mostly failed due to weak, contradictory, or no meaningful results. The thesis stated that the adoption of a specific entrepreneurial activity is driven by the technological domain,

experience, and time. Age, formal education, the number of patents held, and significant cognitive differences are some other variables thought to influence the adoption of the activity (Karimi et al., 2017). There are two major groups of variables that affect the likelihood that specific individuals will find specific opportunities. These include having the knowledge required to spot an opportunity and the mental skills required to take advantage of it (Dencker et al., 2021).

2.2.4 General Systems Theory

General systems theory (GST) was created by Bertalanffy in 1969 and serves as a multidisciplinary model for all system types, society, and other scientific fields (Fröhlich, 2019). The theory explains the relationship between the environment and the community as well as the dynamic interdependencies and relationships between system components. The theory holds that a system is built around patterns and the structure of relationships that come up as a result of interactions between its constituent parts.

The GST indicates that a community as a whole can be seen as a holistic system consisting of interconnected core livelihood processes (subsystems) that are hierarchically within an overall process architecture (Ponsignon et al., 2007). Thus, community activities must be consistent, cross-functional boundaries and focus on added value for residents (Mele et al., 2010). According to the notion, a successful system must specify how its constituent parts interact. Therefore, processes that are appropriately planned with a focus on the desired outcomes and objectives result in a system that is efficient, adaptable, and unified (Barile & Polese, 2010).

The theory states that systems comprise many internal subsystems, such as those involved in agriculture activities and animal husbandry that must constantly be coordinated. Youth typically fit into increasingly complex subsystems that require communication with one another in order to transform inputs into outputs. According to the theory behind this study, it is critical to use systems theory to explain the connections between cultural beliefs, technology, and youth participation in Mandera County because community processes like diverse cultures are a key component of agropastoralism, which serves as the foundation for youth employment and livelihood.

2.3 Empirical Review

2.3.1 Insecurity issues and youth participation in

Insecurity was particularly identified by Wordofa et al. (2023) as a major contributor to lack of youth participation in agropastoralism and was grounded on negative implications to the economic activities in a community by causing fear, worries and alienation. pastoralists are affected by inter-communities' violence and conflicts that have big impacts to their livelihood. Pastoralism, being the practice of keeping livestock like cattle, sheep, goats, camels and donkeys in Arid and Semi-Arid Lands (ASELs), is the main source of economic gains like income, employment and investments (Ahmed et al., 2023). Most of pastoralists are nomadic and therefore keep migrating from place to place in search of water and pastures for their livestock (Tugjamba et al., 2023). Pastoralists organize themselves in such a way that no specific territory belongs to anyone and no restrictions on territory. The study further established that these movements are a major source of conflicts among the pastoralists (Tugjamba et al., 2023). The study was in support to another study by Kimokoti (2022), which posited that conflicts and banditry were most common insecurity matters in ASALs. In

Kenya, pastoral communities have experienced numerous inter-clan conflicts. These combats focus on theft of livestock, fight for grazing land and nowadays, water streams for crop farming. This is consistent with finding from a study by Abebe et al. (2023) who argued that, livestock raiding causes distrust among pastoral communities, which is a major cause of conflicts. Due to high population in the areas and few grazing pastures, many pastoralists have shifted to crop farming for food security (Eaton, 2019). The study further found that there was competition on few rivers passing across the counties in Northern-Kenya. In reference to Mandera County, communities practice livestock keeping and crop farming where they utilize River Daua for irrigation water (Abdi, 2019). From the study, Eferbo (2022) found that there was a small proportion of youth participation in agropastoralism but the study did not document what influenced the low youth participation. Therefore, this study examined the influence of insecurity on young adult's participation in agropastoralism in Mandera County.

2.3.2 Access to Credit Facility and youth participation in

Credit facilities promote success of any economic activity in any community. Government, financial institutions and development partners have put in place several strategies to ensure easy and quick access to loans but regardless of all strategies, credit facilities are not easy to get (Gatti, 2023). A study by Khadse et al. (2018) indicates that, youth are encountering difficulties in operating agricultural activities due to limited resources like finances. The research is in line with the findings from inquiry by World Bank (2018), that underscored that financial institutions are unlikely to offer loans and collaterals to young people because youth are seen as of high risk since they have limited sources of income hence limited financial capabilities (Atkinson & Messy, 2012). A study by Wongnaa and Babu (2020)

posits that, credit access is major deterrents that may prevent many youths from participating in agricultural activities. In Nigeria, a study on agricultural production by Khadse et al. (2018) also revealed that, youth shy away from agriculture as it is perceived to be a tedious process of acquiring credit facilities, which may not be available. On the contrary, a report by World Bank (2018) supposes that many institutions are interested in giving loans to youths for agricultural projects. Another contribution by Cull & Hartarska (2023) argues that financial institutions should solve young people's problems on financial constraints by easing process and allowing many types of collateral when giving credit facilities geared towards agriculture.

Youth with family responsibilities and limited avenues for getting money to save affect their credit worthiness, which in return affects their access to loans, which eventually may halt their engagement in agropastoralism practices (Gatti, 2023). Lack of access to credit facility is not exceptional to Kenyan youths. This is in regard to many studies that indicate that access to financial assistance in form of loans has remained a nightmare to youth who want to engage in agriculture (Maritim, 2020). According to Muthomi (2017), youth are willing to engage in agropastoralism activities in rural areas but access to credit from banks and SACCOs hinder them.

2.3.3 Technological Factors and youth participation in

Globally, technology is bringing people together in sharing opinions and information (Nyarko & Kozari, 2021). Agriculture has not been left behind in the technological advancements as indicated by Vema (2018) who asserted that technology is gaining fame in agricultural practices worldwide. The willingness to apply technology in Agriculture has

greatly revolutionized modern agricultural activities that has increased production (Tang, 2020). Tang (2020) also stated that, technology is the solution of curbing losses, low production, high labor cost and improving quantity of agricultural products. A study in European Union (2018) found that, government should bring and support new innovations in agriculture to promote the sector. A study by Benito (2018) adds that, the government should train farmers on how to use modern farming machines and equipment that require technological knowhow.

In Ghana, farmers use modern technology to transmit agricultural information that has significantly influenced the growing of foodstuff in Northern region of Ghana (Damba et al., 2019). Use of technology has diversified agriculture and provides platforms for massive production in developing countries.

In the recent past, technology has expanded and changed the crop cultivation and domestic animals breeding in East Africa. On the contrary, technology is of no use in agriculture if farmers are unable to understand it appropriately because knowledge must be circulated well to influence the farmer to operate optimally (Awuni, 2018). A technological device that the farmer should use in the art of practicing agropastoralism is not well understood by youths especially in rural areas. This means the youths must prepare to get training to acquire this information (Awuni, 2018). According to Tofu and Wolka (2023), report youths have the ability to reshape agriculture by use of modern technologies. The study also states that use of Information and Communication Technology (ICT) gadgets like cell phones and internet has enabled youth to acquire relevant science and knowhow that aid in agropastoralism productivity in ASALs.

In Kenya, youth access information on new agricultural innovations, new markets and how to access credit facilities (online loan Apps) by use of internet through their mobile phones (Irungu et al., 2015). The information obtained from the internet not only increases agricultural productivity but also raises the livelihoods of youth as espoused by Kobe (2014) in her study on the influence of ICT on youth participation in the production of pigeon pea. This study is supported by another study by Lachaud (2015) that established that information access through modern technology improved food security and general livelihood of youths.

In Mandera context, a study by World Bank (2017) found that ICT had increased the willingness of youth to engage in livestock keeping as they got data on how to achieve bugs and breeding. Additionally, the study revealed that technological tools aided youth and women to manage small and large -scale farming of food crops through selection and monitoring of production. Youth gain desirable information on weather forecasts that guide them on planting seasons and harvesting (World Bank report, 2017).

2.3.4 Youth's attitude towards perceived benefits of agropastoralism and their participation

The decision and behavioral intention to get engaged into any economic activity is influenced by perceived benefits (Tenel, 2016). The revenue generated from agropastoralism for employment has been seen to influence the attitude of engaging in business (Soane, 2015). Another study by Carolan et al. (2016) revealed that the majority of youth perceive agricultural activities to generate small income due to the high cost of production that makes it very difficult and an expensive venture.

In South Africa, teenagers perceive agriculture as of low status and by illiterate people who cannot acquire office jobs (Holz & Jost 2015). This is not far from the findings of Bariu (2020) which found that youth had poor perception of agriculture due to low status attached to low income with longer time of investment (Nyoni, 2012). When youth observe the profits in agricultural activities are higher, they may be interested to get involved since they have the hope and expectations of making profit (Maritim, 2020). Maritim (2020) also adds that this would happen if there are no other influencing factors like insecurity, lack of access to credit and use of technological application in agropastoralism.

2.3.5 Socio-Cultural Practices and Youth

The socio-cultural practices of a society shape the economic activities that take place on a daily basis. Cultural values and beliefs have been shown in numerous studies to have a significant impact on people's lives. Pastoral communities, where pastoralism is a major part of life, have more cultural values rooted in them (Naghizadeh, 2022). In Turkey, for example, youth are not permitted to own any income-giving activities without the permission of community elders (Wallace, 2018). In South Asian studies conducted by the Kadambi (2021), there is a strong link between agropastoralism and gender differences. Around the world, the number of young people who own livestock businesses has increased in recent years, but the situation in Africa is very different.

According to statistics from South Africa, male youths still outnumber female youths in agropastoralism (Smith, 2021). Little progress has been made by academics in their attempts to better understand what motivates men and women in pastoral communities to pursue (or not pursue) agropastoralism. According to literature, young men and women's activities appear to be significantly different as a result of their gender classification (Watete et al., 2016).

Scholars in Nigeria argue that because of culturally created and taught beliefs about gender and agropastoralism, youth are hampered in their ability to amass social and cultural capital, as well as save money and develop credit histories that are appealing to resource providers and investors like bankers (Counihan, 2009). These factors are thought to influence the types of businesses that young entrepreneurs start as well as their growth. Men and women have different preferences, according to research into the relationship between gender and career choices, because they are more or less familiar with gender stereotypes and identify more or less with traits associated with either men or women (gender identification).

In Kenya, according to Ombere et al. (2021), it is widely assumed that young woman's key function in society is to be a good housewife and mother. As a result, women face cultural barriers. Women are also frequently stereotyped as helpless, passive, and irrational and therefore not allowed to involve into agropastoralism (Oommen & Shanker, 2021). Religious views are another issue that impacts female farmers. Both men and women can labor within or outside the home, in any sector, for the purpose of their own survival. Because women cannot serve as leaders, Nisa's 34 is commonly used by Islamic scholars as a rationale to promote male dominance over women and to explain the prohibition of women from agricultural activities (Musa, 2019). "Men are the guards and maintainers of women since God has given one of them greater (power) than the other, and they support them with their resources." (Islahi, 2020).

Women should stay at home and not engage in pastoral or agricultural farming occupations, according to the Muslim religious text "Surat al-Ahzab"(Akoleowo, 2021). Women and men have equal privileges and chances in the community scope, according to the Koran and "hadiths" (At-Taubah 71). Also, women have equal rights to participate in public and political

matters under "Syari'at" legislation and not into pastoralism, according to (Sobri, 2019). Men assume that women are more secure when they can stay at home and avoid partaking in agropastoralism activities because of their commitments to their children and families. The same as Abalkhail (2017) when he argues that, Islam, in his understanding, does not give equal possibilities for men and women in the matters of pastoralism. Traditional beliefs are one of the cultural elements that may deter young people from becoming interested in pastoral agriculture.

Pastoral cultures forbid young people from owning agricultural land without their father's permission (Abebe & Flintan, 2021). It has been suggested that they may sell their land to raise funds for a vacation or leisure. As a result, they don't have title deeds which are the most prevalent form of loan collateral. According to study by Gathogo (2018), young people in Kenya's pastoral areas are reluctant to take out bank loans because they are terrified of failing. This is owing to a common cultural and economic notion that young people lack a steady source of income with which to repay loans. Young entrepreneurs are regularly confronted with animosity and hostility to their ideas when approaching banks for support through credit facility. Because of the shortage of bank financing, a few young people have turned to informal savings groups (Flynn & Sumberg, 2018). One of the major obstacles facing Kenya's youth in beginning agropastoralism businesses is getting loans from local banks (Mutinda, 2018). This type of culture has an impact on young people's interest in engaging into farming and ranching and as a result limits many youths in agropastoralism (Massawe, 2021).

This research was timely since it was still necessary in Mandera County to determine the impact of socio-cultural practices on youth involvement in agropastoralism.

2.4 Youth participation in Agropastoralism

The youth are the main source of labor force in any pastoral community. Therefore, they are expected to be involved in agropastoralism to provide income and food for livelihood under pastoral communities set up. In America, the United States Department of Agriculture(USDA) encourages youth to engage in livestock rearing and crop farming as well as natural resources by promoting rural and community development programs (Cull & Hartarska, 2023). The report further indicates the approach used in enhancing programs that encourage youth to participate in these activities include; development of infrastructures and provision of loans with no interest rates (Yami et al., 2019). This is supported by another study by Wang and Beltagui, (2023) in Europe that established that access to fund availability promotes youth participation in agropastoralism. According to a similar study on youth participation in agropastoralism in Bhutan, there are six principal influences that effect youth contribution in dry land farming: admission to financial services like bank loans, access to technology, conflicts over limited resources, attitude towards perceived benefits, lack of farming knowledge and dialogue policy (Tugjamba et al., 2023).

In Nigeria, unemployment rate increased from 31.5% in 2016 to 34.7 in 2017 as many of youth were not ready to engage in agropastoralism according to (World Bank, 2018) report on unemployment rate in ASAEs in Africa. Also, the report claims that the rate of unemployment inAfrica sub-Saharan countries is worsening due to high dependency on office jobs and rural-urban movement. This situation is attributed to low participation of youth in agropastoralism as source of their livelihood and food security (World Bank, 2018).

However, another study found that, even though youth participate in agropastoralism without necessary information and security, they end up unable to employ themselves as no or low

income is generated (FAO, 2016). Tatari (2023) did a study that established that youth participation in agropastoralism was directly correlated to access to finances and peaceful environment. These findings were seen in another study carried out by Nigerian youths. The study found that, many youths (7 out of every 10) were perceived to engage in crop farming and livestock keeping in pastoral communities but felt unhappy since they lacked access to loans, technology and innovations training and due to low perceived profitability and unsecure environment (Campbell, 2021).

In the background of East Africa, the Tanzanian National Youth Development Policy (TNYDP) was initiated in 1996 to offer training on new ideas and innovations in agriculture (Osumba et al., 2021). A study by Anyidoho et al. (2018) on agriculture in Uganda found that the Ugandan government had developed new programs to catalyzed youth to participate in agropastoralism. The study also found that regardless of the initiatives by the Ugandan government, still youth did not get involved in agropastoralism but instead moved to towns to seek jobs. This is similar to youths in Kenya where the majority move to nearby towns leaving agropastoralism practices for older people (Tofu & Wolka 2023). The current Literature indicate that agropastoralism is the remedy to unemployment, food insecurity and increased poverty among pastoral communities in Kenya (Ibhahim, 2020; KNBS,2020). Kenyan economy mainly depends on agriculture for employment, poverty reduction and food security (Dolma, 2020). In support to this, a study by Tofu and Wolka (2023) revealed that, Government of Kenya [GoK] had initiated programs to lured many youths to participate in agriculture by 2030. The main initiative to encourage youth to participate in agriculture was Youth Funds which were allocated ten billion Kenya shillings to provide youthwith loans and grants for agricultural and other projects, (Maritim, 2020).

