

**ASSESSMENT OF FACTORS INFLUENCING YOUTH PARTICIPATION IN
APIARY FARMING IN GWERI SUB COUNTY, SOROTI DISTRICT**

BY

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**A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF
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DECLARATION

I, OSOGOR MORRIS, hereby declare that this research report titled "Assessment of Factors Influencing Youths' Participation in Apiary Farming in Gweri Sub- County, Soroti District" is my original work. The report is based on data collected and analyzed by me during the course of the study. It has not been submitted to any other institution for the award of any academic qualification. All sources of information used in this report have been duly acknowledged and referenced.



Signature



Date

APPROVAL

This research report titled "*Assessment of the Factors Influencing Youth Participation in Apiary Farming in Gweri Sub- County, Soroti District*" was carried out by OSOGOR MORRIS under my guidance and supervision.

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Date:

31st July 2026

DEDICATION

This research project is dedicated to the dearest family of Mr. Ekolu Julius Akwap and Alego Jennifer Beatrice plus my siblings for the combined effort and support, both morally and financially they have given me during this project and in writing this project report. May the almighty God bless the work of their hands.

Great thanks go to my beloved lecturer who guided me academically and the entire wellwishers.

Finally, to all my colleagues who cooperated with me towards the accomplishment of this research project.

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LIST OF ABBREVIATIONS AND ACRONYMS

AFIEGO – Africa Institute for Energy Governance

FAO – Food and Agriculture Organization of the United Nations

ICTs – Information and Communication Technologies

MAAIF – Ministry of Agriculture, Animal Industry and Fisheries

NGOs – Non-Governmental Organizations

PDM – Parish Development Model

SACCOs – Savings and Credit Cooperative Organizations

SPSS – Statistical Package for the Social Sciences

TUNADO – The Uganda National Apiculture Development Organization

UBOS – Uganda Bureau of Statistics

YLP – Youth Livelihood Programme

ABSTRACT

This study was conducted to assess the factors influencing youths' participation in apiary farming in Gweri Sub- County, Soroti District. The purpose of the study was to understand the socio-economic factors, motivational factors, and challenges influencing youths' engagement in apiary farming. A cross-sectional survey research design employing a mixed methods approach was used. Data were collected from 60 youth respondents using structured questionnaires, while qualitative information was obtained through key informant interviews and observation. Quantitative data were analyzed using frequencies and percentages, while qualitative data were analyzed thematically.

The findings showed that access to start-up capital was the most significant socio-economic factor influencing youths' participation, with 80.0% of the respondents agreeing or strongly agreeing that it affected participation. Other key factors included the ability to integrate apiary farming with other activities (76.7%), market demand for honey (75.0%), expected income from apiary farming (71.7%), and availability of land (66.7%). The major motivational factors were availability of start-up training and access to modern beehives, each reported by 75.0% of respondents. However, participation was mainly hindered by lack of capital (81.7%), inadequate technical knowledge and skills (75.0%), pests and diseases (73.3%), inadequate markets and low honey prices (68.3%), fear of bee stings (66.7%), theft (65.0%), and land-related challenges (60.0%). Basing on the study findings, it was concluded that increasing youths' participation in apiary farming requires improved access to affordable finance, practical training, modern beekeeping equipment, extension services, reliable markets, and secure apiary sites. Therefore, it is recommended that government and stakeholders support should be strengthened to address these constraints and promote apiary farming as a sustainable livelihood and employment opportunity for youths in Gweri Sub- County.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presented the background to the study, the problem statement, the general and specific objectives, the research questions, the justification of the study, the significance of the study, the scope of the study, and the operational definitions of key terms. The study assessed the factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.

Apiary farming, commonly referred to as beekeeping or apiculture, involved the management of honeybee colonies in specially designed hives to produce valuable products such as honey, beeswax, propolis, royal jelly, and pollen. Besides producing these products, honeybees played a significant role in pollinating crops and wild plants, thereby enhancing agricultural productivity, biodiversity, and environmental sustainability. Compared to many agricultural enterprises, apiary farming required relatively small pieces of land, low capital investment, and limited labour, making it a suitable enterprise for rural youth seeking sustainable livelihoods (Food and Agriculture Organization [FAO], 2023).

1.2 Background to the Study

Apiary farming has increasingly been recognized worldwide as an important agricultural enterprise that contributes significantly to food security, income generation, employment creation, and environmental conservation. The Food and Agriculture Organization (FAO) reported that beekeeping supports the livelihoods of millions of households globally through the production of honey and other bee products while simultaneously providing essential pollination services that improve crop yields and biodiversity (FAO, 2023). Pollination by honeybees contributes substantially to global agricultural production and ecosystem sustainability.

In Africa, beekeeping has continued to emerge as an important enterprise for rural development due to its relatively low capital requirements, quick returns on investment, and compatibility with other farming activities. Several African governments and development organizations have promoted apiculture as an effective strategy for reducing rural poverty, improving household incomes, and conserving natural ecosystems. The sector has particularly benefited

women and young people because it requires limited land ownership compared to conventional agricultural enterprises (African Union Commission, 2022).

In Uganda, apiary farming has been identified as one of the priority enterprises under the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). Through collaborations with the Uganda National Apiculture Development Organization (TUNADO) and other development partners, government programmes have promoted modern beekeeping technologies, value addition, market development, and capacity building among rural farmers. These initiatives have aimed at increasing honey production, improving household incomes, creating employment opportunities, and enhancing environmental conservation (MAAIF, 2023).

Despite these interventions, youth participation in apiary farming has remained relatively low in many rural communities. The Uganda Bureau of Statistics (UBOS) reported that although young people constitute the largest proportion of Uganda's population, many remain unemployed or underemployed and continue to depend on low-income activities. Agriculture remains one of the sectors with the greatest potential for youth employment; however, many young people have shown limited interest in agricultural enterprises such as beekeeping due to financial, technical, institutional, and socio-cultural constraints (UBOS, 2024).

Within the Teso Sub-region, including Soroti District, beekeeping has traditionally been practiced using indigenous methods characterized by the use of traditional log hives and minimal management practices. Although the region possesses favorable climatic conditions, abundant flowering vegetation, and suitable tree species such as acacia and shea trees, honey production has remained below its potential because of low adoption of modern technologies and inadequate technical knowledge (Egeru et al., 2021).

Gweri Sub- County possesses suitable ecological conditions for apiary farming due to its savannah woodland vegetation, wetlands, and diverse flowering plants that provide forage for honeybees throughout much of the year. However, evidence suggested that youth participation in apiary farming remained limited. Earlier studies conducted in Soroti District indicated that a large proportion of beekeepers continued to rely on traditional hives, resulting in low productivity, frequent colony absconding, and poor-quality honey (Egeru et al., 2021).

Between 2020 and 2024, climate variability further affected the performance of the apiary sector in Eastern Uganda. Prolonged dry spells reduced flowering plants and forage

availability, making successful beekeeping increasingly dependent on improved technical knowledge and management practices such as supplementary feeding, colony inspection, and disease control. Young people lacking these skills often became discouraged from investing in the enterprise (Bees for Development, 2024).