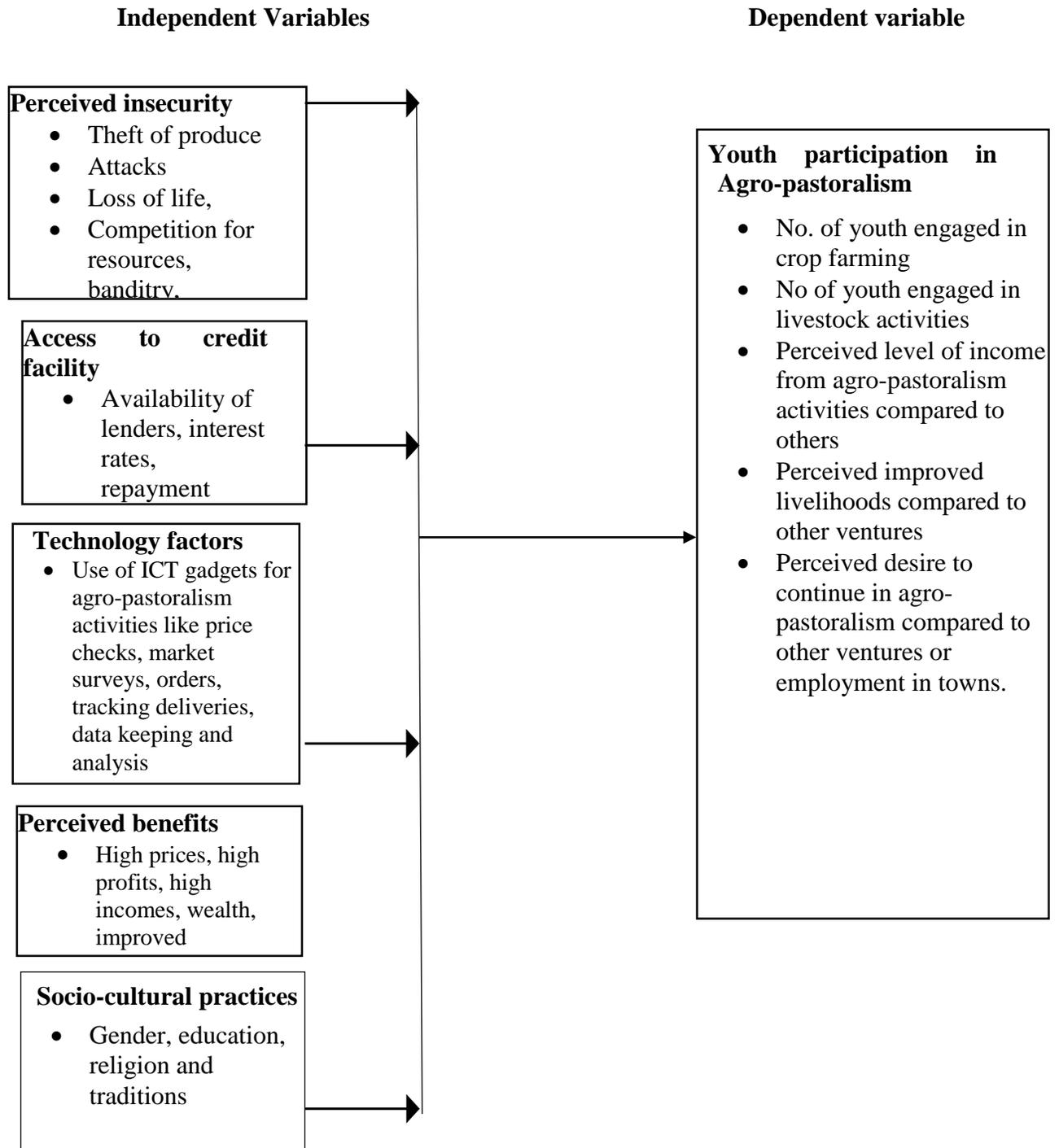
A report finding also confirms that, with regards to many government initiatives, The YEDF has been giving ‘Agri-Vijana Loan’, that normally consider youths who want to start profitable agriculture activities across the country (GoK, 2019). The report adds that, the scheme offers appropriate training on modern farming and breeding of animals. In the context of youth participation in agropastoralism in Mandera, agro- pastoralism is the key basis of income, food and employment among the youths though their involvement in agropastoralism is low (Ibrahim, 2019). There is little literature and empirical studies on what factors influence youth participation in agropastoralism. Therefore, this study aims at assessing the factors that influence youth participation in agropastoralism in Mandera County.

2.5 Conceptual Framework

A conceptual framework, as defined by Lyle (2018) is a graphic illustration that shows the link among the independent and dependent variables. The dependent variable in the present investigation was youth engagement in agropastoralism in Mandera County as specified by the characteristics shown in figure 2.1 below. The independent variables in this study were insecurity, availability of credit, technology, and perceived benefits and social cultural factors.

Figure 2.1

Conceptual framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the study approach with an emphasis on the procedures, tools, and methods used. In-depth coverage is given to the research design, target population, sampling frame, sample size calculation, sampling, data collection techniques, and pre-testing procedures. It also discusses the statistical techniques that were used, how the results were presented, and how the raw data were processed and evaluated.

3.2 Research Design

Research design, according to Salter et al. (2023), is a comprehensive method for integrating the many study components in a logical and coherent way. It offers a general framework for how to approach answering research questions and resolving the research problem for the researcher. The term "research design" is used to refer to both the overarching process that incorporates research technique and, specifically, the research design framework (Henriques & O'Neill, 2023). A research design aids the researcher in allocating limited resources by giving methodological causal choices (Hill et al., 2021). Descriptive and explanatory research designs were combined to create the mixed research design that was employed in this study. Descriptive research is used to obtain information on the existing state of the phenomena in order to characterize "what exists" in terms of factors or conditions in a scenario. The fact that the research problem was well-designed and the objective was to conduct a field survey by visiting the population in question of interest in order for participants to explain specific features based on their own understanding of the issue under

study influenced the researcher's choice to use a descriptive research design (Agrawal et al., 2022). Explanatory research design was used to discover details about why something occurs. Explanatory research design served as a starting point for more in-depth studies and was helpful in explaining why youth are not actively participating in agropastoralism and what factors influence failure to participate.

3.3 Population

A population can be defined as a collection of persons, objects, or substances from which measurements are taken, including the whole group of individuals that share at least one characteristic (Gupta & Gupta, 2022). This implies that a population can also be defined as the collection of sampling units or cases of interest to the researcher (Henriques & O'Neill, 2023). According to these definitions, a population can be summarized as a homogeneous universe of defined units of curiosity to the investigator. The population of this study was the youth who were out of school in Mandera County as well as the organized youth businesses and opinion leaders from both government and non-governmental organizations. The unit of observation was youth aged 18-35 years in Mandera County.

3.3.1 Target Population of the Study

Target populace definition has been varied and has been defined as “the populace about which information is gotten from or the features which are under dialogue and about which evidence is looked-for (Dückers et al., 2022). The County Government of Mandera (CGM) youth affairs office as at 31st December 2020 had 145 registered youth groups. These groups comprised a total of 2900 youth. This was used as a target population in the study. However, sampling was done to obtain a sizeable and manageable number who were targeted to obtain

data for the study. The target population was distributed in six sub-counties of Mandera County: Mandera North, Mandera South, Mandera East, Mandera West, Lafey and Banissa (Table 3.1).

Table 3.1

Target population of the study

Sub-County Registered Youth Group	Target Population	
Mandera North	15	300
Mandera South	22	440
Mandera East	46	920
Mandera West	30	600
Lafey	12	240
Banassa	20	400
TOTAL	145	2900

3.4 Sampling Frame

The range or list of all the units of sampling within the survey population is known as the sampling frame (Schreier, 2018), and it is from this list that a sample is taken. A sampling frame is described by Rahman et al. (2022) as "a list of population components from which the unit of sampling is to be drawn." According to Jobst et al. (2023), a sampling unit is an assortment of the subjects of the inquiry that acts as the raw material for the random variable created. A sampling frame is necessary for probability sampling because if the population subject to study is not properly represented in the sampling

frame, sampling at random from that frame might not be able to answer the research question. Generalizations are acceptable 'just' for the population represented by the sample frame (Jobst et al., 2023).

The County Government of Mandera's Department of Youth Affairs provided a list of 2,900 members from the 145 registered youth organizations for the study.

3.5 Sampling Techniques, Sample Design and Sample Size

A sample is a subset of a populace or a group that shares the characteristics of the larger population being studied. Any assertion made about the sample should be true about the populace as a whole (Hennink & Kaiser, 2022). Sampling approaches and designs should be systematic and well- defined in order to derive effective and valid conclusions from the sample (Jobst et al., 2023). A sample design can be defined as the architecture or strategy for selecting study contributors (Rahman et al., 2022) with the ultimate goal of accurately representing the characteristics of the population to which it is intended to belong. The study employed the Sloven's formula to select a sample of 351 youths in Mandera County from a target population of 2900 youth.

The formula is given as;

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

Where; -

n = sample size

N= population size = 2,900

e =the level of precision = 0.05

Substituting in the formula the target population N = 2900), the desired sample size was estimated to be 351 youths in Mandera county.

To get sample proportions of youths in every sub-county in Mandera county, the researcher adopted the Probability Proportionate to Size formula which is given as;

$$\text{Probability Proportionate o size} = \frac{\text{Desired sample size (n)}}{\text{Total population (N)}} * \text{stratum population}$$

Using the formula above and the substituting the available data, the expected sample for stratum or sub-county was computed and is shown in Table 3.2.

The stratum population is shown in Table 3.2.

Table 3.2

Sub-County Sample Size

SUB-COUNTY	TARGET	STRATUM (SUB-COUNTY)
	POPULATION	SAMPLE SIZE
Mandera North	300	36
Mandera South	440	53
Mandera East	920	111
Mandera West	600	73
Lafey	240	29
Banassa	400	49
TOTAL	2900	351

3.6 Data Collection Instruments

Data was collected using structured questionnaires. According to Rahman et al. (2022), a questionnaire is a piece of writing that consists of a number of questions printed or typed in a particular order on a form or collection of forms.

According to the study's aims, a questionnaire was structured with open-ended questions allowing participants to express their opinions on a 5-point Likert Scale-type constructs leading participants to more specific response options (Galaty, 2021). The questionnaires were given out by the researcher physically dropping and picking them up. The filled questionnaires were collected later. Likert scale data is made continuous for purposes of regression analysis. Therefore, correlation and regression tests were justifiably used.

3.7 Data Collection Procedure

The researcher sought permission from the Kenya Methodist University (KeMU) and National Commission for Science, Technology & Innovation (NACOSTI) to collect data.

The researcher briefed respondents on the study's purpose and assured them of confidentiality of the data collected. The questions that the respondents did not understand were explained to them. To ensure accuracy, the collected data were carefully checked for completeness and consistency.

3.8 Pretesting of Research Instruments

Pilot study was undertaken in the neighbouring Wajir County. It is advisable to carry out pre-testing in a location different from the study one. Furthermore, Wajir County shares similar socio cultural, demographic, economic activities and climatic conditions like Mandera County hence pretesting in the county is justifiable. A pilot test is defined by Rahman et al. (2022) as a copy and practice run for the main test. The pilot test helps identify any inquiries on the questionnaire that are unclear, ambiguous, poorly written, or inappropriate (Muguna, 2021). According to Henriques and O'Neill (2023), in order to give the form some level of validity and reliability, pilot studies help to identify questions that respondents fail to comprehend or interpret in various manners, puts in the survey where they are uncertain where to go next, and inquiries that simply don't collect useful data or lack accuracy.

The researcher adopted the purposive sampling technique to select Wajir East sub county in the neighboring county of Wajir was because of convenience and the lifestyle, climatic conditions, resources and government operations are like that of Mandera County. Because a measurement mistake could be made if the questions were misinterpreted, those who responded were asked to fill in the the survey item by item. The questionnaire's layout, form and content (including content, language, sequence, and difficulty) were all pre-tested, and the results were utilized to make revisions to the questionnaire before it was given to the study participants in the actual study area in Mandera.

3.9 Assessment of Instrument Validity

Hancock et al. (2019) cite that the reliability of an instrument is often well-defined as the extent to which it truly measures "what it is intended to measure" or "what it claims to measure," i.e., it assesses a tool's suitability for addressing the goal(s) and/or research question(s) of a study. The goal of instrument validity, according to Bellazzi et al. (2022), is to determine if the research tool accurately assessed the variables it was intended to. Validity is well-defined by Lewis (2022) as the exactness and implication of assumptions drawn from study answers. The study employed convergent validity. The correlation of items within a construct was analyzed at 95 percent confidence interval.

3.10 Assessment of Instrument Reliability

By fostering transparency and lowering the likelihood of bias, reliability promotes objectivity and credibility (Hee KO et al., 2022). The consistency of findings that the same person would obtain if they took the test repeatedly or under different conditions, on multiple occasions, with varied items, or with diverse raters is what Hancock et al. (2019) define as dependability. The extent to which the components of an instrument correlate with each other, either in the two parts of the test independently, or if the tool has one topic or content, among the components themselves, is described as internal consistency by Van Harten et al. (2022). Reliability is therefore estimated rather than verified. In this study, the researcher employed the Cronbach's Alpha to assess the reliability of the measures and check the internal coherence of the constructs of independent variables. The scale value of the Cronbach's coefficient alpha lies between -1 and +1. However, a desirable

Alpha level is 0.70 or above (Cronbach, 1951). An acceptable reliability level of interior consistency in the study tool is represented by a Cronbach's alpha value of 0.5 and higher (Van Harten et al., 2022). The reliability test results are as shown in table 3.3.

Table 3.3

Reliability test

Variable	Cronbach's Alpha	Conclusion
Insecurity	0.79	Reliable
Access to credit facilities	0.92	Reliable
Technological factors	0.94	Reliable
Youth attitude on perceived benefits	0.81	Reliable
Socio-cultural practices	0.96	Reliable
Youth participation in agropastoralism	0.91	Reliable

The findings in Table 3.3 depicted that reliability test output was above the lower limit of acceptability of 0.7 alpha. The alpha coefficient of insecurity, access to credit facilities, technological factors, youth attitude on perceived benefits, socio-cultural practices and youth participation in agropastoralism were more than 0.7 and so the instrument was suitable to be used in collecting data (Cronbach, 1951).

3.11 Data Processing and Analysis

The study collected both quantitative and qualitative data. To make acquired data amenable to statistical analysis, data must be edited, coded, categorized, and tabulated (Rahman et al., 2022). The researcher and or assistants entered data from survey sheets into an excel spreadsheet before importing it into the Statistics Package for Social Sciences (SPSS) version 25 for analysis. The investigator used inferential as well as descriptive statistics to characterize the outcomes of the analysis of the quantitative information in

order to meet the study's aims. As advised by Hill et al. (2021), the data was first edited, screened, cleaned, and tabulated to detect and reduce any errors, incompleteness, misclassification, and gaps in the information that was gathered from the respondents. Frequency distribution tables and bar charts were used to depict descriptive statistics (Mishra et al., 2019). According to Amrhein et al. (2019), inferential statistics made it easier for the researcher to extrapolate from the collected data and so facilitate the generalizations of knowledge.

Data analysis includes drawing conclusions from raw data (Wahyuni, 2012). A crucial aspect of data analysis is giving text and visual data meaning (Sharma, 2018). In order to analyze the data effectively, it is necessary to prepare the data for analysis, provide deeper analysis insight for a better understanding of the data, represent the data, and develop an interpretation of the data's broader meaning (Agrawal et al., 2022). Hill et al. (2021) define data analysis as the process of organizing information for decision-making, arranging it for comprehension, or reaching a conclusion. It requires employing statistical approaches, creating summaries, distilling a big amount of data into a digestible amount, and looking for trends.

The interview schedule was used to collect qualitative data, which was then subjected to content analysis. The process of categorizing phrases using content analysis identifies associations, connotations, denotations, elocutionary forces, and other interpretations in addition to describing the logical structure of expressions. To arrive at conclusions, the data was evaluated conceptually, presented in story and prose, contrasted, and combined with quantitative findings.

Utilizing descriptive statistics, which include percentages, means, and standard

deviations, quantitative data were examined. To identify the type and significance of factors influencing youth participation in agropastoralism, multiple regression and Pearson correlation were also performed. The Pearson correlation coefficient (r) lies in the range of 1. There is a very strong association when $r = +0.7$ and above; a strong correlation when $r = +0.5$ to below 0.7; a moderate correlation when $r = 0.3-0.49$; and a weak correlation when $r = 0.29$ and lower. There is no link when $r = 0$, according to Dănăcică (2017). To determine the model's overall significance, analysis of variance (ANOVA) was performed. The variance and appropriateness of the model were demonstrated using R-square.