Although government agencies, non-governmental organizations, and development partners have introduced programmes aimed at promoting youth involvement in apiary farming through training, provision of modern beehives, and improved market linkages, participation among young people in Gweri Sub- County has remained relatively low. Many youths have continued to engage in alternative livelihood activities such as motorcycle transport (boda boda), charcoal burning, casual labour, and other informal economic activities despite the increasing market demand and favorable prices for honey within Soroti District and neighboring urban centers.

It was against this background that this study assessed the factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.

1.3 Statement of the Problem

Apiary farming has been widely recognized as an important agricultural enterprise that contributes to household income, employment creation, food security, and environmental conservation through pollination services. In Uganda, the Government, through the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), in collaboration with the Uganda National Apiculture Development Organization (TUNADO) and other development partners, has promoted modern beekeeping technologies, youth training programmes, and market development initiatives to increase honey production and improve rural livelihoods (MAAIF, 2023; TUNADO, 2023).

Despite these interventions, youth participation in apiary farming in Gweri Sub- County, Soroti District, remained relatively low. During the study period, many young people continued to engage in alternative livelihood activities such as boda boda riding, casual labour, charcoal burning, and petty trade instead of investing in beekeeping, despite the area's favorable ecological conditions and the growing demand for honey. Previous studies attributed this low participation to several factors, including limited access to start-up capital, inadequate technical knowledge and skills, poor access to extension services, limited availability of modern beekeeping equipment, and inadequate market information (Egeru et al., 2021; UBOS, 2024).

If these constraints were not adequately understood and addressed, the potential of apiary farming to create employment opportunities, improve household incomes, and contribute to sustainable rural development among the youth would remain underutilized. Although several studies had examined beekeeping in different parts of Uganda, limited empirical evidence specifically addressed the factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.

It was therefore necessary to assess the factors that influenced youth participation in apiary farming in Gweri Sub- County, Soroti District. The findings of this study were expected to provide evidence that could guide government agencies, development partners, extension workers, and other stakeholders in designing interventions aimed at increasing youth involvement in apiary farming and improving rural livelihoods.

1.4 Purpose (General Objective) of the Study

The purpose of this study was to assess the factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.

1.5 Specific Objectives

The study was guided by the following specific objectives:

1. To determine the socio-economic factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.
2. To identify the motivational factors influencing youths' participation in apiary farming in Gweri sub county, Soroti district.
3. To examine the institutional factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.

1.6 Research Questions

The study was guided by the following research questions:

1. What socio-economic factors influenced youth participation in apiary farming in Gweri Sub- County, Soroti District?
2. What institutional factors influenced youth participation in apiary farming in Gweri Sub- County, Soroti District?

3. What technical factors influenced youth participation in apiary farming in Gweri Sub-County, Soroti District?

1.7 Justification of the Study

Apiary farming has the potential to improve household incomes, create employment opportunities for young people, enhance food security, and promote environmental conservation through pollination. Despite these benefits and the efforts by the Government of Uganda and development partners to promote beekeeping, youth participation in apiary farming in Gweri Sub-County, Soroti District, remained relatively low. There was limited empirical information explaining the factors responsible for this low level of participation in the study area.

Therefore, this study was justified because it generated empirical evidence on the socioeconomic, institutional, and technical factors influencing youth participation in apiary farming in Gweri Sub-County, Soroti District. The findings were expected to provide useful information for policymakers, agricultural extension workers, development partners, researchers, and other stakeholders involved in promoting youth engagement in agriculture. The study also contributed to the existing body of knowledge on youth participation in apiary farming and provided recommendations for improving youth involvement in the enterprise, thereby supporting rural livelihood improvement and sustainable agricultural development.

1.8 Significance of the Study

The findings of this study are expected to benefit various stakeholders in the following ways:

Government agencies, particularly the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and local government authorities, may use the findings to formulate and strengthen policies and programmes aimed at increasing youth participation in apiary farming.

Agricultural extension workers may use the findings to improve farmer training, advisory services, and technical support in apiary farming, thereby enhancing youth participation and productivity.

Development partners and non-governmental organizations (NGOs) may use the findings to design and implement interventions that address the socio-economic, institutional, and technical constraints limiting youth participation in apiary farming.

Youth engaged in or interested in apiary farming may benefit from the recommendations by gaining a better understanding of the opportunities and challenges associated with the enterprise, enabling them to make informed decisions.

Researchers and scholars may use the findings as reference material for future studies on apiary farming, youth participation in agriculture, and rural development.

Busitema University may use this report as a reference document for students and lecturers undertaking research in agriculture, rural development, and related disciplines.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature related to the factors influencing youth participation in apiary farming. The review is organized according to the objectives of the study and covers the overview of the apiary sector in Uganda, socio-economic factors, institutional factors, and technical factors influencing youth participation in apiary farming. The chapter also identifies gaps in the existing literature that justified the need for this study.

Apiary farming has increasingly been recognized as an important agricultural enterprise that contributes to employment creation, poverty reduction, food security, environmental conservation, and sustainable rural livelihoods. Through the production of honey and other bee products, as well as the pollination of agricultural crops and natural vegetation, beekeeping contributes significantly to agricultural productivity and biodiversity (Food and Agriculture Organization [FAO], 2023).

Globally, governments and development agencies have promoted youth participation in agriculture as a strategy for reducing unemployment and enhancing economic growth. In Uganda, apiary farming has been identified as one of the agricultural enterprises with considerable potential to generate income for rural households because it requires relatively low start-up capital, minimal land, and limited labour compared to many other agricultural

enterprises (Ministry of Agriculture, Animal Industry and Fisheries [MAAIF], 2023). Despite these advantages, youth participation in apiary farming remains relatively low due to a combination of socio-economic, institutional, and technical challenges.

The literature reviewed in this chapter provides both theoretical and empirical evidence on the factors influencing youth participation in apiary farming. It also highlights areas where previous studies have provided limited evidence, thereby establishing the knowledge gap that this study sought to address in Gweri Sub- County, Soroti District.

2.2 Overview of the Apiary Sector in Uganda

Apiary farming has become an important component of Uganda's agricultural sector because of its contribution to household income, food security, employment creation, environmental conservation, and foreign exchange earnings. Uganda possesses favorable ecological conditions for beekeeping, including diverse vegetation, abundant flowering plants, and suitable climatic conditions that support honeybee colonies throughout much of the year. These conditions provide the country with considerable potential for the production of honey and other bee products such as beeswax, propolis, pollen, royal jelly, and bee venom (Amulen et al., 2017).

The apiary sector has continued to attract attention from both the Government of Uganda and development partners because it requires relatively low start-up capital, minimal land, and limited labour compared to many other agricultural enterprises. Consequently, beekeeping has been promoted as an enterprise capable of reducing rural poverty, creating employment opportunities for women and youth, and improving household incomes while contributing to environmental sustainability through pollination services (FAO, 2023; MAAIF, 2023).

Despite its enormous potential, Uganda's apiary sector remains underdeveloped. Amulen et al. (2019) estimated that the country utilizes only a small proportion of its potential honey production capacity. This underutilization has been attributed to several constraints, including the continued use of traditional beekeeping methods, inadequate access to improved technologies, and limited technical knowledge among beekeepers, poor extension services, weak market linkages, and limited value addition of bee products. These challenges have constrained productivity and reduced the competitiveness of Uganda's honey in both domestic and international markets.