3.11.1 Testing of Normality

The researcher applied the Kolmogorov-Smirnov statistic to determine the average value of the score distribution (Drezner et al., 2010). When the significance value was less than 0.05, it was assumed that the distribution had violated the assumption of normality, even though this is more common in larger samples, and the results were regarded as insignificant if the probability value, P-Value, was greater than 0.05 ($P\text{-Value} > 0.05$), which indicates normality of data distribution.

3.11.2 Testing for Autocorrelation

To ascertain whether there was autocorrelation among the key data sets that were to be compared, the Durbin-Watson Test (1950) was employed. The Durbin-Watson statistic aids in determining if the residuals of a statistical regression study exhibit autocorrelation. If autocorrelation is present, it may cause the standard error to be underestimated and lead us to mistakenly believe that predictors are important when they are not. The validity and

precision of the regression model will be impacted if autocorrelation is not examined and corrected. The linear regression model presupposes independent error terms. According to the rule of thumb, a Durbin Watson value of less than two (2) denotes the existence of positive autocorrelation, a value of two or more denotes the presence of negative autocorrelation, and a value of two or nearly so denotes the absence of autocorrelation in the data set (Corporate Finance Institute, 2020).

3.12 Regression Analysis

To establish effects and magnitude of independent variables on the dependent variable, multivariate regression analysis was conducted. The multivariate regression took the form;

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

Where;

Y-Youth participation in

β_0 –y-intercept or the constant; β_1 – β_5 –regression coefficients

X_1 –Influence of insecurity,

X_2 –influence of access to credit,

X_3 - influence of technological factors,

X_4 - influence of Perceived benefits of agropastoralism by youth and

X_5 - influence of cultural factors

ϵ -error term

3.13 Ethical Considerations

The researcher ensured the research was ethical by first protecting the respondents' rights who were the subject of the study. Second, participants' confidentiality regarding the data they provided was ensured. The researcher clearly and concisely explained the study's objective to the respondents in order to ensure that participants provided accurate and informed data. The consent of the youth was sought before being included in the study. No respondent was coerced into participating in the study, and thus participation was entirely voluntary. Finally, the researcher allowed sufficient time for respondents to complete the questionnaire in order to avoid pressuring and coaxing participants.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The section comprises the findings as well as their explanation and interpretation. The validity of the data collection instruments as well as the study's response rate is reported together with the respondents' demographics. Descriptive and inferential statistics and their interpretation is also discussed. Means and standard deviations were used to present descriptive statistics, while correlation and regression analysis results are also presented including model summaries, ANOVA, and correlation coefficients.

4.2 Response Rate

A total of 351 questionnaires were administered to the respondents out of which, 307 were dully filled and returned. This represents a response rate of 87.5 percent. The results of the response rate achieved are tabulated in Table 4.1.

Table 4.1

Response Rate

	Frequency	Percent
Response	307	87.5
Non-Response	44	12.5
Total	351	100

According to Fincham (2008), a response rate of at least 60 percent is satisfactory for a research study. Thus, the response rate of the study was satisfactory for further analysis.

4.3 Reliability Test Results

The study used a Cronbach's Alpha coefficient to gauge the reliability of the data collection tool. The reliability of the data gathering device was as shown by a Cronbach's Alpha coefficients of which most values were >0.7 giving high reliability of the constructs of the independent variables as shown in Table 4.2.

Table 4.2

Reliability Test Results

	Cronbach's Alpha	Comment
Youth Participation	0.699	Reliable
Insecurity	0.76	Reliable
Credit Accessibility	0.77	Reliable
Technological factors	0.785	Reliable
Youth Attitude	0.754	Reliable
Socio-Cultural Practices	0.752	Reliable

The consequences in Table 4.2, indicate that all the independent variables in the study like insecurity, credit accessibility, technological factors, youth attitude and cultural factors had a Cronbach alpha of >0.7 meaning the constructs were reliable. Thus, the data collected using the instrument can be used to make meaningful and reliable conclusions.

4.4 Testing for Normality of Data Distribution

The researcher applied the Kolmogorov-Smirnov statistic to determine if the distribution of the scores was ordinarily distributed. The assumption of normalcy should be taken into account while conducting normality tests (Brooks & Condori, 2018). If the p value is less than 0.05, the data are not normally distributed, and if the p value is greater than 0.05, they are. The normality test results are shown in Table 4.3.

Table 4.3*Normality Test Results*

	Kolmogorov-Smirnov Statistic	Df	Sig.
Youth Participation	0.094	307	0.065
Insecurity	0.09	307	0.194
Credit Accessibility	0.061	307	0.207
Technological factors	0.112	307	0.132
Youth Attitude	0.096	307	0.359
Socio-Cultural Practices	0.079	307	0.214

From the results outlined in Table 4.3, the estimated p values for all the variables of the study were greater than 0.5 ($p > 0.05$). Thus, the study concludes that the estimated p-values met the criteria for the Kolmogorov-Smirnov test and that the population was normally distributed. Hence, the results of the analysis of the data collected could be used to make reliable inferences.

4.5. Tests for autocorrelation

Failure to identify and account for serial correlation in the idiosyncratic error term in a panel model would result into biased standard errors and inefficient parameter estimates. Autocorrelation was tested by use of Durbin-Watson test. The autocorrelation results are shown in Table 4.4.

Table 4.4

Autocorrelation results

Youth participation in in arid and semi-arid lands

Durbin-Watson d-statistic (5, 301) =2.012

Prob > F = .607

F-test was 0.607 according to the test statistic. D-statistic should range from 0 to 4 when using the Durbin Watson test to measure serial correlation. Positive autocorrelation is denoted by a number of 0 to 2, and negative autocorrelation is denoted by a value of 2 to 4. The data did not appear to be significantly affected by serial autocorrelation, according to the d-statistic of 2.012.

4.6 Demographic Information of the Respondents

This section contains the demographic data pertaining to the respondents in the study area. This required recording the respondents' gender, age, marital status, highest education level, and the subcounty in which they resided. The ensuing subsections contain a presentation of the analysis' findings.

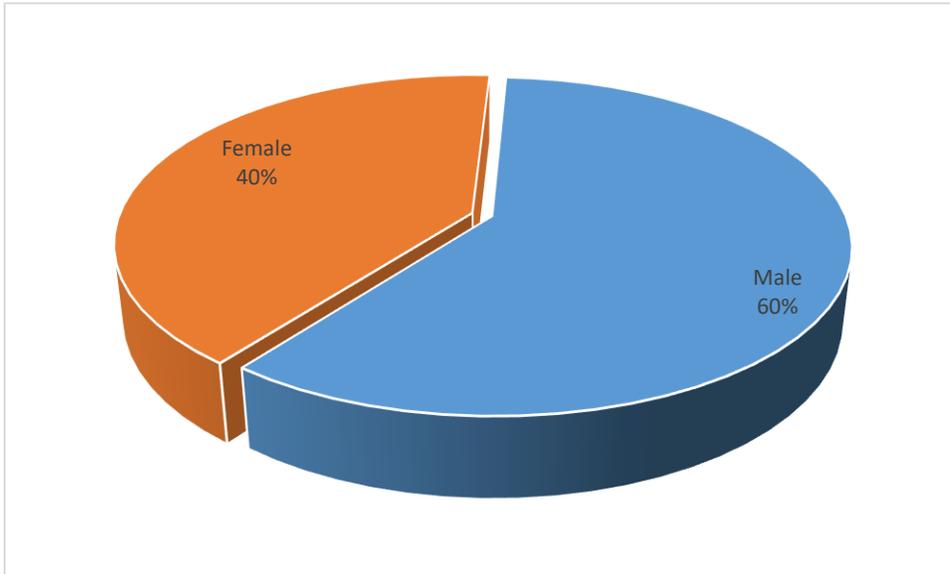
4.6.1 Gender of the Respondents

The respondents were disaggregated according to their gender because of the different roles of males and females in the family. From the data analysis results, out of the total of 307 dully filled questionnaires, 183 respondents were male whereas 124 were female. The results outlined in Figure 4.1 indicate that 60 percent of the respondents were male whereas 40 percent were female. This is an indication that more male respondents

participated in the study compared to female respondents.

Figure 4.1

Gender distribution of the respondents



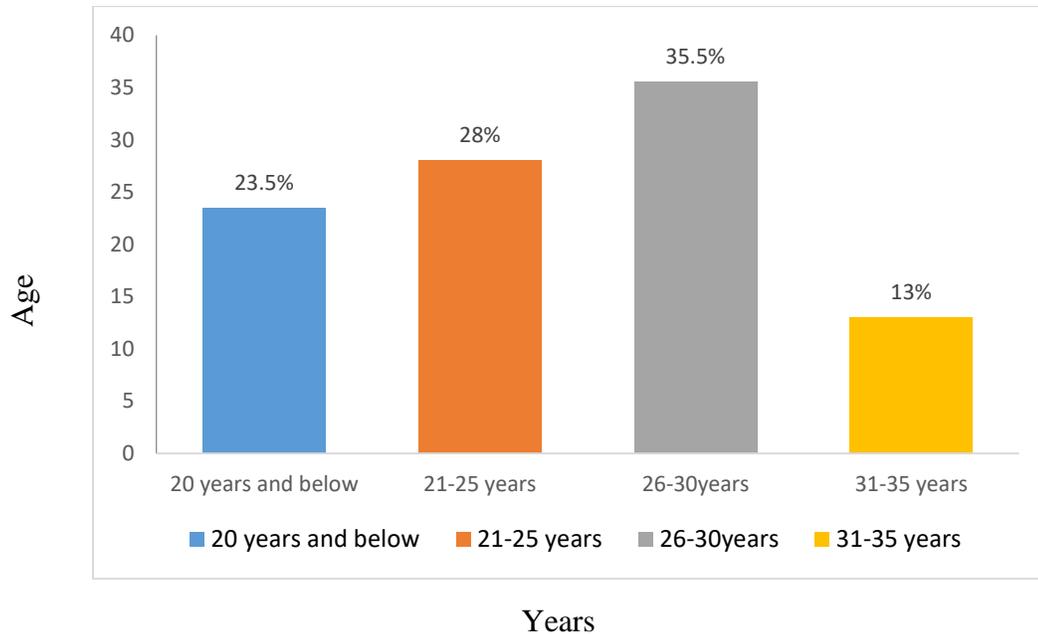
4.5.2 Age Distribution

The study further analyzed the age classes of the respondents between <20 to 35 years.

The age distribution of the participants involved in the study is shown in Figure 4.2.

Figure 4.2

Age Distribution



Most respondents, 109 (35.5%) were aged 26-30 years, 86 (28%) were aged between 21-25 years, and 72 (23.5%) were aged 20 years and below. Furthermore, 40 (13%) were aged 31-35 years. The results imply that the majority of the respondents who participated in the study were in the desired youth category of below 35 years of age.

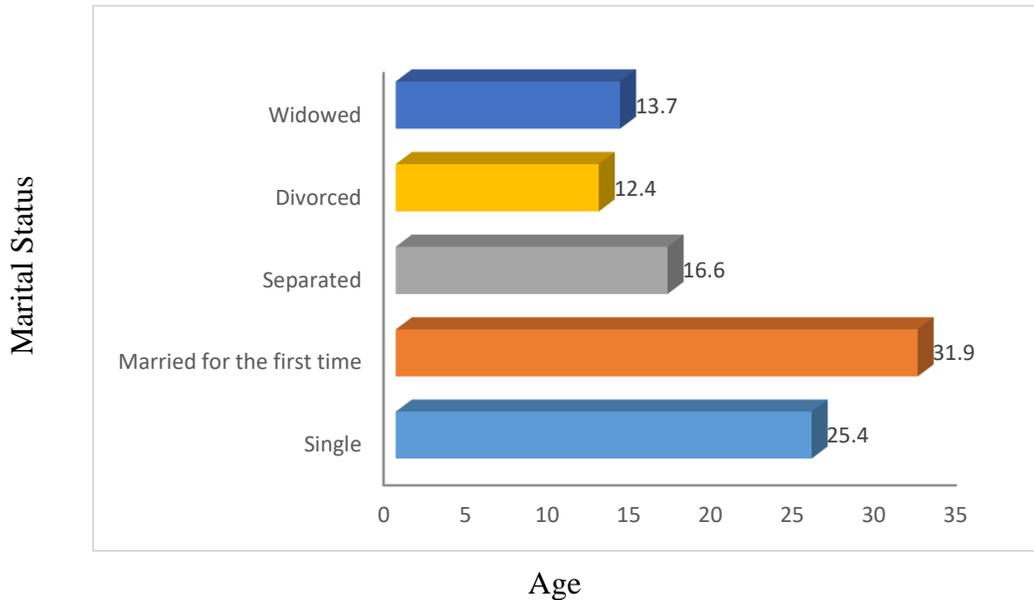
4.6.3 Marital status of the respondents

The study further sought to analyze the marital status of the respondents. From the results presented in Figure 4.3, marital statuses were categorized into six groups, which included those who were single 78 (25.4%) as at the time of the study, married for the first time 98 (31.9%), separated 51 (16.5%), divorced 38 (12.4%) and widowed 42 (13.7%). Slightly more than half (57%) of the respondents were either single or married for the first time.

This helped explain more about marital status and whether it influences youth participation in

Figure 4.3

Marital Status

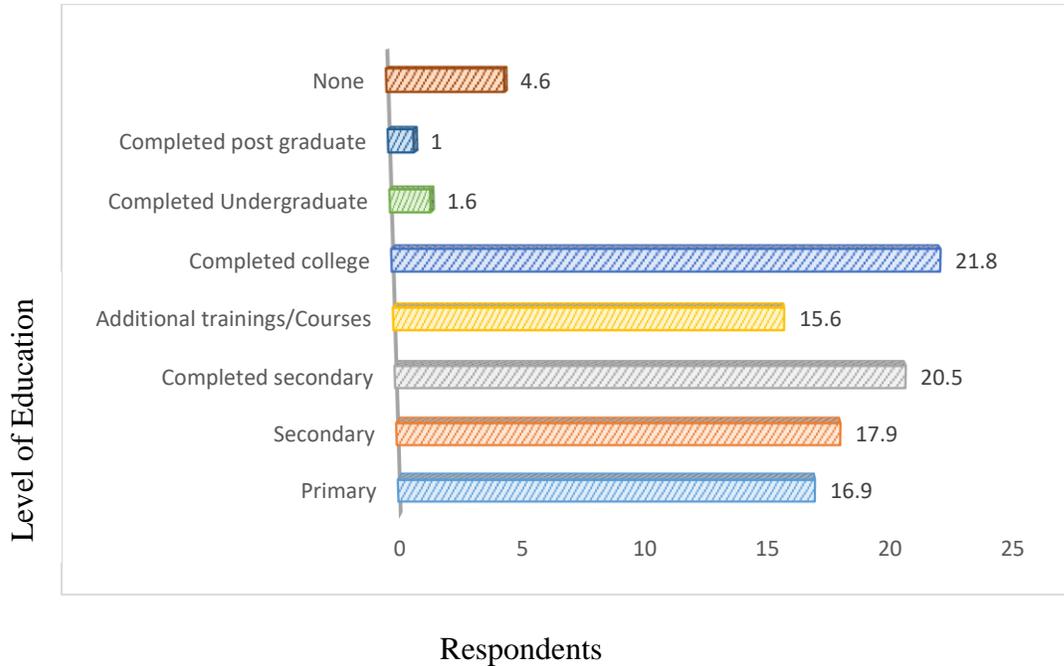


4.5.4 Level of Education

The top level of education attained by the respondents as at the time of study was also analyzed. From the analysis of the results, 52 respondents had primary education (16.9%), 55 had some secondary education at 17.9%, 63 (20.5%) had completed secondary education, 48 (15.6%) had additional courses/ trainings, 67 (21.8%) had completed college, 5 (1.6%) had completed undergraduate, 3 (1%) had postgraduate education while 14(4.6%) had no formal education at all. The results of this analysis are presented in Figure 4.4.

Figure 4.4

Highest Level of Education



It can be observed from the outcomes in figure 4.4 that the majority of the respondents (21.8 percent) had completed college, 20.5 percent had completed secondary school, 17.9 percent secondary and 16.9 percent primary. In addition, 15.6 percent had completed additional courses/trainings, 4.6 percent had no formal education, 1.6 percent had completed undergraduate studies and finally 1 percent had completed postgraduate studies.