Uganda has, however, made considerable progress in promoting commercial beekeeping through partnerships involving the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), the Uganda National Apiculture Development Organization (TUNADO), private sector actors, and non-governmental organizations. These institutions have promoted modern beekeeping technologies through farmer training, distribution of improved beehives and protective equipment, quality assurance programmes, and market development initiatives aimed at increasing honey production and improving farmers' incomes (MAAIF, 2023; TUNADO, 2023).

The apiary sector has also benefited from increasing domestic and international demand for honey and other bee products. Ugandan honey is highly valued because it is largely organic and free from excessive chemical contamination, creating opportunities for export to regional and international markets. However, smallholder beekeepers continue to experience challenges in meeting international quality standards due to inadequate processing facilities, poor post-harvest handling practices, and limited access to certification services (Bailleul et al., 2019; Prodanovic et al., 2024).

In Eastern Uganda, particularly in the Teso Sub-region, apiary farming is increasingly recognized as a viable enterprise for improving rural livelihoods. The region possesses favorable climatic conditions and abundant bee forage from natural vegetation, woodlands, and agricultural crops. Nevertheless, honey production remains relatively low because many farmers continue to depend on traditional log hives, have limited access to modern beekeeping equipment, and receive inadequate technical support from extension services (Egeru et al., 2021). These constraints have limited the productivity and profitability of apiary farming despite the growing demand for honey within Uganda.

Overall, the reviewed literature demonstrates that Uganda possesses substantial potential for expanding the apiary sector. However, realizing this potential requires increased investment in modern beekeeping technologies, extension services, value addition, market development, and capacity building, particularly among young people who represent a significant proportion of the country's labour force. Strengthening these areas is likely to increase youth participation in apiary farming and enhance the sector's contribution to sustainable agricultural and rural development.

2.3 Socio-economic Factors Influencing Youth Participation in Apiary Farming

Socio-economic factors play an important role in determining the level of youth participation in apiary farming. These factors include age, education level, access to land, availability of capital, household income, market access, labour availability, and social and cultural norms. Previous studies have shown that these factors either motivate or discourage young people from engaging in beekeeping as a livelihood enterprise.

One of the major socio-economic factors influencing youths' participation in apiary farming is access to financial capital. Although beekeeping requires less capital than many agricultural enterprises, young people often lack the financial resources needed to purchase modern beehives, protective clothing, smokers, honey extractors, and other essential equipment. Limited access to credit and affordable financial services further constrains the ability of youth to establish and expand apiary enterprises (Amulen et al., 2017; Rao & Rawat, 2018). Consequently, many young people continue to base on traditional beekeeping methods, which are generally less productive.

Access to land is another important determinant of youth participation in apiary farming. While beekeeping requires relatively little land, young people, particularly women, frequently have limited ownership or control over land because of customary inheritance practices and financial constraints. As a result, many youths are unable to establish apiaries independently and must depend on family land or communal areas, which limits expansion and investment in commercial beekeeping (Food and Agriculture Organization [FAO], 2017; INCLUDE Platform, 2022).

The level of education and technical knowledge also influences youth participation in apiary farming. Young people with higher levels of education and vocational training are more likely to adopt improved beekeeping technologies and management practices because they are better able to access and apply technical information. Training programmes organized by government agencies, non-governmental organizations, and farmer associations have been shown to improve beekeeping knowledge, productivity, and enterprise management among youth (Magagula & Tsvakirai, 2025). However, inadequate access to training opportunities remains a major challenge in many rural communities.

Market access has been identified as another key factor affecting youth participation. The availability of reliable markets and favorable prices for honey and other bee products encourages investment in apiary farming by increasing the profitability of the enterprise.

Uganda has experienced growing domestic and international demand for honey, creating opportunities for commercial beekeeping. However, poor market information, inadequate value addition, weak marketing cooperatives, and limited bargaining power among smallholder producers continue to reduce the economic benefits realized by many young beekeepers (Lowore et al., 2010; Prodanovic et al., 2024).

Employment opportunities and income expectations also influence the willingness of young people to engage in apiary farming. Many youths prefer livelihood activities that provide immediate and regular income, such as boda boda transport, petty trade, and casual labour, rather than beekeeping, which requires several months before honey can be harvested. Consequently, apiary farming is often viewed as a supplementary source of income rather than a primary livelihood activity (Ahikiriza, 2016; Gikunda et al., 2021).

In addition, social and cultural beliefs significantly affect youth participation in apiary farming. In many African communities, beekeeping has traditionally been regarded as an activity for elderly men. Cultural norms restricting women from climbing trees to install or harvest traditional log hives, together with misconceptions about the enterprise, discourage the participation of both female and male youth. Such beliefs reduce youth involvement despite the availability of modern beehives that can be managed without climbing trees (Mburu et al., 2015; Hecklé et al., 2018).

Another important socio-economic factor is access to information and communication technologies. The increasing use of mobile phones, social media platforms, and internetbased learning has enabled many young people to access information on modern beekeeping techniques, marketing opportunities, and value addition. These technologies have enhanced knowledge sharing and promoted greater interest in commercial apiary farming among educated youth (Magagula & Tsvakirai, 2025).

Overall, the reviewed literature indicates that youth participation in apiary farming is strongly influenced by socio-economic factors. While favorable market opportunities, education, access to information, and the relatively low capital requirements of beekeeping encourage participation, barriers such as limited access to finance, insecure land tenure, cultural beliefs,

and competing livelihood opportunities continue to constrain youth engagement. These findings underscore the need for interventions that improve access to financial services, land, education, and markets to enhance youth participation in apiary farming.

2.4 Institutional Factors Influencing Youth Participation in Apiary Farming

Institutional factors refer to the structures, systems, policies, and support services that influence youth participation in apiary farming. These include access to extension services, government policies and programmes, training opportunities, availability of credit facilities, cooperative organizations, non-governmental organization (NGO) support, and market institutions. The literature indicates that institutional support plays a critical role in enhancing youth engagement in beekeeping by improving access to knowledge, inputs, and markets.

One of the key institutional factors influencing youth participation in apiary farming is access to extension services. Extension services provide technical guidance on modern beekeeping practices such as hive management, pest control, honey harvesting, and value addition. Studies have shown that farmers who regularly receive extension support are more likely to adopt improved technologies and engage in commercial beekeeping. However, in many rural areas of Uganda, extension services are limited due to inadequate staffing, poor funding, and logistical constraints, which reduces youth exposure to modern apiculture practices (MAAIF, 2023; Amulen et al., 2017).

Government programmes and policies also significantly influence youth participation in apiary farming. In Uganda, initiatives such as the Youth Livelihood Programme (YLP), Emyooga, and the Parish Development Model (PDM) have been introduced to improve youth access to financial resources and support income-generating activities, including apiculture. These programmes are intended to enhance youth participation by providing start-up capital, training, and enterprise support. However, challenges such as limited awareness, bureaucratic procedures, and inadequate follow-up have reduced their effectiveness in promoting sustainable youth engagement in apiary farming (MAAIF, 2023; UBOS, 2024).

The availability of training opportunities is another important institutional factor. Training provided by government agencies, NGOs, and development partners enhances youth knowledge and skills in modern beekeeping techniques. Such training includes hive construction, colony management, disease control, honey processing, and marketing. Where training is accessible and practical, youth participation in apiary farming tends to increase.

However, in many rural communities, training opportunities remain insufficient, limiting youth capacity to adopt modern beekeeping practices (TUNADO, 2023).

Access to financial institutions and credit services also affects youth participation in apiary farming. Financial institutions such as banks, savings and credit cooperative organizations (SACCOs), and microfinance institutions play a key role in providing capital for start-up and expansion of apiary enterprises. However, youth often face challenges such as lack of collateral, high interest rates, and strict lending conditions, which limit their ability to access credit for investment in beekeeping (Rao & Rawat, 2018).

In addition, cooperative societies and farmer groups influence youths' participation by facilitating access to shared resources, training, and collective marketing of bee products. Membership in cooperatives enables youth to benefit from economies of scale, improved bargaining power, and better access to extension services and markets. However, weak organization and limited participation of youth in formal groups in some areas reduce the effectiveness of this institutional support (Lowore et al., 2010).

Furthermore, non-governmental organizations (NGOs) and development partners play a significant role in promoting apiary farming among youth through capacity building, provision of beekeeping equipment, and market development initiatives. Projects implemented by NGOs have contributed to increased awareness and adoption of modern beekeeping technologies in several parts of Uganda. However, such interventions are often project-based and limited in geographical coverage and sustainability (TUNADO, 2023).

Overall, the literature indicates that institutional factors significantly determine the level of youth participation in apiary farming. Where extension services, training, financial support, and institutional coordination are strong, youth participation tends to increase. Conversely, weak institutional support systems limit youth engagement and slow down the development of the apiary sector in rural areas.

2.5 Technical Factors Influencing Youth Participation in Apiary Farming

Technical factors refer to the knowledge, skills, technologies, and practical competencies required for effective engagement in apiary farming. These factors include access to modern beekeeping technologies, technical training, hive management skills, pest and disease control knowledge, availability of equipment, and adoption of improved production practices. The

literature indicates that technical capacity significantly influences youth participation and productivity in beekeeping enterprises.

One of the key technical factors is access to modern beekeeping technologies. The use of modern hives such as Langstroth and Kenya Top Bar hives has been shown to increase honey yields, improve colony management, and reduce bee absconding compared to traditional log hives. However, many rural youths still rely on traditional beekeeping methods due to the high cost of modern hives and limited access to suppliers and technical support (Bradbear, 2024; Amulen et al., 2019). This limits productivity and discourages some youth from fully engaging in apiary farming.

Technical training and skills development also play a critical role in youth participation in apiary farming. Training equips youth with knowledge on colony management, hive construction, pest control, honey harvesting, and post-harvest handling. Studies have shown that youth who receive formal or informal training are more likely to adopt improved practices and manage beehives effectively, leading to higher productivity and income generation (Magagula & Tsvakirai, 2025). However, limited access to training opportunities in rural areas remains a major constraint.

The availability of protective equipment is another important technical factor. Beekeeping requires protective clothing such as bee suits, gloves, veils, and smokers to ensure safety during hive management and honey harvesting. Lack of this equipment exposes youth to bee stings and increases fear and risk perception, which discourages participation in apiary farming (Muju et al., 2012). In many rural communities, the high cost and limited availability of protective gear restrict youth involvement in modern beekeeping.

Pest and disease management knowledge also influences youths' participation. Bees are affected by pests such as ants, wax moths, and honey badgers, as well as diseases that can reduce colony productivity or cause absconding. Youth with limited knowledge of pest and disease control measures often experience hive losses, which discourages continued participation in apiary farming (AFIEGO, 2024). Effective management of these challenges requires technical competence and continuous training.

In addition, knowledge of honey harvesting and post-harvest handling techniques is essential for maintaining product quality and market competitiveness. Poor handling practices, including improper extraction, storage, and packaging, reduce honey quality and market value. Youth

who lack technical knowledge in these areas are less likely to benefit economically from beekeeping, which affects their motivation to continue engaging in the enterprise (Prodanovic et al., 2024).

The use of information and communication technologies (ICTs) has also emerged as an important technical factor. Mobile phones, social media platforms, and online training resources provide youth with access to information on modern beekeeping practices, market prices, and innovations in apiculture. ICTs have enhanced learning and knowledge sharing among youth, thereby improving adoption of improved technologies in some regions (Magagula & Tsvakirai, 2025).

Overall, the literature suggests that technical capacity is a key determinant of youth participation in apiary farming. Where youth have access to modern technologies, training, equipment, and technical knowledge, participation and productivity are enhanced. Conversely, limited technical skills and inadequate access to modern beekeeping tools significantly reduce youths' engagement in apiary farming.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that was employed in the study. It outlines the procedures and techniques that were used to collect, process, and analyze data on the factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.

Specifically, the chapter describes the research design, study area, target population, sampling techniques and sample size determination, data collection methods and instruments, validity and reliability of research instruments, data analysis procedures, and ethical considerations. These methodological components provided a systematic framework that guided the entire research process, ensuring that the data collected were valid, reliable, and suitable for addressing the study objectives.

3.2 Research Design

The study adopted a cross-sectional survey research design, using a mixed-methods approach that combined both quantitative and qualitative techniques. The cross-sectional design was appropriate because data were collected at a single point in time to examine the current factors influencing youth participation in apiary farming in Gweri Sub- County.

The quantitative approach was used to generate measurable data on socio-economic characteristics, levels of youth participation, and the factors influencing engagement in apiary farming. This enabled statistical analysis of relationships and patterns among variables.

The qualitative approach was employed to obtain detailed and in-depth information regarding youths' experiences, perceptions, and challenges affecting participation in apiary farming.

3.3 Study Area and Population

3.3.1 Study Area

The study was conducted in Gweri Sub- County, Soroti District, located in Eastern Uganda. Gweri Sub- County is composed of several parishes, including Gweri, Dokolo, Aukot, Awoja, and Omugenya. The area was selected because of its favorable ecological conditions for apiary farming, characterized by savannah woodland vegetation, wetlands, and a variety of flowering plants that provide adequate forage for honeybees throughout the year.

The sub-county has a predominantly rural setting where agriculture is the main economic activity. Apiary farming is among the agricultural enterprises practiced, although at a relatively low scale, despite the availability of suitable environmental conditions that support beekeeping. This makes the area appropriate for assessing the factors influencing youth participation in apiary farming.

3.3.2 Target Population

The target population comprised all youths aged between 18 and 35 years residing in Gweri Sub- County, Soroti District. The population included both male and female youths engaged in apiary farming as well as those not involved in the enterprise.

In addition, key informants such as extension workers, sub-county agricultural officers, district entomologists, and local leaders were included to provide expert and institutional perspectives on youth participation in apiary farming. This combination of respondents was considered appropriate for generating comprehensive information on the socio-economic, institutional, and technical factors influencing youth engagement in apiary farming.