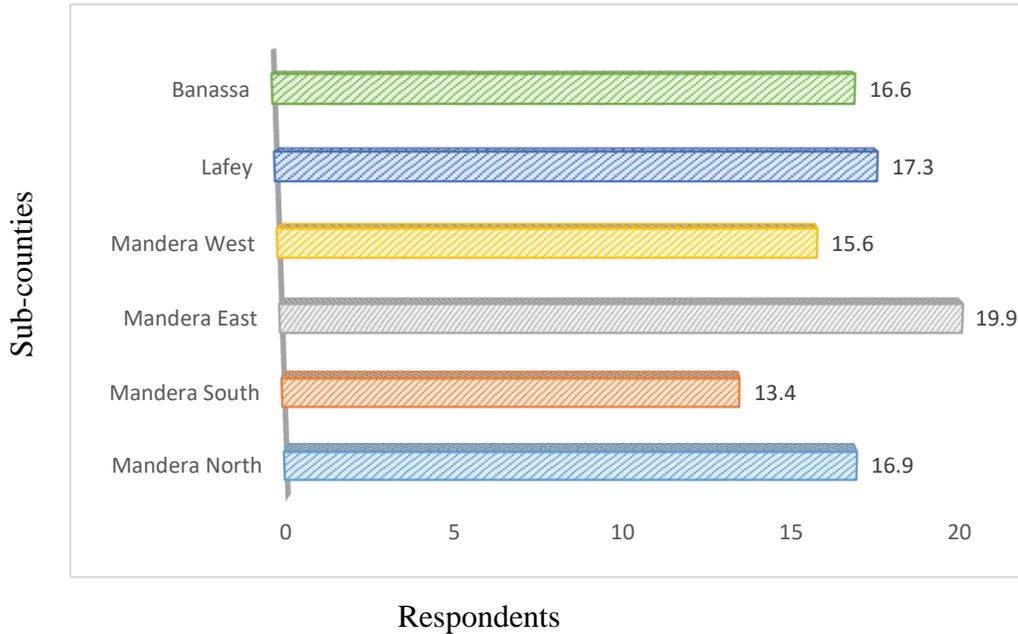
4.6.5 Sub Counties of residence of the respondents

The study sought to analyze the respondents according to the sub-counties they came from within Mandera County. There may be differences in youth participation in across the Mandera sub counties. The distribution of the respondents by Sub County in Mandera

County is shown in Figure 4.5

Figure 4.5

Residence Sub-counties of the respondents



It can be seen from the outcomes in Figure 4.4 that the majority of the respondents (19.9 percent) were from Mandera East, 61(17.3 percent) from Lafey, 51 (16.9 percent) from Mandera North, 52 (16.6 percent) from Banassa, 53 (15.6 percent) from Mandera West and finally 41 (13.4 percent) from Mandera South. The distribution of the questionnaires covered the six sub counties in Mandera. This ensured that the responses are representative of the actual study in the region.

4.6.6 Practicing/Not Practicing Livestock Keeping or Crop Production

From the responses gathered, 54.4 percent of the respondents were practicing crop production and livestock keeping or either.

4.7 Influence of Insecurity on youth participation in

Both descriptive statistics and regression analysis results on the effects of insecurity on youth participation in agropastoralism in Mandera County as presented here below.

4.7.1 Descriptive Statistics on effects of Insecurity

The study sought to determine how insecurity affected youth participation in agropastoralism in Mandera County. The questionnaire had constructs on a 5-point Likert scale with 1 standing for strongly disagree (SD), 2 for disagree (D), 3 for Moderate (M), 4 for agree (A) and 5 for strongly agree (SA). Analysis is presented in Table 4.5.

Table 4.5***Descriptive Results for Insecurity***

	SD	D	M	A	SA	M	Std
	f ,%	f ,%	F, %	f ,%	f ,%		
Community conflicts lead youth to quit in Mander county.	21 7%	42 14%	41 13.6 %	96 31.9%	101 33.6%	3.7	1.3
When there is anxiety, it is difficult for youth to participate in .	2 0.7%	31 10.1%	38 12.4 %	115 37.5%	121 39.4%	4.0	1.0
Livestock rustling discourages youth from pastoralism in Mander county.	20 6.5%	59 19.2%	58 18.9 %	83 27%	87 28.3%	3.5	1.3
Insecurity, prevent youth from in that bandits destroy crops and steal livestock	0 0%	47 15.3%	43 14%	104 33.9%	113 36.8%	3.9	1.1
Insecurity causes displacement hence youth cannot engage in , which needs to be in one space.	2 0.7%	37 12.1%	38 12.4 %	111 36.2%	119 38.8%	4.0	1.0
The national government and the County Government have made efforts at improving security which has made possible in the County	14 4.6%	44 14.3%	50 16.3 %	99 32.2%	100 32.6%	3.7	1.2
Conflicts in this area have a negative impact on youth participation in .	16 5.2%	55 17.9%	50 16.3 %	88 28.7%	98 31.9%	3.6	1.2
Mean of means and Std						3.77	1.16

Key: SD=strongly disagree, D=Disagree, M=moderate, A=agree, SA= strongly agree, Std standard deviation

From the findings, the mean score of 3.77 falling in the “agree” category on the Likert scale showed that the majority of the respondents (65.5%) were inclined to believe that most youth were shirking agropastoralism due to insecurity. The low mean Standard deviation of 1.16 meant that the opinions were not varied as it was below 2.00, which would significantly alter the findings. It can be further deduced from the outcomes in Table 4.5 that the majority 197(65.4%) agreed (either agreed or strongly agreed combined) that youth quit agropastoralism as a result of community conflicts in Mander County. However, 63(20.9%) of the respondents were in disagreement while 41(13.6%)

were not sure. The mean and standard deviation recorded by the statement were 3.7 and 1.3 that fell in the “agree” category on the Likert Scale implying that although failure to practice agropastoralism could be explained by other reasons than insecurity, it remained one of the major concerns. The variation in responses of about 40% among those who disagreed and those not decided meant that insecurity was not the same in all areas of the county or was not really the cause of youth leaving agropastoralism as a livelihood.

On whether it was hard for youth to participate in agropastoralism when there was insecurity, 236(77.12%) of the respondents agreed, 32(10.5%) recorded a disagreement whereas 38(12.4%) were moderate. The statement mean was 4.0 and standard deviation of 1.0 implying an “agreement” among the respondents on average.

Further, the majority 170(55.4%) of the respondents agreed that livestock rustling discouraged youth from pastoralism in Mandera County, 79(25.7%) were in disagreement while 58(18.9%) were neutral. The statement attracted a mean of 3.5 and respective standard deviation of 1.1, an inclination towards “agree” on the Likert Scale. Additionally, 217(70.7%) agreed that insecurity prevented youth from agropastoralism in that bandits destroyed crops and stole livestock whenever they visited while 47(15.3%) were in disagreement and 43(14%) of the respondents took a neutral stand.

The mean and respective standard deviation was 3.9 and 1.1 in that order which indicates an agreement among the respondents. Insecurity, especially caused by the porous border with Somalia from which Al-Shabab and other terrorists occasionally infiltrate the County and wreak havoc as well as other bandits means a real problem on economic activities like agropastoralism exists in the county. There is need to do something to stem insecurity especially posed by terrorists in order for the economy to thrive and food

security to be ascertained with the youth engaging in productive activities like agropastoralism instead of running away to towns and cities.

The majority at 230 (75%) of the respondents agreed that youth could not engage in agropastoralism, which needed a person to be in one space as a result of insecurity that caused displacement while 38(12.4%) recorded a moderate stand and 39(12.7%) of the respondents disagreed. The statement recorded a mean of 4.0 and a standard deviation of 1.0. Moreover, 199(64,8%) of the participants in the study agreed that the national and County governments had made efforts at improving security which had made agropastoralism fairly possible in the County. However, 50(16.3%) were undecided meaning insecurity was a major concern for almost half of the population. The mean and standard deviation recorded by the statement were 3.7 and 1.2 in that order implying an agreement. The issue of conflicts in the area having a negative impact on youth participation in agropastoralism recorded responses of 50(16.3%) as neutral, while the majority at 176(60.6%) were in agreement with a mean of 3.6 and a standard deviation of 1.2 indicating an agreement among the responses.

Based on the findings, insecurity is an issue that affects youth participation in agropastoralism. An insecure place is not conducive for rearing livestock or growing crops as done cannot know when conflicts would erupt leading to the loss of lives, loss of the livestock and even destruction of crops hence undermining youth involvement in agropastoralism. The volatile borders with the neighboring countries and counties coupled with the high rate of youth unemployment and high school drop outs has forced the youth to join outlawed groups, get radicalized, get easy access to small arms as well as get into drug use or trade, which adversely affects youth participation in

Agropastoralism. Most of their time that could be productively spent in active engagement in agropastoralism is wasted on their engagement in criminal acts. In the end, their involvement in agropastoralism has little impact on their output as a whole. The primary source of investments, income, and employment prospects in the ASAL regions is pastoralism. These results are consistent with the findings of Aga (2022) who indicated that insecurity is a contributing factor to lack of youth participation in agropastoralism as it causes worries, fear and alienation among the youth thus resulting in negative implications to the economic activities in a community. Ibrahim (2020) further posit that cases of insecurity results in theft of livestock, fighting for grazing land and water streams for crop farming coupled with the factor of the nomadic nature in these areas, hence discourages youth from investing in agropastoralism. Similarly, a study by Eferibo (2022) also adds that pastoralists are affected by inter-communities' violence and conflicts that show big impact to their livelihood.

4.7.2 Relationship between Insecurity and Youth Participation in agropastoralism

A association analysis was carried out to determine the strength and direction of relationship between insecurity and youth participation in agropastoralim. Table 4.6 shows the results.

Table 4.6***Correlation between Insecurity and Youth Participation in Agropastoralism***

		Youth Participation	Insecurity
Youth Participation	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	307	
Insecurity	Pearson Correlation	-.496**	
	Sig. (2-tailed)	0.000	
	N	307	307

From the results presented in Table 4.6, the correlation between the variable insecurity and youth participation was negative and statistically significant ($r=-0.496$, $P=0.000<0.05$) implying that insecurity was a significant determinant of failure of youth participation in agropastoralism in Mandera County. Pastoralism in the ASAL areas is the central basis of investments, living and service opportunities. As the communities living in Madera County are pastoralist in nature, their constant movement from place to place in search of water and pasture for their livestock is in most cases a source of the regular conflicts reported in these communities. However, the intercommunity conflicts, which mostly results in theft of livestock as well as destruction of property and losses of life impacts negatively on the economic wellbeing and livelihood of these communities, thus discouraging investments in the sector. Pastoral communities often experience a series of inter-clan conflicts. These combats focus on theft of livestock, fight for grazing land and nowadays, water streams for crop farming. All these factors among others combined, significantly contributed to the limited participation by the youth in agropastoralism. The results are in tandem with the findings of Abebe et al. (2023) who argued that, cases of

insecurity due to conflict over critical resources was a major factor that affected investment in agropastoralism. In addition, cases of livestock theft also discourage investment in agropastoralism. The study findings are also supported by Kimokoti (2022) who found that conflicts and banditry were most common insecurity matters in ASALs. Likewise, Eferebo (2022) found that insecurity hindered the proportion of youth in agropastoralism as pastoralists are often a target of banditry.

4.7.3 Regression Results for Insecurity and Youth Participation in agropastoralism

A regression analysis was carried out to determine whether there was any linear relationship between incidences of insecurity and youth participation in agropastoralism. Table 4.7 shows the findings.

Table 4.7

Model Summary results of Insecurity and Youth Participation in agropastoralism

R	R Square	Adjusted R Square	Std. Error of the Estimate
.496a	0.246	0.244	0.54015

a Predictors: (Constant), Insecurity

It can be observed from Table 4.7 that insecurity explains 24.6 percent of youth participation in agropastoralism in Mandera County, other factors constant. This is illustrated by the estimated value of R Square in the model (0.246). Thus, the security situation in Mandera significantly determines youth participation in agropastoralism in the County. Table 4.8 shows ANOVA results.

Table 4.8***ANOVA Results of Insecurity and Youth Participation in agropastoralism***

	Sum of Squares	df	Mean Square	F	Sig.
Regression	29.057	1	29.057	99.593	.000b
Residual	88.987	305	0.292		
Total	118.045	306			

a Dependent Variable: Youth Participation in agropastoralism

b Predictors: (Constant), Insecurity

Table 4.8 indicate that the estimated model was statistically significant as evidenced by the estimated P value on the estimated model of $0.000 < 0.05$. This can also be illustrated by the estimated F value in the mode $F_{1,305} = 99.593$ that is greater than the F critical value of 1.8473 from the F tables. Table 4.9 shows the regression results.

Table 4.9***Regression coefficients and t-test value of Insecurity and Youth Participation in agropastoralism***

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.597	0.169		9.467	0.000
Insecurity	-0.454	0.046	0.496	-9.98	0.000

a Dependent Variable: Youth Participation in agropastoralism

From the results in the estimated model, the coefficient of insecurity was negative ($\beta = -0.454$) and statistically significant ($P = 0.000 < 0.05$). The null hypothesis, there was no effect of insecurity on youth participation in agropastoralism in Mandera County was rejected and the study concluded that insecurity significantly affected youth participation in agropastoralism in Mandera County. The volatile borders with the neighboring

countries like Ethiopia and Somalia coupled with the high rate of youth unemployment and high school drop outs has catalyzed the youth to join outlawed groups, get radicalized, get easy access to small arms as well as get into drugs which affects the level of youth participation in agropastoralism. Most of their time that could be productively spent in active engagement in agropastoralism is wasted on their engagement in criminal acts. At the end, their engagement in agropastoralism becomes minimal affecting their overall contribution to the county's economic development. Pastoralism in the ASAL areas is the chief basis of investments, living and occupation opportunities.

As the communities living in Madera County are pastoralist in nature, their constant movement from one dwelling to another in search of water and meadows for their cattle is in most cases a source of the regular conflicts reported in these communities. The intercommunity conflicts, which mostly results in theft of livestock as well as destruction of property and losses of life impacts on the economic wellbeing and livelihood of these communities, thus discouraging investments in the sector (Tugjamba et al., 2023). A reading by Abebe et al. (2023) argues that, livestock raiding causes distrust among pastoral communities, which is a major cause of conflicts. Due to high population in the areas and few grazing pastures, many pastoralists have shifted to crop farming for food security (Eaton, 2019). The Eaton study further found that there was competition on few rivers passing across the counties in Northern-Kenya. These results are in agreement with the results of Aga (2022) who indicated that insecurity is a contributing factor to lack of youth participation in agropastoralism as it causes worries, fear and alienation among the youth thus resulting in negative implications to the economic activities in a community. Ibrahim (2020) further posits that cases of insecurity results in theft of livestock, fight for

grazing land and water streams for crop farming coupled with the factor of the nomadic nature in these areas, hence discourages youth from investing in agropastoralism.

4.8 Influence of Credit Access on youth participation in agropastoralism

Financial credit is a critical enabler of economic development initiatives and its access could determine success or failure of such initiatives. The results of the investigation on access to credit by youth on their participation in agropastoralism are presented in the subsections below.

4.8.1 Descriptive Statistics on Credit Access

The answers shown in the Table 4.10 are respondents' opinions on the youth access to credit facilities.

Table 4.10***Descriptive Statistics for Credit Access***

	SD	D	M	A	SA	M	Std
	f, %	F, %	F, %	F, %	F, %		
I can access credit as and when I need it from lenders to finance my agro-pastoralist activity	139 45.3%	40 13%	31 10.1%	50 16.3%	47 15.3%	2.4	1.6
Youth access credit facility in Mandera County is easy and affordable.	117 38.1%	47 15.3%	40 13%	51 16.6%	52 16.9%	2.6	1.5
Easy access to credit facilities motivates youth like me to participate in	47 15.3%	50 16.3%	49 16%	83 27%	78 25.4%	3.3	1.4
Lack of credit facility for youth is the main factor hindering their involvement into in Mandera county	39 12.7%	85 27.7%	82 26.7%	55 17.9%	46 15%	2.9	1.3
Money lenders are many, varied and lend at affordable interest rates which makes credit access easy in Mandera County.	54 17.6%	69 22.5%	66 21.5%	59 19.2%	59 19.2%	3.0	1.4
It is very difficult for youth in Mandera County to access credit facilities since they have no guarantors or property to serve as security.	28 9.1%	72 23.5%	65 21.2%	69 22.5%	73 23.8%	3.3	1.3
There is shortage of lenders to the youth since they do not have collateral hindering their engagement in agropastoralism since they lack investment funds.	18 5.9%	45 14.7%	45 14.7%	102 33.2%	97 31.6%	3.7	1.2
Mean of means and average Standard Deviation						3.02	1.38

Key: SD=Strongly disagree, D=Disagree, M=moderate, A=agree, SA= strongly agree, Std standard deviation

From Table 4.10, it can be deduced that a mean of 3.02 which lies in the region of neither agree nor disagree was recorded for effects of access to credit on youth participation in agropastoralism in Mandera County. The average standard deviation of 1.38 which was below 2 showed low variability in the mean scores of the respondents involved. The statement, I can access credit as and when I need it from lenders to finance my

agropastoral activity received the following responses. 97(31.6%) of the responses recorded an agreement, 179(58.3%) disagreed whereas 31(10.1%) were neutral. The statement recorded a mean of 2.4 and respective standard deviation of 1.6, an indication that the respondents were not in agreement on average. This was a strong statement that access to credit was not possible as and when needed. Furthermore, 164(53.4%) disagreed that the access of credit facility in Mandera County was easy and affordable while 103(33.6%) were in agreement that it was possible. A small number 40(13%) of the respondents took a neutral stand. The mean and respective standard deviations of the statement were 2.6 and 1.5 which indicated that the responses were moderate. The statement, easy access to credit facilities motivates youth like me to participate in agropastoralism recoded a mean of 3.3 and a standard deviation of 1.4 indicating that the responses were moderate. A total of 161(52.4%) of the respondents were in agreement, 97(31.6%) disagreed while 49(16%) were neutral regarding the statement.

Most respondents at 124(40.4%) disagreed that lack of credit facility for youth was the main factor hindering their involvement into agropastoralism in Mandera County. In addition, 82(26.7%) of the respondents were neutral while 101(32.9%) were in agreement. This mixed distribution of the opinions meant that this construct of credit access was not the main factor hindering the youth from agropastoralism. There were other pertinent issues. The mean and standard deviation recorded were 2.9 and 1.3 in that order implying that on average, the responses were moderate. On whether money lenders were many, varied and lent at affordable interest rates which made credit access easy in Mandera County, 123(40.1%) of the respondents disagreed, 66(21.5%) recorded a neutral stand whereas 118(38.4%) were in agreement. The statement recorded a mean of 3.0 and

corresponding standard deviation of 1.4 implying moderate responses on average.

Credit access facilities promote success of any economic activity in any community. The driving force of any kind of investment is the financial capability. Credit spurs growth and development of an individual as well as a country. A credit facility reduces the level of dependence and increases the productivity of the members of the society. Thus, lack of credit accessibility significantly explains the low level of youth participation in agropastoralism in Mandera County. The results are in line with a study by Khadse et al. (2018) that indicates that, youth are encountering difficulties in operating agricultural activities due to limited resources like finances. Also, a study by Wongnaa and Babu (2020) posits that, credit access is a major deterrent that may prevent many youths from participating in agricultural activities. In Nigeria, a study on agricultural production by Khadse et al. (2018) also revealed that, youth shy away from agropastoralism as it is perceived to be a tedious process of acquiring credit facilities, which may not be available. On the contrary, a report by World Bank (2018) supposes that many institutions are interested in giving loans to youths for agricultural projects.

4.8.2 Correlation Analysis between Credit Access and Youth Participation

A correlation analysis was conducted to determine the strength and direction of relationship between credit access and youth participation. The findings are shown in Table 4.11.

Table 4.11***Correlation Results of Credit Access and Youth Participation in agropastoralism***

		Youth Participation	Credit Accessibility
Youth Participation	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	307	
Credit Accessibility	Pearson Correlation	.541**	
	Sig. (2-tailed)	0.000	
	N	307	307

The association between the credit accessibility and youth participation was positive and statistically significant ($r=0.541$, $P=0.000<0.05$). This implies that timely access to credit could increase the number of youth participation in agropastoralism in Mandera County. Financial service providers see youth loans as risky in part due to the absence of a credit history, poor saving habits, lack of a guarantee, and insufficient financial capacity. As a result, the current financial solutions do not effectively target young people and are difficult to access. The results are consistent with the findings of Maritim (2020) who pointed out that access to financial assistance in form of loans had remained a nightmare to youth who wanted to engage in agropastoralism. Youth were willing to engage in agropastoralism activities in rural areas but access of credit from banks and SACCOs hindered them. Another contribution by Cull & Hartarska (2023) argues that financial institutions should solve young people's problems on financial constraints by easing process and allowing many types of collateral when giving credit facilities geared towards agropastoralism.

4.8.3 Regression Analysis between Credit Access and Youth Participation

A regression inquiry was done to find out the linear relationship between credit access and youth participation. The results are shown in Table 4.12.

Table 4.12

Model Summary of Credit Access and Youth Participation in agropastoralism

R	R Square	Adjusted R Square	Std. Error of the Estimate
.541a	0.293	0.291	0.52315

It is important to note that the results summarized in Table 4.12 shows that credit access accounted for about 29.3% of factors hindering youth participation in agropastoralism, all other factors constant as given by the estimated R Square value of 0.291 in the model. Therefore, the level of youth involvement in agropastoralism in Mandera County was influenced by credit availability as it explained 29.1 percent of youth participation in agropastoralism activities. Table 4.13 gives ANOVA results.

Table 4.13

ANOVA Results of Credit Access and Youth Participation in agropastoralism

	Sum of Squares	df	Mean Square	F	Sig.
Regression	34.57	1	34.57	126.312	.000b
Residual	83.474	305	0.274		
Total	118.045	306			

The results in Table 4.13 indicate that the estimated model was statistically significant as evidenced by the P value $0.000 < 0.05$. This can also be illustrated by the estimated F value in the mode $F_{1,305} = 126.312$ that is greater than the F critical value of 1.8473. Table

4.14 shows regression results.

Table 4.14

Regression Coefficients and t values of Credit Access and Youth Participation in agropastoralism

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.671	0.144		11.606	0.000
Credit Accessibility	0.51	0.045	0.541	11.239	0.000

The study concludes that credit accessibility was a key determinant of young people's involvement in agropastoralism, rejecting the null hypothesis that there was no effect of access to credit on youth involvement in agropastoralism in Mandera County. Due to its great sensitivity to exogenous shocks including catastrophic weather occurrences, pest and disease outbreaks, and seasonality, agropastoralism is viewed as risky by financial lenders. Lenders are therefore reticent to promote agricultural loans. Additionally, because of the lack of financial history, poor saving habits, lack of collateral, and inadequate financial capacity, financial service providers view giving loans to youth as highly risky. As a result, the current financial solutions do not effectively target young people and are difficult to access.

Other intrinsic obstacles to credit access include limited access to financial institutions in some locations, low levels of understanding of credit access procedures, and an unwillingness to take advantage of the sources of credit that are available. People residing in Mandera are mostly Muslims and due to their faith, they want sharia compliant loans.

The majority of the listed lending institutions are not sharia compliant. High interest rates on the credit that was made accessible, low levels of literacy, high unemployment, a lack of connections to the sources of business funding that were available, and a lack of comprehensive support for specific groups were other factors that contributed to the limited access to credit.

The results agree with those of the Khadse et al. (2018), who initiate that youth's shortage of admission to financing is a contributing factor in their struggles with agricultural operations. Young people stay away from agropastoralism because they believe it involves a difficult process for obtaining loans, which may not be accessible. According to a study by Elzahi Saaid Ali (2022), youth have limited access to credit since they are viewed as high-risk due to their insufficient sources of income and consequently low financial capacity. According to Cull and Hartarska (2023), financial institutions should make credit facilities more accessible to young people who are experiencing financial difficulties by streamlining the application procedure and permitting a variety of collateral.

4.9 Technological factors

The section presents both the descriptive and regression results for technological factors and youth participation in agropastoralism in Mandera County.

4.9.1 Descriptive Statistics on Technological Factors

Finding out how technological factors impact young people's involvement in agropastoralism in Mandera County was the study's third goal. Table 4.15 shows the findings of the study.

Table 4.15***Descriptive Statistics for Effects of Technological Factors on Youth Participation***

	SD	D	M	A	SA	Mean	Std
Youth are able to access new technologies on	26 8.5%	79 25.7%	79 25.7%	65 21.2%	58 18.9%	3.2	1.2
Technology helps the youth to acquire information that influences them to participate in	23 7.5%	55 17.9%	52 16.9%	90 29.3%	87 28.3%	3.5	1.3
Emergence of mobile phone technology provides updated information that helps youth to participate in	19 6.2%	71 23.1%	74 24.1%	75 24.4%	68 22.1%	3.3	1.2
Information from internet influences youth to participate into	22 7.2%	75 24.4%	65 21.2%	75 24.4%	70 22.8%	3.3	1.3
Although there is advancement in ICT, there are other technological hindrances to in Mandera County like availability of airtime, data bundles, etc.	16 5.2%	63 20.5%	54 17.6%	86 28%	88 28.7%	3.5	1.2
Mean of means and average						3.36	1.2
Standard Deviation							4

Key: SD=Strongly disagree, D=Disagree, M=moderate, A=agree, SA= strongly agree, Std standard deviation

It can be observed from the results in Table 4.15 that 105(32.4%) of the respondents strongly disagreed that youth were able to access new technologies on agropastoralism while 123(40.1%) were in agreement with the statement. However, 65(21.2%) of the respondents did not take sides. The mean and standard deviation were 3.2 and 1.2 respectively implying that on average, the responses were moderate. On whether technology helps the youth to acquire information that influences them to participate in

agropastoralism, 177(57.7%) of the respondents agreed, 78(25.4%) recorded a disagreement that was strong whereas 52(16.9%) were moderate. The findings had a mean of 3.5 and respective standard deviation of 1.3 implying an agreement among the respondents on moderate.

Most of the respondents at 143(46.6%) agreed that emergence of mobile phone technology provided updated information that helped youth to participate in agropastoralism while 90(29.3%) were in disagreement and 74(24.1%) recorded a neutral stand. The statement recorded a mean of 3.3 and a standard deviation of 1.2. Moreover, 145(47.2%) of the participants in the study agreed that information from internet influenced youth to participate in agropastoralism with 97(31.6%) recording a disagreement and 65(21.2%) being neutral regarding the statement. The mean and standard deviation recorded were 3.3 and 1.3 respectively implying that the responses were moderate. The statement, although there was advancement in ICT, there were other technological hindrances to agropastoralism in Mandera County like availability of airtime, data bundles, etc. attracted responses as follows; 54(17.6%) of the respondents were neutral, (56.7%) in agreement and 79(25.7%) disagreed with a mean of 3.5 and a standard deviation of 1.2 in indicating an inclination towards agreement with the statement.

Technology has a significant role in improving contemporary agropastoralism. Many young people living in remote regions lack access to agricultural education, knowledge, and cutting-edge technology. Where there are chances for innovation, affordability continues to be a barrier. Most county governments not have rolled out platforms that enable the utilization of technology in agropastoralism. This is despite the youth being

considered as more knowledgeable with regards to best agropastoralism practices. Agropastoralists in the rural areas also do not enjoy adequate extension services. Rural places with weak network coverage and limited internet penetration have high access costs. Because of this, young people living in rural areas are unable to use mobile-based technologies that promote smart agropastoralism. The results concur with Nyarko and Kozari (2021) that technology is bringing people together in sharing opinions and information. Vema (2018) also asserted that technology is gaining fame in agricultural practices worldwide. A report by Singleton et al. (2023) indicated that ICT had increased the willingness of youth in Mandera to engage in livestock keeping as they got information on how to manage diseases and breeding. Technological tools according to the report, aided youths and women to manage small and large -scale farming of food crops through selection and monitoring of production. According to Tang et al. (2020), technology is the solution of curbing losses, low production, high labor cost and improving quantity of agricultural products.

4.9.2 Correlation Analysis between Technological Factors and Youth Participation

Results of correlation analysis are presented in Table 4.16.

Table 4.16***Correlation Results of Technological Factors and Youth Participation***

		Youth Participation in agropastoralism	Technological factors
Youth Participation in agropastoralism	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	307	
Technological factors	Pearson Correlation	.488**	
	Sig. (2-tailed)	0.000	
	N	307	307

The correlation between technological factors and youth participation in agropastoralism was positive and statistically significant ($r=0.488$, $P=0.000<0.05$) giving an implication that technological factors significantly determine youth participation in agropastoralism in Mandera County. Agropastoralists in rural areas do not enjoy adequate extension services. A report by World Bank (2017) indicated that that ICT had increased the willingness of youth in Mandera to engage in livestock keeping as they got information on how to manage diseases and breeding. Technological tools according to the report, aid youths and women to manage small and large -scale crop growing through selection and monitoring of production. According to Tang et al. (2020), technology is the solution of curbing losses, low production, high labor cost and improving quantity of agricultural products.

4.9.3 Regression Analysis between Technological Factors and Youth Participation in Agropastoralism

Results of regression analysis are presented in Table 4.17.

Table 4.17

Model Summary results of technological factors and Youth Participation

R	R Square	Adjusted R Square	Std. Error of the Estimate
.488a	0.238	0.235	0.54313

a Predictors: (Constant), technological factors

It can be seen from the results tabulated in Table 4.17 that the estimated model explains to the tune of 23.8 percent of the total variations in youth participation in agropastoralism in Mandera County as shown by the estimated value of R Square in the model (0.238). Thus, technological factors significantly determine youth participation in agropastoralism in Mandera County.

Table 4.18 shows the ANOVA results.

Table 4.18

ANOVA Results of Technological Factors and Youth Participation in Agropastoralism

	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.074	1	28.074	95.171	.000b
Residual	89.971	305	0.295		
Total	118.045	306			

a Dependent Variable: Youth Participation in agropastoralism

b Predictors: (Constant), technological factors

The analysis of variance results in Table 4.18 indicate that the estimated model is statistically significant as evidenced by the estimated P value of $0.000 < 0.05$. This can

also be illustrated by the estimated F value in the mode $F_{1,305}=95.171$ that is greater than the F critical value of 1.8473. Table 4.19 shows the regression results.

Table 4.19

Regression Coefficients of t values of Technological Factors and Youth Participation

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.033	0.129		15.787	0.000
Technological factors	0.365	0.037	0.488	9.756	0.000

a Dependent Variable: Youth Participation in agropastoralism

The coefficient of technological factors was positive ($\beta=.365$) and statistically significant ($P=0.000<0.05$). The null hypothesis, there is no effect of technological factors on youth participation in agropastoralism in Mandera County was rejected and the study concludes that technological factors significantly determines youth participation in agropastoralism in Mandera County.

Technology is an important component in enhancing modern agricultural production. Many young people living in rural areas lack access to agricultural education, knowledge, and cutting-edge technology. Where there are chances for innovation, affordability continues to be a barrier. Most county government has not rolled out platforms that enable the utilization of technology in agropastoralism. On the other hand, the majority of the youth find agropastoralism unattractive, non- professional, dirty and generally have negative perception towards agricultural activities due to inefficient, traditional farming techniques. This is despite the youth being considered as more knowledgeable with regards to best agropastoralism practices. Agropastoralism in the rural areas also does not

enjoy adequate extension services. Because of this, young people living in rural areas are unable to use mobile-based technologies that promote agropastoralism. In addition, Tang (2020) indicated that the willingness to apply technology in agropastoralism had greatly revolutionized modern agricultural activities that increased agropastoralism. Technology is the solution of curbing losses, low production, high labor cost and improving quantity of agricultural products. The use of technology in transmitting agricultural information according to the findings of Damba et al. (2019) has significantly influenced the growing of food crops in Northern region of Ghana. Technology has expanded and changed the crop cultivation and domestic animals breeding in East Africa (Aworka et al., 2022). On the contrary, Azumah et al. (2018) argues that technology is of no use in agropastoralism if farmers are unable to understand it or it is not transmitted in a timely manner.