3.4 Sampling Techniques and Sample Size

3.4.1 Sampling Techniques

The study employed a combination of sampling techniques to ensure the inclusion of relevant respondents and to enhance the reliability of the data collected. Simple random sampling was used to select youth respondents aged 18–35 years within the study area to give each member of the population an equal chance of participation. This helped reduce selection bias and ensured representativeness of views from both youths engaged and those not engaged in apiary farming.

Purposive sampling was used to select key informants who possessed specialized knowledge and experience relevant to the study. These included extension workers, sub-county agricultural officers, district entomologists, and local leaders. Their inclusion was essential in providing in-depth institutional and technical insights on youth participation in apiary farming within Gweri Sub- County, Soroti District, and the broader context of Eastern Uganda.

3.4.2 Sample Size

The sample size for the youth respondents was determined using Yamane's (1967) simplified formula for sample size determination at a 95% confidence level and a margin of error of 5%. This approach was considered appropriate due to the relatively large and known population of youths in the study area.

In addition, a purposive sample of key informants was included to provide qualitative and expert perspectives. The final sample size was therefore composed of both randomly selected youth respondents and purposively selected key informants, ensuring a balance between statistical representation and depth of information.

3.5 Data Collection Methods

The study employed a combination of primary and secondary data collection methods to obtain comprehensive information on youth participation in apiary farming.

3.5.1 Questionnaires

Structured questionnaires were used to collect quantitative data from youth respondents aged 18–35 years. The questionnaires contained both closed-ended and a few open-ended questions designed to capture information on socio-economic characteristics, awareness, access to resources, and factors influencing participation in apiary farming. The tool was preferred because it allowed data to be collected from a relatively large number of respondents within a short period of time.

3.5.2 Key Informant Interviews

Key informant interviews were conducted with selected extension workers, sub-county agricultural officers, district entomologists, and local leaders. These interviews provided indepth qualitative information on institutional support, technical challenges, and policy-related issues affecting youth engagement in apiary farming. A semi-structured interview guide was used to allow flexibility while maintaining focus on the study objectives.

3.5.3 Observation Method

Direct observation was also employed to complement data obtained from questionnaires and interviews. The researcher observed existing apiary practices, availability of beekeeping equipment, and environmental conditions supporting honey production within the study area. This helped to validate responses provided by participants.

3.5.4 Secondary Data

Secondary data were obtained from relevant documents such as agricultural reports, district records, journal articles, and government publications. This information was used to support and compare findings from primary data sources.

3.6 Data Collection Instruments

The study utilized several instruments to facilitate accurate and reliable data collection from the selected respondents.

3.6.1 Questionnaires

A structured questionnaire was the main instrument used for collecting quantitative data from youth respondents. The questionnaire consisted of both closed-ended and a few open-ended questions designed in line with the study objectives. It was divided into sections covering demographic characteristics, awareness of apiary farming, access to resources, and factors influencing participation in beekeeping activities.

3.6.2 Interview Guide

A semi-structured interview guide was used to collect qualitative data from key informants such as extension workers, sub-county agricultural officers, district entomologists, and local leaders. The guide ensured consistency in the information collected while allowing respondents to freely express their views and experiences regarding youth involvement in apiary farming.

3.6.3 Observation Checklist

An observation checklist was used to systematically record physical evidence related to apiary farming practices. This included availability and condition of beehives, types of beekeeping methods used, environmental conditions, and general farm management practices observed in the study area.

The use of multiple instruments enhanced data validity and reliability through triangulation, ensuring that findings were well supported from different sources.

3.7 Validity and Reliability of Research Instruments

3.7.1 Validity of Instruments

Validity refers to the extent to which the research instruments accurately measure what they are intended to measure. In this study, validity was ensured through expert review and consultation. The research instruments (questionnaires, interview guides, and observation checklists) were developed in line with the study objectives and reviewed by the research supervisor and other academic experts.

Their feedback was used to improve clarity, relevance, and consistency of the questions. This process ensured that the instruments adequately captured information on factors influencing youth participation in apiary farming.

3.7.2 Reliability of Instruments

Reliability refers to the consistency of the research instruments in producing similar results under consistent conditions. To ensure reliability, a pilot study was conducted using a small

sample of respondents who were not part of the final study sample. The responses obtained were analyzed to identify ambiguities and inconsistencies in the instruments.

Based on the pilot findings, necessary adjustments were made to improve clarity and consistency. This ensured that the instruments could produce dependable and stable results when administered to the target population in Gweri Sub- County.

3.8 Data Collection Procedure

Before data collection commenced, verbal permission was sought from local leaders and relevant authorities in Gweri Sub- County to conduct the study in the field. This facilitated acceptance and cooperation from the community and enabled access to respondents and relevant offices. Community entry procedures, including engagement with village leaders, were also used to ensure smooth data collection.

After obtaining permission, respondents were identified and recruited based on the sampling criteria. The selected youth respondents were approached and administered questionnaires, with guidance provided where necessary to ensure accuracy and completeness of responses.

Key informant interviews were arranged in advance with extension workers, sub-county agricultural officers, district entomologists, and local leaders at agreed times and locations. The interviews were conducted using a semi-structured interview guide while detailed notes of the responses were taken.

Observation was carried out concurrently during field visits to capture physical evidence related to apiary farming practices. Secondary data were collected from relevant reports and documents available at sub-county and district offices.

All completed instruments were checked daily for completeness and consistency to ensure data quality before proceeding to the next stage of analysis.

3.9 Data Analysis Procedures

After data collection, the collected data were systematically processed to ensure accuracy, completeness, and consistency before analysis. The questionnaires were first checked for completeness and edited to remove errors and inconsistencies. The responses were then coded and entered into a computer for analysis using Microsoft Excel and/or Statistical Package for Social Sciences (SPSS).

Quantitative data obtained from the questionnaires were analyzed using descriptive statistical techniques. These included frequencies, percentages, and means, which were used to summarize respondents' demographic characteristics and key variables related to youth participation in apiary farming. The results were presented in form of tables, charts, and graphs to facilitate clear interpretation and comparison.

Where necessary, inferential statistical analysis such as correlation analysis was applied to determine the relationship between selected socio-economic and institutional factors and youth participation in apiary farming in Gweri Sub- County. This helped in establishing the strength and direction of associations among variables in line with the study objectives.

Qualitative data collected from key informant interviews and observation notes were analyzed using thematic analysis. Responses were organized into emerging themes based on the study objectives, including socio-economic, institutional, and technical factors influencing youth participation in apiary farming. These qualitative findings were used to complement and explain the quantitative results, thereby enhancing the validity and depth of the study.

The integration of both quantitative and qualitative data ensured triangulation, which improved the reliability and comprehensiveness of the study findings.

3.10 Ethical Considerations

Ethical considerations were observed throughout the study to ensure that the rights, dignity, and welfare of all participants were protected. Before commencing data collection, an introductory letter was obtained from the relevant academic institution and presented to local authorities in Gweri Sub- County to seek permission to conduct the study.