4.10 Effects of Perceived Attitude of Youth on their Participation in Agropastoralism

The section presents both the descriptive and regression results on effects of perceived benefits by youth on their participation in agropastoralism in Mandera County.

4.10.1 Descriptive Statistics on perceived Youth Attitude to agropastoralism

Table 4.20 displays the results of descriptive statistics.

Table 4.20*Descriptive Statistics for perceived attitudes by youth on benefits of agropastoralism*

	SD	D	M	A	SA	M	SD
	f, %						
Youth perceive agro-pastoralism as profitable activities	21 6.8%	55 17.9%	57 18.6%	89 29%	85 27.7%	3.5	1.3
Agro-pastoralism generates income for youth	12 3.9%	57 18.6%	52 16.9%	94 30.6%	92 30%	3.6	1.2
Youth have negative perception on the profitability of agro-pastoralism	13 4.2%	67 21.8%	68 22.1%	81 26.4%	78 25.4%	3.5	1.2
Agro-pastoralism is perceived to be for old people	23 7.5%	45 14.7%	51 16.6%	97 31.6%	91 29.6%	3.6	1.3
Youth perceive agro-pastoralism as dirty work full of drudgery hence would not get involved in it	21 6.8%	44 14.3%	41 13.4%	100 32.6%	101 32.9%	3.7	1.3
Agro-pastoralism is left for uneducated people	16 5.2%	76 24.8%	65 21.2%	77 25.1%	73 23.8%	3.4	1.2
Youth perceive agro-pastoralism as their source of employment	15 4.9%	70 22.8%	75 24.4%	76 24.8%	71 23.1%	3.4	1.2
Agro-pastoralism is perceived as costly practice	6 2%	59 19.2%	53 17.3%	94 30.6%	95 30.9%	3.7	1.2
Agro-pastoralism elevates social status of youth	27 8.8%	67 21.8%	74 24.1%	72 23.5%	67 21.8%	3.3	1.3
Mean of means and average Standard Deviation						3.5	1.24
						2	

According to the results in Table 4.20, the majority at 174(56.7%) of respondents believed that youth perceived agro-pastoralism as profitable business. However, 76(24.8%) of the respondents recorded a disagreement while 57(18.6%) did not take sides. The mean and standard deviation were 3.5 and 1.3 in that order implying that on average, the responses were gravitating towards ‘agree’ on a 5 Point Likert Scale. The fact that only slightly more than half at 56.7% were convinced that the business was lucrative confirms that about half of

the youth in the region did not have much regard for agropastoralism as a means of generating income and improving livelihoods which leads them to shirking it. On whether agro-pastoralism generated income for youth, 186(60.6%) of the respondents were in agreement with the statement, 69(22.5%) recorded a disagreement whereas 52(16.9%) were neutral. The statement had a mean of 3.6 and a standard deviation of 1.2. With regards to the statement; 'youth have negative perception on the profitability of agropastoralism' 159(51.8%) of the responses recorded an agreement, 80(26.1%) disagreed whereas 68(22.1%) were neutral. The question attracted a mean of 3.5 and respective standard deviation of 1.2. Furthermore, 188(61.2%) agreed that agropastoralism was perceived to be for old people while 68(22.1%) were in disagreement and 51(16.6%) took a neutral stand. The mean and respective standard deviations of the statement were 3.6 and 1.3. The fact that most respondents believed that agropastoralism was for old people confirms the reason of youth leaving agriculture as uninteresting, uneconomic and a drudgery.

Regarding the statement; 'youth perceive agropastoralism as dirty work full of drudgery hence would not get involved in it', 201(65.5%) of the respondents contacted recorded an agreement, 66(21.2%) were in disagreement while 41(13.4%) were neutral. The question attracted a mean of 3.7 and respective standard deviation of 1.3, an indication of an 'agree' on a 5-point Likert scale. In addition, 150(48.9%) agreed that 'agropastoralism was for uneducated people' while 92(30%) were in disagreement with 65(21.2%) being undecided. The statement's mean and related standard deviations were 3.4 and 1.2, respectively, showing that the reactions were moderate.

The majority 147(47.9%) of the respondents agreed that youth perceived agropastoralism as their source of employment whereas 85(27.7%) were in disagreement and 75(24.4%)

recorded a moderate stand.

The data showed that the mean was 3.4 and the standard deviation was 1.2. Additionally, 189 (61.6%) of the study's participants concurred that agropastoralism was seen as an expensive venture in terms of investments, 53 (17.3%) were neutral, while 65 (21.2%) disagreed. The statement's reported mean and standard deviation of 3.7 and 1.2, respectively. The claim that 'agropastoralism raises young people's social status' gave the results of 74 (24.1%) neutral responses, the 139 (45.3%) in agreement and 94 (30.6%) disagree with a mean of 3.3 and a standard deviation of 1.3.

Youth participation in agricultural production is influenced by how they feel about expected gains. Due to perceived drudgery, low pay, and apparent lack of market for the final agricultural products, most young people find agriculture unattractive. Due to the low visibility of triumphs among young people in husbandry as a source of revenue, the youth have furthered the bad impression of the industry. The majority of youth perceive agricultural activities to generate small income due to the high cost of production that makes it very difficult and an expensive venture. Youth have poor perception of agropastoralism due to low status attached to low income with longer time of investment. This kind of farming has been perceived as dirty work and has been associated with the uneducated. The findings concur with a study by Mohamed et al. (2019) which revealed that the majority of youths perceived agricultural activities to generate small income due to the high cost of production that made it very difficult and an expensive venture. Likewise, Gute and Nkosi (2021) in South Africa, indicated that teenagers perceived agriculture as of low status activity carried out by illiterate people who cannot acquire office jobs. This is not far from the findings of Bariu (2020) which found that youth had

poor perception of agriculture due to low status attached to low income with longer time of investment. When youth observe the profits in agricultural activities are higher, they may be interested to get involved since they have the hope and expectations of making profit (Maritim, 2020).

4.10.2 Correlation Analysis between Youth Attitudes on perceived benefits and Youth Participation in agropastoralism

A correlation analysis was conducted youth attitudes to perceived gains from agropastoralism and their participation and the findings are presented in Table 4.21.

Table 4.21

Correlation Results of Youth Attitude on benefits of agropastoralism and Youth Participation

		Youth Participation	Youth Attitude
Youth Participation	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	307	
Youth Attitude	Pearson Correlation	.529**	1
	Sig. (2-tailed)	0.000	
	N	307	307

The correlation between youth attitudes towards perceived benefits of agropastoralism and youth participation was positive and statistically significant ($r=0.529$, $P=0.000<0.05$) implying that youth attitudes towards perceived benefits of agropastoralism significantly determined their participation in agropastoralism in Mandera County. When youth notice the benefits of succeeding in agricultural activities are high, they are tempted to engage in in the business but the reverse is also true if they perceive that they will not make good

profit (Maritim, 2020).

4.10.3 Regression Analysis between Youth Attitude on perceived benefits and Youth Participation

A regression analysis was done to find out the linear relationship between youth attitude on perceived benefits of agropastoralism and their participation in it. Results are presented in Table 4.22.

Table 4.22

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.529a	0.28	0.278	0.5278

a Predictors: (Constant), Youth Attitude

Table 4.22 shows that that all other factors held constant, youth participation in agropastoralism was explained to the extent of 27.8 percent by their perception of expected gains from it (estimated R Square in the model being 0.278). Therefore, youth involvement in agropastoralism in Mandera County was highly influenced by their attitude abouts benefits from it. Analysis of variance results on the same are presented in Table 4.23.

Table 4.23

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	33.078	1	33.078	118.74	.000b
Residual	84.966	305	0.279		
Total	118.045	306			

a Dependent Variable: Youth Participation

b Predictors: (Constant), Youth Attitude

Results in Table 4.23 indicate that the estimated model was statistically significant as evidenced by the P value of 0.000. This can also be illustrated by the estimated F value in the mode $F_{1,305}=91.056$ that is greater than the F critical value of 1.8473.

Regression analysis on the perceived benefits of youths in agropastoralism was carried out as per results in Table 4.24.

Table 4.24

Regression Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	1.441	0.169		8.522	0.000
Youth Attitude	0.551	0.051	0.529	10.897	0.000

a Dependent Variable: Youth Participation

The coefficient of youth attitude towards perceived benefits of agropastoralism in the model was positive ($\beta=.551$) and statistically significant ($P=0.000<0.05$). The null hypothesis, ‘youth attitude towards perceived benefits of agro pastoralism has no effect on their participation in it in Mandera County was rejected and the study concluded that youth attitudes towards perceived benefits of agropastoralism was a significant determinant of their participation in the business in Mandera County. The youth had created a negative perception around engaging in agricultural activities as a means of livelihood because of the low visibility of successes among the initiatives in agriculture compared to perceived benefits of employment in towns and cities. Youth considered agropastoralism as a sector dominated by the elderly whose gains were limited due to

their reliance on traditional production techniques as well as rigidity in adopting modern technology. Agriculture has been used in most cases as a form of punishment to the children when they do wrong in school making them perceive it as a negative venture. Thus, all these factors combined made youth to shy away from agricultural activities.

The findings are also in line with those of who indicated that the decision and behavioral intention to be engaged into any economic activity was influenced by perceived benefits. Carolan (2016) further revealed that the majority of youth perceived agricultural activities to generate small income due to the high cost of production that made it very difficult and an expensive venture. However, Baariu (2020) found that youth had poor perception due to low status attached to low income with longer time of investment.

4.11 Effects of Cultural Practices on Youth Participation in Agropastoralism

The section presents both the descriptive and regression results on effects of cultural practices on youth participation in agropastoralism in Mandera County.

4.11.1 Descriptive Statistics on Cultural Practices

Table 4.25 displays the findings of effects of cultural norms on youth participation in agropastoralism.

Table 4.25*Descriptive Statistics for Cultural Practices*

	SD	D	M	A	SA	M	SD
	f ,%	f ,%	f ,%	f ,%	f ,%		
Women are not allowed to practice agro-pastoralism	34 11.1%	74 24.1%	69 22.5%	66 21.5%	64 20.8%	3. 2	1.3
Youth are not allowed to own any agro-pastoralism income generating activity	37 12.1%	83 27%	74 24.1%	60 19.5%	53 17.3%	3. 0	1.3
Youth are hindered from acquiring social and cultural capital to enhance their economic capabilities.	27 8.8%	74 24.1%	71 23.1%	67 21.8%	68 22.1%	3. 2	1.3
Agro-pastoralism is a preserve for the elders	26 8.5%	43 14%	41 13.4%	102 33.2%	95 30.9%	3. 6	1.3
Women are viewed as housewife and seen as passive regarding agro pastoralism activities in the community.	18 5.9%	42 13.7%	44 14.3%	103 33.6%	100 32.6%	3. 7	1.2
Pastoral cultures forbid young people from owning agricultural land without their father's permission	18 5.9%	68 22.1%	55 17.9%	84 27.4%	82 26.7%	3. 5	1.3
Men have the responsibility of protecting and providing for the women	2 0.7%	36 11.7%	43 14%	115 37.5%	111 36.2%	4. 0	1.0
Agro-pastoralism is perceived as costly practice	13 4.2%	38 12.4%	40 13%	107 34.9%	108 35.2%	3. 9	1.2
Agro-pastoralism elevates social status of youth	16 5.2%	76 24.8%	82 26.7%	68 22.1%	65 21.2%	3. 3	1.2
Mean of means and average Standard Deviation						3. 50	1.23

On the statement, ‘women are not allowed to practice agropastoralism’ 108(35.2%) of those contacted disagreed with the statement, 69(22.5%) indicated moderate responses whereas 130(42.3%) were in agreement with a mean of 3.2 and a standard deviation of 1.3 indicating that the responses were moderate (undecided or neutral in the Likert scale). On the statement ‘youth are not allowed to own any agro-pastoralism income generating activity’ 120(39.1%) disagreed, 74(24.1%) were neutral whereas 113(36.8%) were in agreement with a mean of 3.0 and a standard deviation of 1.3. This showed a divided response since those who agreed with the statement were almost equal to those who disagreed and a sizeable number were undecided.

The statement, youth are hindered from acquiring social and cultural capital to enhance their economic capabilities received the following responses; a total of 101(32.9%) of the respondents recorded a disagreement, 135(44%) agreed whereas 71(23.1%) were neutral with a mean of 3.2 and standard deviation of 1.3, an indication that the respondents were moderate or “undecided” Furthermore, 197(64.2%) agreed that agro pastoralism was a preserve for the elders while 69(22.5%) were in disagreement and 41(13.4%) took a neutral stand. The mean and respective standard deviation of the statement was 3.6 and 1.3 implying an inclination to ‘agree’ on a Likert scale. The fact that the majority at 64.2% agreed meant that the practice was a preserve of the elderly confirmed that most youth avoid agropastoralism or consider it a preserve of the old people.

The statement, ‘women are viewed as housewives and seen as passive regarding agropastoralism activities in the community’ returned a mean of 3.7 and a standard deviation of 1.2 an indication that the responses were in ‘agreement’ on average. In addition, the responses regarding the statement ‘pastoral cultures forbid young people

from owning agricultural land without their father's permission' returned 166(54.1%) as agreed, 86(28%) disagreed and 55(17.9%) did not take sides with a mean of 3.5 and standard deviation of 1.3. The majority 226(73.6%) of the respondents agreed that 'men have the responsibility of protecting and providing for the women'. In addition, 38(12.4%) of the respondents were in disagreement while 43(14%) were undecided. The mean and standard deviation recorded by the statement were 4.0 and 1.0 respectively implying that on average, the responses were in agreement with a huge majority. On whether agropastoralism was perceived as a costly practice, 51(16.7%) of the respondents disagreed, 215(70.3%) agreed whereas 40(13%) did not take any position. The statement recorded a mean of 3.9 and corresponding standard deviation of 1.2 implying an agreement. This goes to confirm that the venture requires substantial capital to invest supported by over 70% of the respondents. In addition, 92(30%) of the participants in the study disagreed that agropastoralism elevates social status of youth while 133(43.3%) agreed and 82(26.7%) were undecided with a mean and standard deviation recorded by the statement were 3.3 and 1.2.

Culture contributes largely in determining the level of youth participation in agropastoralism. Some cultures perceive men and women differently when it comes to accessing factors of production as well as the freedom of movements and association within and outside the community. The outcomes are in arrangement with the findings of Naghizadeh (2022) who pointed out that in pastoral communities, pastoralism is a major part of life and pastoralists have more cultural values rooted in their traditions. Pastoral cultures forbid young people from owning agricultural land without their father's permission (Abebe & Flintan, 2021). In Kenya, according to Ombere et al. (2021), the

major role of a young women in society is typically seen to be that of a decent mother and homemaker. Youthful women therefore encounter cultural obstacles in engaging in productive business ventures including agro pastoralism. In addition, stereotypes of women as helpless, submissive, and irrational make them disadvantaged in their involvement in agropastoralism. Because of their responsibilities to their families and children, men believe that women feel more secure when they stay at home and refrain from engaging in agropastoralism activities. The same was argued by Abalkhail (2017) when he posited that Islam, in his understanding, did not give equal possibilities for men and women in the matters of pastoralism. Traditional beliefs are one of the cultural elements that may deter young people from becoming interested in pastoral agriculture.

4.11.2 Correlation Analysis between Cultural Factors and Youth Participation in agropastoralism

Table 4.26 shows the results of correlation analysis.

Table 4.26

Correlation Results of Cultural Practices and Youth Participation

		Youth Participation	Cultural Practices
Youth Participation	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	307	
Cultural Practices	Pearson Correlation	.571**	1
	Sig. (2-tailed)	0.000	
	N	307	307

The correlation between cultural practices and youth participation was positive and statistically significant ($r=0.571$, $P=0.000<0.05$) implying that cultural practices significantly influenced youth participation in agropastoralism in Mandera County. The

results agree with the findings of Wallace (2018) who indicated that in Turkey, youth were not permitted to own any income-generating activities without the permission of community elders.

4.11.3 Regression Analysis between Cultural Practices and Youth Participation

A regression analysis was carried out to find the linear relationship between cultural practices and youth participation. The findings are presented in Table 4.27.