Informed consent was obtained from all respondents prior to their participation in the study. The purpose of the research was clearly explained to them, and they were assured that participation was voluntary. Respondents were also informed that they had the right to withdraw from the study at any time without any form of penalty or negative consequences.

Confidentiality and anonymity of respondents were strictly maintained. Personal identifiers such as names were not recorded on the research instruments, and all information collected was used strictly for academic purposes only. Data was securely stored and accessed only by the researcher and supervisor to prevent unauthorized access.

I ensured honesty and integrity in all stages of the research process, including data collection, analysis, and reporting. There was no fabrication, falsification, or manipulation of data, and all findings were reported as they were obtained from the field.

Finally, respect for participants was maintained throughout the study by ensuring that interviews and questionnaire administration were conducted in a professional and noncoercive manner, taking into consideration the time and convenience of respondents.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents, analyzes, and discusses the findings of the study on the factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District. The findings are presented according to the specific objectives of the study. Quantitative data collected from youth respondents were analyzed using descriptive statistics, including frequencies and percentages, and presented in tables for ease of interpretation. Qualitative

information obtained from key informant interviews and observations was used to complement and explain the quantitative findings.

The chapter begins by presenting the background characteristics of the respondents, followed by the findings on the factors influencing youth participation in apiary farming. The presentation and interpretation of the findings are organized according to the study objectives, namely socio-economic factors, motivational factors, and institutional factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District. The results are presented and interpreted to provide evidence on the factors that influence young people's involvement in apiary farming in the study area.

4.2 Background Characteristics of Respondents

This section presents the background characteristics of the respondents who participated in the study. The characteristics considered included age, gender, level of education, occupation, and involvement in apiary farming. The presentation of these characteristics was important because it provided a general profile of the respondents and helped to establish the context within which the findings on youth participation in apiary farming were interpreted.

4.2.1 Distribution of Respondents by Age

The respondents were grouped into four age categories: 18–20 years, 21–25 years, 26–30 years, and 31–35 years. The distribution of respondents according to age is presented in Table 4.1.

Table 4.1: Distribution of Respondents by Age

Age category	Frequency (n=60)	Percentage (%)

18-20	10	16.7
21-25	22	36.7
26-30	18	30.0
31-35	10	16.6
Total	60	100.0

Source: Field Data, 2025

Interpretation

The findings in Table 4.1 show that the largest proportion of respondents, 22 (36.7%), were aged between 21 and 25 years. This was followed by respondents aged 26–30 years, who constituted 18 (30.0%) of the sample. Respondents aged 18–20 years and those aged 31–35 years each accounted for 10 respondents, representing 16.7% and 16.6%, respectively.

The findings indicate that the study included respondents from all the specified youth age categories. The majority of the respondents were between 21 and 30 years of age, suggesting that the study largely captured young adults within the economically active youth population. This provided a suitable basis for examining the factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District.

4.2.2 Distribution of Respondents by Gender

The gender distribution of the respondents is presented in Table 4.2. Gender was considered an important background characteristic because it provided information on the representation of male and female youth who participated in the study. **Table 4.2: Distribution of Respondents by Gender**

Gender	Frequency (n=60)	Percentage (%)
Male	36	60.0
Female	24	40.0
Total	60	100.0

Source: Field Data, 2025

Interpretation

The findings in Table 4.2 show that male respondents constituted the majority of the study participants, accounting for 36 (60.0%), while female respondents accounted for 24 (40.0%). This indicates that both male and female youth were represented in the study, although male respondents were more numerous.

The higher proportion of male respondents may suggest that male youth were more accessible or more actively involved in apiary farming in the study area. However, the participation of 40.0% female respondents demonstrates that youth participation in apiary farming was not limited to males. The representation of both genders therefore provided diverse perspectives on the socio-economic, motivational, and institutional factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District

4.3 Socio-economic Factors Influencing Youth Participation in Apiary Farming

This section presents the findings on the socio-economic factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District. The findings address the first specific objective of the study, which sought to determine the socio-economic factors influencing youth participation in apiary farming.

The socio-economic factors examined included access to start-up capital, availability of land, market demand for honey, expected income from apiary farming, access to training and information, influence from family and friends, and the ability to combine apiary farming with other economic activities. Respondents were asked to indicate their level of agreement with statements relating to these factors using a five-point Likert scale, where 1 represented Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, and 5 Strongly Agree. The findings are presented in the tables below.

4.3.1 Access to Start-up Capital

The respondents were asked whether inadequate access to start-up capital influenced youth participation in apiary farming. The findings are presented in Table 4.3.

Table 4.3: Respondents' Views on Access to Start-up Capital

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	2	3.3

Disagree	4	6.7
Neutral	6	10.0
Agree	20	33.3
Strongly Agree	28	46.7
Total	60	100.0

The findings in Table 4.3 show that 48 respondents (80.0%) agreed or strongly agreed that inadequate access to start-up capital influenced youth participation in apiary farming. Of these, 20 (33.3%) agreed, while 28 (46.7%) strongly agreed. Six respondents (10.0%) were neutral, whereas only 6 respondents (10.0%) disagreed or strongly disagreed.

These findings indicate that inadequate access to financial capital was a major socioeconomic factor influencing youth participation in apiary farming. The lack of adequate capital may limit the ability of young people to purchase beehives, protective clothing, smokers, honey harvesting equipment, and other materials required to establish and manage apiary enterprises.

4.3.2 Availability of Land for Apiary Establishment

The study also examined whether access to land influenced youth participation in apiary farming. The findings are presented in Table 4.4.

Table 4.4: Respondents' Views on Availability of Land for Apiary Farming

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	4	6.7
Disagree	8	13.3
Neutral	8	13.3
Agree	24	40.0
Strongly Agree	16	26.7
Total	60	100.0

The findings show that 40 respondents (66.7%) agreed or strongly agreed that availability of land influenced youth participation in apiary farming. A total of 12 respondents (20.0%) disagreed or strongly disagreed, while 8 respondents (13.3%) remained neutral.

The findings suggest that access to suitable land was an important consideration in youth participation in apiary farming. Although apiary farming does not require extensive land compared with some other agricultural enterprises, young people may still face difficulties in accessing suitable and secure locations for placing beehives. Limited access to land may therefore discourage some youth from establishing apiary enterprises.

4.3.3 Market Demand for Honey

The respondents were asked whether high market demand for honey influenced their participation in apiary farming. The results are presented in Table 4.5.

Table 4.5: Respondents' Views on Market Demand for Honey

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	3	5.0
Disagree	5	8.3
Neutral	7	11.7
Agree	25	41.7
Strongly Agree	20	33.3
Total	60	100.0

The findings indicate that 45 respondents (75.0%) agreed or strongly agreed that market demand for honey influenced youth participation in apiary farming. Twenty-five respondents (41.7%) agreed, while 20 (33.3%) strongly agreed. On the other hand, 8 respondents (13.3%) disagreed or strongly disagreed, while 7 (11.7%) were neutral.

The findings suggest that the availability of a market for honey was an important factor encouraging youth participation in apiary farming. The existence of market opportunities may

increase the attractiveness of apiary farming as an income-generating enterprise. However, the proportion of respondents who were neutral or disagreed indicates that market availability alone may not be sufficient to encourage participation where other constraints, such as lack of capital and technical knowledge, exist.

4.3.4 Expected Income from Apiary Farming

The study further examined whether the expected income from apiary farming influenced youth participation. The findings are shown in Table 4.6.

Table 4.6: Respondents' Views on Expected Income from Apiary Farming

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	3	5.0
Disagree	6	10.0
Neutral	8	13.3
Agree	24	40.0
Strongly Agree	19	31.7
Total	60	100.0

The findings show that 43 respondents (71.7%) agreed or strongly agreed that expected income influenced youth participation in apiary farming. A total of 9 respondents (15.0%) disagreed or strongly disagreed, while 8 respondents (13.3%) were neutral.

This suggests that the income-generating potential of apiary farming was an important factor in attracting young people to the enterprise. Youth are more likely to participate in an agricultural enterprise when they believe that it can provide a reasonable return on investment. However, the findings also suggest that income expectations must be supported by access to markets, capital, and appropriate technical knowledge.

4.3.5 Influence of Family and Friends

The study also assessed the influence of family members and friends who were already involved in beekeeping. The results are presented in Table 4.7.

Table 4.7: Influence of Family Members and Friends on Youth Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	5	8.3
Disagree	9	15.0
Neutral	12	20.0
Agree	21	35.0
Strongly Agree	13	21.7
Total	60	100.0

The findings indicate that 34 respondents (56.7%) agreed or strongly agreed that family members and friends influenced youth participation in apiary farming. However, 14 respondents (23.3%) disagreed or strongly disagreed, while 12 respondents (20.0%) were neutral.

These findings suggest that social networks played a moderate role in influencing youth participation in apiary farming. Young people who interacted with family members or friends involved in beekeeping could obtain information, encouragement, practical knowledge, and motivation to participate in the enterprise.

4.3.6 Ability to Combine Apiary Farming with Other Activities

The study further examined whether the ability to combine apiary farming with school, employment, or other economic activities influenced youth participation. The findings are presented in Table 4.8.

Table 4.8: Ability to Combine Apiary Farming with Other Activities

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	2	3.3
Disagree	5	8.3
Neutral	7	11.7

Agree	27	45.0
Strongly Agree	19	31.7
Total	60	100.0

The findings show that 46 respondents (76.7%) agreed or strongly agreed that the ability to combine apiary farming with other activities influenced their participation. Only 7 respondents (11.6%) disagreed or strongly disagreed, while 7 respondents (11.7%) were neutral.

The findings suggest that the flexibility of apiary farming was an important factor influencing youth participation. Since apiary farming does not always require continuous daily labour, young people may be able to combine it with crop farming, livestock farming, education, employment, or other income-generating activities.

4.3.7 Summary of Socio-economic Factors Influencing Youth Participation

The findings presented in this section show that several socio-economic factors influenced youth participation in apiary farming in Gweri Sub- County. The most strongly reported factor was access to start-up capital, with 80.0% of respondents agreeing or strongly agreeing that inadequate capital influenced participation. This was followed by the ability to combine apiary farming with other activities (76.7%), market demand for honey (75.0%), expected income from apiary farming (71.7%), and availability of land (66.7%).

The influence of family members and friends was relatively moderate, with 56.7% of respondents agreeing or strongly agreeing that it influenced participation. Overall, the findings demonstrate that youth participation in apiary farming was influenced by a combination of financial, economic, resource-related, and social factors. Access to capital emerged as the most important constraint, while the potential for income generation, market opportunities, and the flexibility of apiary farming acted as important factors that could encourage youth participation.

4.4 Motivational Factors Influencing Youth Participation in Apiary Farming

This section presents the findings on the motivational factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District. The findings address the second specific objective of the study, which sought to determine the factors that motivate young people to participate in apiary farming.

The motivational factors examined included access to start-up training, access to modern beekeeping equipment, the environmental benefits of beekeeping, support from government and non-governmental organizations, and the relatively low labour requirement associated with apiary farming. Respondents were asked to indicate their level of agreement with statements relating to these factors using a five-point Likert scale, where 1 represented Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, and 5 Strongly Agree.

4.4.1 Availability of Start-up Training in Beekeeping

The respondents were asked whether the availability of start-up training in beekeeping motivated them to participate in apiary farming. The findings are presented in Table 4.9.

Table 4.9: Availability of Start-up Training as a Motivating Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	3	5.0
Disagree	5	8.3
Neutral	7	11.7
Agree	24	40.0
Strongly Agree	21	35.0
Total	60	100.0

The findings in Table 4.9 show that 45 respondents (75.0%) agreed or strongly agreed that the availability of start-up training motivated youth to participate in apiary farming. Specifically, 24 respondents (40.0%) agreed, while 21 (35.0%) strongly agreed. Seven respondents (11.7%) were neutral, while 8 respondents (13.3%) disagreed or strongly disagreed.

The findings suggest that training was an important motivating factor in youth participation in apiary farming. Training may increase young people's knowledge and confidence in undertaking beekeeping activities, including hive establishment, colony management, harvesting, and handling of bee products.

4.4.2 Access to Modern Beehives

The study also examined whether access to modern beehives, such as Kenya Top Bar and Langstroth hives, motivated youth participation in apiary farming. The results are presented in Table 4.10.

Table 4.10: Access to Modern Beehives as a Motivating Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	2	3.3
Disagree	5	8.3
Neutral	8	13.3
Agree	25	41.7
Strongly Agree	20	33.3
Total	60	100.0

The findings show that 45 respondents (75.0%) agreed or strongly agreed that access to modern beehives motivated youth participation in apiary farming. A total of 7 respondents (11.6%) disagreed or strongly disagreed, while 8 respondents (13.3%) were neutral.

The findings indicate that modern beekeeping equipment was an important motivation for youth participation. Access to improved beehives may make apiary farming more attractive by improving hive management, increasing production potential, and reducing some of the difficulties associated with traditional beekeeping methods.

4.4.3 Environmental Benefits of Apiary Farming

The respondents were asked whether the environmental benefits of beekeeping, including the promotion of trees and environmental conservation, motivated them to participate in apiary farming. The findings are presented in Table 4.11.

Table 4.11: Environmental Benefits as a Motivating Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	4	6.7
Disagree	7	11.7
Neutral	10	16.6
Agree	23	38.3
Strongly Agree	16	26.7
Total	60	

The findings indicate that 39 respondents (65.0%) agreed or strongly agreed that the environmental benefits of apiary farming motivated them to participate. Seventeen respondents (28.4%) disagreed or strongly disagreed, while 10 respondents (16.6%) were neutral.

These findings suggest that environmental conservation was a motivating factor for a considerable proportion of the respondents. Apiary farming may encourage the conservation of trees and flowering plants that provide forage for bees. Consequently, young people who value environmental conservation may view apiary farming as both an income-generating activity and an environmentally friendly enterprise.

4.4.4 Government and Non-governmental Organization Support

The study further examined whether support from government programmes and nongovernmental organizations motivated youth participation in apiary farming. The results are presented in Table 4.12.