Table 4.27

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.571a	0.326	0.324	0.51065

a Predictors: (Constant), Cultural Practices

The estimated model explains that up to 32.4 percent of the total variations in youth participation in agropastoralism in Mandera County was attributed to cultural influences, all other factors constant according to the estimated R-Squared value.

Results of the analysis of variance are presented in Table 4.28.

Table 4.28

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	38.511	1	38.511	147.683	.000b
Residual	79.534	305	0.261		
Total	118.045	306			

a Dependent Variable: Youth Participation

b Predictors: (Constant), Cultural Practices

Table 4.28 indicates that the estimated model was statistically significant as evidenced by the estimated P value of $0.000 < 0.05$. This can also be illustrated by the estimated F value in the mode $F_{1,305} = 147.683$ that is greater than the F critical value of 1.8473.

Results of regression analysis are presented in Table 4.29.

Table 4.29

Regression Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
	B		Beta		
(Constant)	1.329	0.161		8.253	0
Cultural Practices	0.603	0.05		12.15	0.00
				0.571	2

a Dependent Variable: Youth Participation

The regression coefficient of cultural factors in the model was positive ($\beta=0.603$) and statistically significant ($P=0.000 < 0.05$). The null hypothesis, ‘culture has no effect on youth participation in agropastoralism in Mandera County’ was rejected and the study concluded that cultural practices significantly determined youth participation in agropastoralism in Mandera County. Some cultures perceive men and women differently when it comes to accessing factors of production as well as the freedom of movements and association within and outside the community. Land is a principal factor of production but the rights of ownership and use are still vested in the elders of the community in some cultures. As a result, this leads to unfavorable rules governing land use because young people may not have access to land which they would even use as collateral for credit from banks, which may prevent them from taking advantage of their abilities and boosting productivity. Young rural women in developing nations confront

additional barriers to market access, in part, because their freedom of movement is occasionally constrained by cultural conventions. The degree of juvenile involvement in agro pastoralism is impacted by differences in accessing, regulating, and utilizing resources for production as well as differences in roles and gender norms that prevent equitable engagement in agricultural operations.

In some cases, culture perceives that the primary function of women in society is that of a housewife and mother. Thus, female youth face cultural barriers and are also frequently stereotyped as helpless, passive, and irrational and therefore not able to engage in agropastoralism. Men perceive women to be more secure when they stay at home and avoid participating in agropastoralism activities because of their commitments to their children and families. These findings are in agreement with those of Naghizadeh (2022) who pointed out that in pastoral communities, pastoralism was a major part of life and cultural values were rooted in it. Pastoral cultures forbid young people from owning agricultural land without their father's permission (Abebe & Flintan, 2021). In Kenya, according to Ombere et al. (2021), it is widely assumed that a young woman's primary function in society is to be a good housewife and mother. The same as Abalkhail (2017) when he argues that, Islam, in his thoughts, does not give equal possibilities for menfolk and females in the matters of pastoralism. Traditional beliefs are one of the cultural elements that may deter young people from becoming interested in pastoral agriculture.

4.12 Youth Participation in Agropastoralism (dependent variable)

In this study, youth involvement in agropastoralism served as the dependent variable. Table 4.30 displays the analytical results.

Table 4.30***Descriptive Statistics for Youth Participation in agropastoralism in Mandera County***

	SD	D	M	A	SA	M	SD
	f, %	f, %	f, %	f, %	f, %		
Ago-pastoralism generates income for youths hence it is worth practicing	35 11.4%	44 14.3%	45 14.7%	96 31.3%	87 28.3%	3.5	1.3
My participation in Agro-pastoralism is beneficial and has greatly improved my livelihoods and that of my family.	22 7.2%	64 20.8%	74 24.1%	76 24.8%	71 23.1%	3.4	1.2
Perceived profit in Agro-pastoralism positively influences youth to participate in it	31 10.1%	53 17.3%	55 17.9%	89 29%	79 25.7%	3.4	1.3
Only a few youths have been able to participate in agro-pastoralism activities in my sub-county due to negative perception	11 3.6%	37 12.1%	46 15%	108 35.2%	105 34.2%	3.8	1.1
Youth who participate in agro-pastoralism in Mandera county have been few due to the challenges experienced in it hence others perceive it as a bother.	16 5.2%	36 11.7%	43 14%	109 35.5%	103 33.6%	3.8	1.2
Many youths operate agro-pastoralism in this region since it is a good and profitable way of Life	19 6.2%	79 25.7%	89 29%	63 20.5%	57 18.6%	3.2	1.2
I am satisfied by my participation in agro-pastoralism activities since I get gainful employment, income and make profits hence wealth from the venture.	39 12.7%	58 18.9%	59 19.2%	79 25.7%	72 23.5%	3.3	1.3
I do not have to leave Mandera County to seek employment to towns and cities since I am fully engaged and handsomely compensated in agro pastoralism.	150 48.9%	44 14.3%	49 16%	37 12.1%	27 8.8%	2.2	1.4
Average						3.32	1.25

From Table 4.30, the statement, ‘agropastoralism generates income for youths hence it is worth practicing’ returned 183(59.6%) of the respondents in agreement, 79(25.7%)

disagreed while 45(14.7%) did not take sides with a mean of 3.5 and a standard deviation of 1.3 implying that the respondents 'agreed' generally with the statement. Furthermore, with regards to the statement 'my participation in agropastoralism is beneficial and has greatly improved my livelihoods and that of my family', 151(59.2.9%) of the respondents were in agreement, 59(12.2%) were undecided while 97(31.6%) disagreed with a mean and standard deviation of 3.4 and 1.2 in that order. The other indicators of the dependent variable on the statements and responses are as shown in Table 4.30.

4.13 Diagnostic Tests

Regression and correlation analysis were carried out after preliminary confirmatory tests for normality and autocorrelation.

4.13.1 Testing for Autocorrelation

In conducting the test for autocorrelation, the study adopted Durbin Watson test. The Durbin-Watson statistic is used to determine the error's first order autocorrelation with its immediately preceding value. The test aids in determining whether or not the errors in various observations are correlated. As a rule of thumb, a Durbin Watson value <2 indicates the presence of positive autocorrelation, >2 the presence of negative autocorrelation and a Durbin Watson value of $=2$ indicates that there is no autocorrelation in the data set. The autocorrelation test results are presented in Table 4.31.

Table 4.31

Autocorrelation Test Results

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.776a	0.602	0.595	0.39508	2.012

Source: Field Data (2023)

From the results in Table 4.31, the estimated Durbin Watson value for the study was 2.012, which is approximately 2 implying that the data did not suffer from severe autocorrelation. Thus, the study concluded that the data set lacked autocorrelation.

4.14 Multiple Correlation Results

The correlation results of the study are presented in Table 4.32.

Table 4.32

Correlation Results

		Youth Participation	Insec urity	Credit Accessibi lity	Technolog ical Factors	Youth Attitu de	Cultura l Practice s
Youth Participation	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	307					
Insecurity	Pearson Correlation	.496**					
	Sig. (2-tailed)	0.000					
	N	307	307				
Credit Accessibility	Pearson Correlation	.541**	.269*				
	Sig. (2-tailed)	0.000	0.000				
	N	307	307	307			
Technologi cal Factors	Pearson Correlation	.488**	.362*	.283**			
	Sig. (2-tailed)	0.000	0.000	0.000			
	N	307	307	307	307		
Youth Attitude	Pearson Correlation	.529**	.330*	.334**	.273**	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		
	N	307	307	307	307	307	
Cultural Practices	Pearson Correlation	.571**	.392*	.301**	.239**	.511**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	307	307	307	307	307	307

From the results presented in Table 4.32, the correlation between the variable insecurity and youth participation was positive and statistically significant ($r=0.496$, $p=0.000<0.05$) implying that insecurity was a significant determinant of youth participation in agropastoralism in Mandera County. The results are in tandem with the findings of Wafula et al. (2022) who argued that, cases of insecurity such as the fight for resources which include grazing pastures, and water is a major factor that affects investment in agro pastoralism. In addition, cases of livestock theft also discourage the practice of pastoralism.

The association amid credit convenience and youth contribution in agropastoralism was positive and statistically significant ($r=0.541$, $p=0.000$) giving an implication that credit accessibility significantly determined youth participation in agropastoralism in Mandera County. The results were consistent with the findings of Maritim (2020) who pointed out that access to financial assistance in form of loans had remained a nightmare to youth who wanted to engage in agriculture. Youth were willing to engage in agropastoralism activities in rural areas but access to credit from banks and SACCOs hindered them.

The correlation between the technological factors and youth participation was positive and statistically significant ($r=0.488$, $p=0.000$) giving an implication that technological factors significantly determined youth participation in agropastoralism in Mandera County. A report by World Bank (2017) indicated that ICT had increased the willingness of youth in Mandera to engage in livestock keeping as they got information on how to manage diseases and breeding. Technological tools according to the report, aided youths and women to manage small and large -scale farming of food crops through selection and monitoring of production. However, technology was still not accessible to most youth in

rural areas due to high cost.

Furthermore, the correlation between youth attitude towards perceived benefits of agro pastoralism and youth participation was positive and statistically significant ($r=0.529$, $p=0.000<0.05$) implying that youth attitude significantly determined youth participation in agro pastoralism in Mandera County. When youth perceive the benefits of engaging in agricultural activities, they may be interested to get involved since they have hope and expectations of making profit (Maritim, 2020).

Finally, the correlation between cultural practices and youth participation was positive and statistically significant ($r=0.571$, $p=0.000<0.05$) implying that cultural practices significantly determined youth participation in agropastoralism in Mandera County. The results concur with the findings of Wallace (2018) who indicated that in Turkey, youth were not permitted to own any income-generating activities without the permission of community elders.

4.15 Regression Model

Upon ascertaining the suitability of the data to estimate the model, the model was estimated and results shown in Table 4. 33.

Table 4.33

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.776a	0.602	0.595	0.39508

Predictors: (Constant), Cultural Practices, Technological Factors, Credit Accessibility, Insecurity, Youth Attitude

It can be observed from the results in Table 4.33 that the estimated model explains to a tune of 59.2 percent of the total variations in youth participation in agropastoralism coming from the independent variables tested for Mandera County according to R² value of 0.595.

Thus, the variables identified in the model significantly determined youth participation in agropastoralism in Mandera County. ANOVA results are shown in Table 4.34.

Table 4.34

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	71.063	5	14.213	91.056	.000b
Residual	46.982	301	0.156		
Total	118.045	306			

Dependent Variable: Youth Participation

Predictors: (Constant), Cultural Practices, Technological Factors, Credit Accessibility, Insecurity, Youth Attitude

The analysis of variance results in Table 4.34 indicated that the estimated model was statistically significant as evidenced by the estimated P value of 0.000<0.05. This can also be further illustrated by the estimated F value in the mode $F_{5,301}=91.056$ that is greater than the F critical value of 1.8473 from the F tables. Results of model summary for the determinants of the independent variables are shown in Table 4.35.

Table 4.35***Model Summary***

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.255	0.169		1.511	0.132
Insecurity	0.155	0.038	0.17	4.051	0.000
Credit Accessibility	0.273	0.038	0.29	7.24	0.000
Technological Factors	0.174	0.03	0.232	5.759	0.000
Youth Attitude	0.180	0.046	0.173	3.938	0.000
Cultural Practices	0.289	0.047	0.274	6.173	0.000

a Dependent Variable: Youth Participation

From the results in the estimated model, the coefficient for effects of insecurity was positive ($\beta=.155$) and statistically significant ($p=0.000<0.05$) indicating that the null hypothesis that ‘there was no effect of insecurity on youth participation in agropastoralism in Mandera County was rejected and the study concluded that insecurity significantly affected youth participation in agropastoralism in Mandera County. The volatile borders with the neighboring countries Ethiopia and Somalia are sources of insecurity and also routes through which youth may be passing to be radicalized. As the communities living in Madera County are pastoralist in nature, their constant movement from place to place in pursuit of water and pasture for their livestock is in most cases a source of the regular conflicts reported in these communities. These results are consistent with the findings of Bevan (2017) who indicated that insecurity was a contributing factor to lack of youth participation in agropastoralism as it caused worries, fear and alienation among the youth thus resulting in negative implications to the economic activities in a community. Ibrahim (2020) further posits that cases of insecurity results in theft of

livestock, fight for grazing land and water streams for crop farming coupled with the nomadic nature in these areas, hence discourages youth from investing in agropastoralism.

The regression coefficient of credit accessibility in the model was positive ($\beta=.273$) and statistically significant ($p=0.000<0.05$) and the null hypothesis that ‘there was no effect of access to credit on youth participation in agropastoralism in Mandera County’ was rejected and the study concluded that credit accessibility was a significant determinant of youth participation in agropastoralism in Mandera County. The results of the other determinants of the dependent variable are as discussed for each of the independent variables separately, in this study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section presents the key findings of the study, the conclusions based on the results and makes recommendations based on the conclusions. The study also recommends areas where further research is necessary.

5.2 Summary of Major Findings

5.2.1 Insecurity and Youth Participation in Agropastoralism in Mandera County

The study's first objective was to ascertain how youth involvement in agropastoralism in Kenya's Mandera County was impacted by insecurity. After the study's data were evaluated, the association outcomes presented a strong and positive association between youth involvement in agropastoralism with insecurity. A positive and linear association between insecurity and youth involvement in agropastoralism was also indicated by the regression results. The level of youth involvement in agropastoralism was impacted by the unstable boundaries with the neighboring nations of Ethiopia and Somalia, as well as the high rate of youth joblessness and high school dropouts. These factors had also led to some youth joining illegal organizations, becoming radicalized, having easy possession of small arms, and engaging in drug use. Most of their time that could be productively spent in active engagement in agropastoralism was wasted in criminal acts. At the end, their engagement in agropastoralism became minimal affecting their overall productivity. Pastoralism in the ASALs is the central basis of investments, living and service opportunities. As the communities living in Madera County are pastoralist in nature, their

constant movement from place to place in search of water and grasslands for their livestock is in most cases, a source of regular conflicts reported in these communities. The intercommunity conflicts, which mostly results in theft of livestock as well as destruction of property and losses of life impacts on the economic wellbeing and livelihood of these communities, thus discouraging investments in the sector. All these factors among others, significantly contributed to the limited participation by the youth in agropastoralism.

5.2.2 Credit Accessibility and Youth Participation in Agropastoralism

Objective two of the education was to regulate how credit accessibility affected youth participation in agropastoralism in Mandera County, Kenya. After the data was reviewed, a optimistic and significant association between loan availability and youth involvement in agropastoralism in Mandera County was found. A positive and linear association between financial accessibility and youth involvement in agropastoralism was also indicated by the regression results. Agriculture is considered risky by financial institutions because of its high sensitivity to external factors such as catastrophic weather events, outbreaks of diseases and pests, and seasonality. As a result, lenders are reluctant to advertise agricultural loans. Financial service providers see youth as risky borrowers in part due to the absence of a credit history, poor saving habits, lack of a collateral, and insufficient financial capacity. As a result, bank products or solutions do not effectively target youth and are difficult to access. Further, poor access to banking institutions in some areas, low levels of awareness on availability of credit as well as the reluctance to exploit the available sources of credit with most lending institutions not sharia compliant, high interest rates of the available credit and low levels of literacy all conspire to deprive

youth of access to credit.

In addition, high levels of unemployment, no links to the available sources of business funding as well as lack of comprehensive support for special groups all affect access to credit among the youth.

5.2.3 Technological Factors and Youth Participation in Agropastoralism

The study's third goal was to determine how technological factors impacted young people's involvement in agropastoralism in Mandera County, Kenya. The correlation analysis revealed a strong and positive link between technological factors and youth involvement in agropastoralism in Mandera County. A positive and linear association between technological factors and youth involvement in agropastoralism was also indicated by the regression results. Technology has a significant role in improving contemporary agricultural output. Many young people living in remote regions lack access to agricultural education, knowledge, and cutting-edge technology. Even when chances for innovation exist, access to technology or investment lacks capital. Despite the youth being considered as innovative, knowledgeable and technology savvy, the same has not been explicitly exhibited in agropastoralism in Mandera County. Agropastoralism in the rural areas also does not enjoy adequate government extension services. Rural places with weak network coverage and limited Internet penetration have high access costs which are prohibitive. Because of this, young people living in rural areas are unable to use mobile-based technologies that promote smart agriculture.

5.2.4 Youth Attitude and Youth Participation in Agropastoralism

The study's fourth objective was to determine how young people's attitudes affected their

involvement in agro-pastoralism in Kenya's Mandera County. The correlation analysis revealed a strong and positive relationship amongst young people's attitudes towards perceived gains and their involvement in agropastoralism in Mandera County.

Regression analysis also revealed a favorable and linear association between young people's perception of possible gains or profits and their involvement in agropastoralism. Youth participation in agropastoralism is influenced by how they feel about returns on investment including their time as compared to other more lucrative ventures like running kiosks selling mobile phones and other gadgets. Due to the drudgery, low pay, and apparent lack of market for the final agricultural products, most young people find agriculture unattractive. Due to the low visibility of agriculture as a business and sole livelihood venture or a source of revenue, the youth have inculcated in themselves the wrong impression of the industry.

5.2.5 Cultural Factors and Youth Participation in Agropastoralism

The sixth objective was to determine how cultural influences impacted young people's involvement in agro-pastoralism in Mandera County, Kenya. Correlation analysis revealed a strong and positive link between cultural norms and youth involvement in agropastoralism in Mandera County. A positive and linear association between cultural factors and youth involvement in agropastoralism was also indicated by the regression results. When it comes to having access to the means of production, as well as having the ability to move around and form associations both inside and outside of the community, men and women may be seen differently in some societies. Land is a principal factor of production but the rights of ownership and use are still vested in the elders of the community in some cultures like those of the inhabitants of Mandera County. Land is still

communally owned. As a result, it leads to unfavorable rules governing land use because young people with understanding of crop production and land use may not have access to the land. Young rural women in nations that are developing confront additional barriers to market access, in part because their freedom of mobility is occasionally constrained by cultural conventions.

5.3 Conclusions

5.3.1 Insecurity and Youth Participation in Agropastoralism in Mandera County

The study concluded that insecurity had a positive and significant relationship with youth participation in agropastoralism in Mandera County. In cases where insecurity was rampant, youth were deemed to experience losses due to theft in cases of livestock, destruction of crops as well as loss of lives in extreme cases. In a secure environment, the adoption of agropastoralism is expected to increase because of the perceived benefits of investing in the agribusiness. Therefore, the study concluded that insecurity was a significant determinant of failure of the youth participation in agropastoralism in Mandera County.

5.3.2 Credit Accessibility and Youth Participation in Agropastoralism

Accessibility of credit by the youth from whichever source, which may include banks, SACCOs, friends or group banking had a positive and significant relationship with the youth participation in agropastoralism in Mandera County. The driving force of any kind of investment is financial capability. Credit spurs growth and development of an individual as well as a country. A credit facility reduces the level of dependence and increases the productivity of the members of the society. Thus, lack of credit accessibility

significantly explains the low level of youth participation in agropastoralism in Mandera County.

5.3.3 Technological Factors and Youth Participation in Agropastoralism

The study concluded that technological factors had a positive connection with the youth contribution in agropastoralism in Mandera County. Through technology, the youth were able to get timely information on how to manage diseases and breeding. However, technology was of no use in agropastoralism if farmers were unable to understand or afford it.

5.3.4 Youth Attitude and Youth Participation in Agropastoralism

The study made the conclusion that the attitude of the youth towards the perceived benefits of agropastoralism had a positive and significant relationship with youth participation in agropastoralism in Mandera County. The majority of youths perceived agricultural activities to generate small income due to the high cost of production that made it very difficult and an expensive venture. Youth had poor perception of agropastoralism due to low status attached to low incomes with longer time of investment. This kind of farming has been perceived as a dirty work, full of drudgery and not paying and has been associated with the uneducated in the community.

5.3.5 Cultural Factors and Youth Participation in Agropastoralism

The study concluded that cultural factors had a positive and significant relationship with the youth participation in agropastoralism in Mandera County. Pastoral cultures forbid young people from owning agricultural land without the blessings of the elders in the community. Other cultural barriers especially by female youth in some communities in

pastoral areas include some stereotypes as helpless, passive, and irrational and therefore not able to engage in agropastoralism.

5.4 Recommendations

The study endorses that the community, the county government and the national government sit and dialogue on how to improve on security in Mandera County. The community should consider privatization of land to improve on its productivity, reduce conflict and spur development. A secure environment is an incentive and facilitates economic development through agricultural and livestock production.

The study further recommends that financial institutions solve young people's problems on financial constraints by easing process and allowing different types of collateral when giving credit facilities geared towards agropastoralism. Easy access to credit is an incentive towards the adoption of agricultural and livestock farming.

The study also recommends that the administration should develop applications (mobile phone apps) that are centered on agricultural activities. These apps should be user friendly to those with education and those without. These apps should be equipped with relevant information including on disease and pest control as well as best practices to improve productivity. The app should also give farmers information on the expected weather conditions and the best times to carry out some critical activities.

The study further recommended that both the county and the national government seek for extensive market for the agricultural products for young farmers. This would improve their attitude towards engagement in agropastoralism because of the perceived ready market and high incomes. This in turn would reduce level of unemployment within

Mandera County.

Finally, the study recommended that the youth be given ready access to the factors of production including land. In addition, women should be treated equally with men and given the same support that the men enjoy. Women should be allowed to carry out farming of their choice and own the products therein.

5.4.2 Implications on Policy and Practice

The study was significant to both policy and practice. To policy, the study was significant in that it informed the government on improving on agropastoralism. The results of the study were also significant to the County Government of Mandera on the need to provide incentives that increases the participation of the youth in agropastoralism.

5.5 Areas of Further Research

Additional research needs to be conducted on the factors affecting crop production in Arid and Semi-Arid Lands (ASALs) in other counties.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Dear Respondent,

RE: ACADEMIC RESEARCH PROJECT

I am a graduate student at Kenya Methodist University pursuing a master's degree. As part of the requirements for the degree, I desire to undertake research on "Factors affecting youth participation in agropastoralism in Mandera County." A questionnaire has been developed and will be used to collect pertinent data in order to answer the study's research objectives. I am writing to ask for your permission to gather certain data from you.

Please keep in mind that the study will be done as academic research and that all information supplied will be treated with absolute confidentiality. Strict ethical norms will be followed to maintain confidentiality, and neither the study's conclusions nor its reports will contain any reference to specific individuals.

I will be really grateful for your acceptance.

Yours Sincerely

Gababa Isaack

Ibrahim Student

APPENDIX 1I: QUESTIONNAIRE

NB: Instructions are given for each different set of questions. Please read them carefully as they vary from one section to another. Some questions ask you to tick or circle whichever applies or the appropriate answer while others ask you to rate how best you agree or disagree, the extent, how frequently or how often using Likert scale.

SECTION ONE: GENERAL INFORMATION

What is your gender? male female (*please tick whichever applies*)

Age in years.

What is your marital status?(*Please tick whichever applies*)

1. Single
2. Married for the first time
3. Remarried
4. Separated
5. Divorced
6. Widowed

What is your highest level of education attained/completed? (*please tick whichever applies*)

- i. Primary level
- ii. Secondary
- iii. Completed secondary

- iv. Additional trainings/courses
- v. Completed college
- vi. Completed undergraduate level
- vii. Completed post-graduate level
- viii. None

Which sub-county do you come from? *(Tick inside the box appropriately)*

Mandera North

Mandera South

Mandera East

Mandera West

Lafey

Banassa

Are you currently practicing livestock keeping or crop production? *(please tick whichever applies)*

Yes No

If no, what is the reason for not participating in agro-pastoralism?

.....

.....

.....

SECTION THREE: EFFECT OF INSECURITY ON YOUTH PARTICIPATION IN AGRO-PASTORALISM IN MANDERA COUNTY

Do you feel secure practicing agropastoralism in Mandera county? *(Tick appropriately)*

Yes no

If you have indicated no in question (1) above, give main insecurity factors affecting you while practicing agro-pastoralism

.....
.....
.....
.....

In what ways has insecurity impacted on youth participation in agro-pastoralism?

.....
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.....
.

Please indicate the extent to which you agree with the following points on a scale of 1-5; Where (1=Strongly Disagree SD2= Disagree (d), 3=Moderate (M), 4= Agree (A) and 5=Strongly agree (SA)

STATEMENT	SD	D	M	A	SA
Community conflicts lead youth to quit agro-pastoralism in Mandera county.					
When there is insecurity, it is difficult for youth to participate in agro-pastoralism.					
Livestock rustling discourages youth from pastoralism in Mandera county.					
Insecurity, prevent youth from agro-pastoralism in that bandits destroy crops and steal livestock					
Insecurity causes displacement hence youth cannot engage in agro-pastoralism which needs to be in one space.					
The national government and the County Government have made efforts at improving security which has made agro-pastoralism possible in the County					
Conflicts in this area have a negative impact on youth participation in agro-pastoralism.					

**EFFECTS OF CREDIT ACCESS ON YOUTH PARTICIPATION IN
AGRO-PASTORALISM IN MANDERA COUNTY**

Do you access credit to finance operations in agro-pastoralism? *(Tick one response)*

Yes no

If yes, where *do* you access credit facility from? *(tick the main one)*

Group table banking

Savings and Credit Cooperatives Societies (SACCOS)

Banks

Friends

Online loan apps

Do you think credit facility affect your participation in agro-pastoralism?

(Tick the appropriate one) Yes No

Briefly explain your answer _____

.....

.....

**Rate the agreement to these statements relating to the influence of credit
accessibility on Agro-pastoralism in Mandera county *(use the 5-point
Likert scale to circle one response appropriately)***

1 -Strongly disagree (SD) 2- Disagree(D) 3- Medium (N) 4-Agree (A) 5-
Strongly Agree (SA)

STATEMENT	SD	A	M	D	SA
I can access credit as and when I need it from lenders to finance my agro-pastoralist activity					
Youth access credit facility in Mandera County is easy and affordable.					
Easy access to credit facilities motivates youth like me to participate in agro-pastoralism					
Lack of credit facility for youth is the main factor hindering their involvement into agro-pastoralism in Manderacounty					
Money lenders are many, varied and lend at affordable interest rates which makes credit access easy in Mandera County.					
It is very difficult for youth in Mandera County to access credit facilities since they have no guarantors or property to serve as security.					
There is shortage of lenders to the youth since they do not have collateral hindering their engagement in agropastoralism since they lack investment funds.					

**SECTION FOUR: EFFECT OF TECHNOLOGICAL FACTORS ON
YOUTH PARTICIPATION IN AGRO-PASTORALISM IN MANDEA
COUNTY**

Please indicate the extent to which you agree with the following points on a scale

STATEMENT	SD	D	M	A	SA
Technology has a major positive influence on youth participation in Agro-pastoralism in Mandera county					
Youth are able to access new technologies on agro-pastoralism					
Technology helps the youth to acquire information that influences them to participate in agro-pastoralism					
Emergence of mobile phone technology provides updated information that helps youth to participate in agro-pastoralism					
Information					
Although there is advancement in ICT, there are other technological hinderances to agro-pastoralism in Mandera County like availability of airtime, data bundles, etc.					

Do you think technology hinders youth from participating in agro-

pastoralism in Mandera county? (*Tick appropriately*)

Yes []

no []

If you answered **YES** in question (2), briefly explain how technology

hinders youth from participation in agro-pastoralism _____

If you answer **NO** in question (2), briefly explain why technology would not

influence youth participation in agro-pastoralism in Mandera county

.....

..

.....

..

SECTION FIVE

YOUTH ATTITUDE ON PERCEIVED BENEFITS OF

PARTICIPATION IN AGROPASTORALISM IN MANDERA COUNTY

Do you think attitude on perceived benefit influence youth participation agro-pastoralism in Mandera county? (*Tick appropriately*)

Yes []

No []

Influence of youth's attitude on perceived benefits on Agro-pastoralism in Mandera county (use the 5-point Likert scale to tick one response appropriately)

1 -Strongly disagree (SD) 2- Disagree(D) 3- Neutral(N) 4-Agree(A) 5- Strongly Agree (SA)

STATEMENT	SD	D	N	A	SA
Youth perceive agro-pastoralism as profitable activities					
Agro-pastoralism generates income for youth					
Youth have negative perception on the profitability of agro-pastoralism					

Agro-pastoralism is perceived to be for old people					
Youth perceive agro-pastoralism as dirty work full of drudgery hence would not get involved in it					
Agro-pastoralism is left for uneducated people					
Youth perceive agro-pastoralism as their source of employment					
Agro-pastoralism is perceived as costly practice					
Agro-pastoralism elevates social status of youth					

EFFECTS OF CULTURE ON YOUTH PARTICIPATION IN AGRO-PASTORALISM

Does the cultural practices rooted in the community influence youth participation agro-pastoralism in Mandera county? (*Tick appropriately*)

Yes[]

No[]

Influence of cultural practices on Agro-pastoralism in Manderacounty (use the 5-point Likert scale to tick one response appropriately)

1 -Strongly disagree (SD) 2- Disagree (D) 3- Neutral(N) 4-Agree(A) 5-Strongly Agree

(SA)

STATEMENT	SD	D	N	A	SA
Women are not allowed to practice agro-pastoralism					
Youth are not allowed to own any agro-pastoralism income generating activity					
Youth are hindered from acquiring social and cultural capital to enhance their economic capabilities.					
Agro-pastoralism is a preserve for the elders					
Women are viewed as housewife and seen as passive regarding agro-pastoralism activities in the community.					
Pastoral cultures forbid young people from owning agricultural land without their father's permission					
Men have the responsibility of protecting and providing for the women					
Agro-pastoralism is perceived as costly practice					
Agro-pastoralism elevates social status of youth					

SECTION SIX: YOUTH PARTICIPATION IN AGRO-PASTORALISM

How do you think is the trend of youth participation in agropastoralism in Mandera county?

(Choose one appropriate)

Increasing

moderate

Decreasing

As a youth in Mandera county, do you consider agro-pastoralism as a viable employment opportunity? *(Tick appropriately)*

Yes []

No []

Rate the agreement to these statements relating to youth participation in Agro- pastoralism in Mandera county (use the 5-point Likert scale to tick one response appropriately) where;

1 -Strongly disagree (SD) 2- Disagree(D) 3- Neutral(N) 4-Agree(A) 5-Strongly Agree (SA)

STATEMENT	SD	D	N	A	SA
Ago-pastoralism generates income for youths hence it is worth practicing					
My participation in Agro-pastoralism is beneficial and has greatly improved my livelihoods and that of my family.					

Perceived profit in Agro-pastoralism positively influences youth to participate in it					
Only a few youths have been able to participate in agro-pastoralism activities in my sub-county due to negative perception					
Youth who participate in agro-pastoralism in Mandera county have been few due to the challenges experienced in it hence others perceive it as a bother.					
Many youths operate agro-pastoralism in this region since it is a good and profitable way of Life					
I am satisfied by my participation in agro-pastoralism activities since I get gainful employment, income and make profits hence wealth from the venture.					
I do not have to leave Mandera County to seek employment to towns and cities since I am fully engaged and handsomely compensated in agropastoralism.					

Thank you for your participation and time

APPENDIX III: Map of Mandera County



Source: KNBS (2019)



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DIRECTORATE OF POSTGRADUATE STUDIES

March 27, 2023

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

Dear Sir/Madam,

RE: ISSAK GABABA IBRAHIM – (REG. NO. AGR-3-0256-2/2021)

This is to confirm that the above named person is a bona fide student of Kenya Methodist University, in the School of Science and Technology, Department of Agriculture undertaking a Master's Degree in Agriculture and Rural Development. He is conducting research on: "What Hinders Youth Participation in Agro-Pastoralism in Arid and Semi-Arid Lands: A Case of Mandera County, Kenya".

We confirm that his research proposal has been presented and approved by the University.

In this regard, we are requesting your office to issue a research license to enable him collect data.

Any assistance accorded to him will be highly appreciated.

Yours sincerely,


Dr. John M. Muchiri (PhD)
Director, Postgraduate Studies

Cc: Dean SST
CoD, Agriculture
Program Coordinator - Agriculture
Student Supervisors