Table 4.12: Government and NGO Support as a Motivating Factor to Youths Participation in Apiary Farming in Gweri sub county, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	5	8.3
Disagree	8	13.3
Neutral	9	15.0

Agree	23	38.4
Strongly Agree	15	25.0
Total	60	100.0

The findings show that 38 respondents (63.4%) agreed or strongly agreed that support from government programmes and non-governmental organizations motivated youth participation in apiary farming. Thirteen respondents (21.6%) disagreed or strongly disagreed, while 9 respondents (15.0%) were neutral.

The findings suggest that institutional support can motivate youth to participate in apiary farming. Such support may include training, provision of beekeeping equipment, access to financial support, and technical guidance. However, the proportion of respondents who disagreed or remained neutral suggests that such support may not have reached all young people in the study area.

4.4.5 Low Labour Requirement of Apiary Farming

The respondents were also asked whether the relatively low labour requirement of apiary farming compared with some other agricultural activities motivated their participation. The findings are presented in Table 4.13.

Table 4.13: Low Labour Requirement as a Motivating Factor to Youths Participation in Apiary Farming in Gweri sub county, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	3	5.0
Disagree	6	10.0
Neutral	8	13.3
Agree	26	43.4
Strongly Agree	17	28.3
Total	60	100.0

The findings show that 43 respondents (71.7%) agreed or strongly agreed that the relatively low labour requirement of apiary farming motivated their participation. Nine respondents (15.0%) disagreed or strongly disagreed, while 8 respondents (13.3%) were neutral.

The findings suggest that the relatively flexible labour requirements of apiary farming made the enterprise attractive to many young people. Youth may be able to undertake beekeeping alongside crop farming, livestock farming, education, employment, or other economic activities.

4.4.6 Summary of Motivational Factors

The findings presented in this section show that several factors motivated youth participation in apiary farming in Gweri Sub- County. The most strongly reported motivational factors were the availability of start-up training and access to modern beehives, each of which received agreement or strong agreement from 75.0% of the respondents. This was followed by the low labour requirement of apiary farming at 71.7%, environmental benefits at 65.0%, and support from government and non-governmental organizations at 63.4%.

Overall, the findings indicate that youth participation in apiary farming was motivated not only by the possibility of earning income but also by access to knowledge, improved technology, institutional support, environmental benefits, and the flexibility of the enterprise.

These factors may increase the attractiveness of apiary farming as a livelihood activity for young people in Gweri Sub- County.

4.5 Factors Hindering Youth Participation in Apiary Farming

This section presents the findings on the factors hindering youth participation in apiary farming in Gweri Sub- County, Soroti District. The findings address the third specific objective of the study, which sought to identify the major challenges that limit youth participation in apiary farming.

The factors examined included fear of bee stings, inadequate capital, pests and diseases, inadequate technical knowledge and skills, lack of water near apiary sites during dry seasons, inadequate markets and low prices, negative perceptions about beekeeping, limited access to honey-processing equipment, theft of beehives and honey, and land-related challenges. Respondents were asked to indicate their level of agreement with each statement using a fivepoint Likert scale, where 1 represented Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, and 5 Strongly Agree.

4.5.1 Fear of Bee Stings and Allergic Reactions

The respondents were asked whether fear of bee stings and possible allergic reactions hindered youth participation in apiary farming. The findings are presented in Table 4.14.

Table 4.14: Fear of Bee Stings as a Hindering Factor to youths' participation in apiary Farming in Gweri Sub County, Soroti District.

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	4	6.7
Disagree	8	13.3
Neutral	8	13.3
Agree	24	40.0
Strongly Agree	16	26.7
Total	60	100.0

The findings show that 40 respondents (66.7%) agreed or strongly agreed that fear of bee stings and allergic reactions hindered youth participation in apiary farming. Twelve respondents (20.0%) disagreed or strongly disagreed, while 8 respondents (13.3%) were neutral.

The findings indicate that fear of bee stings was a considerable barrier to youth participation. Young people who lacked protective equipment or adequate knowledge of safe hive management may be more likely to fear bee stings, thereby discouraging them from entering or continuing in apiary farming.

4.5.2 Lack of Capital for Beekeeping Equipment

The study examined whether lack of capital to purchase beehives and protective equipment hindered youth participation. The findings are presented in Table 4.15.

Table 4.15: Lack of Capital as a Hindering Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	2	3.3

Disagree	4	6.7
Neutral	5	8.3
Agree	21	35.0
Strongly Agree	28	46.7
Total	60	100.0

The findings indicate that 49 respondents (81.7%) agreed or strongly agreed that lack of capital to purchase beehives and protective equipment hindered youth participation. Only 6 respondents (10.0%) disagreed or strongly disagreed, while 5 respondents (8.3%) were neutral.

These findings suggest that inadequate financial resources were one of the greatest barriers to youth participation in apiary farming. Without sufficient capital, young people may be unable to purchase improved beehives, protective clothing, smokers, harvesting equipment, and other essential inputs.

4.5.3 Pests and Diseases

The respondents were asked whether pests and diseases affecting bee colonies hindered their participation in apiary farming. The findings are presented in Table 4.16.

Table 4.16: Pests and Diseases as a Hindering Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	3	5.0
Disagree	6	10.0
Neutral	7	11.7
Agree	25	41.6
Strongly Agree	19	31.7
Total	60	100.0

The findings show that 44 respondents (73.3%) agreed or strongly agreed that pests and diseases hindered youth participation in apiary farming. Nine respondents (15.0%) disagreed or strongly disagreed, while 7 respondents (11.7%) were neutral.

The findings suggest that pests and diseases were important technical challenges affecting youth participation. Losses resulting from pests and diseases may reduce productivity and discourage young people from investing in apiary farming.

4.5.4 Inadequate Knowledge and Skills in Modern Beekeeping

The study also examined whether inadequate knowledge and skills in modern beekeeping hindered youth participation. The findings are presented in Table 4.17.

Table 4.17: Inadequate Knowledge and Skills as a Hindering Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District (n = 60)

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	3	5.0
Disagree	5	8.3
Neutral	7	11.7
Agree	24	40.0
Strongly Agree	21	35.0
Total	60	100.0

The findings indicate that 45 respondents (75.0%) agreed or strongly agreed that inadequate knowledge and skills in modern beekeeping hindered youth participation. Eight respondents (13.3%) disagreed or strongly disagreed, while 7 respondents (11.7%) were neutral.

The findings suggest that lack of technical competence was a major barrier to youth participation. Inadequate knowledge of hive management, colony care, pest and disease control, harvesting, and post-harvest handling may reduce the confidence of young people to engage in apiary farming.

4.5.5 Inadequate Market and Low Honey Prices

The respondents were asked whether inadequate markets and low prices for honey hindered youth participation in apiary farming. The findings are presented in Table 4.18.

Table 4.18: Inadequate Market and Low Prices as a Hindering Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	4	6.7
Disagree	7	11.7
Neutral	8	13.3
Agree	24	40.0
Strongly Agree	17	28.3
Total	60	100.0

The findings show that 41 respondents (68.3%) agreed or strongly agreed that inadequate markets and low honey prices hindered youth participation. Eleven respondents (18.4%) disagreed or strongly disagreed, while 8 respondents (13.3%) were neutral.

The findings suggest that market challenges may reduce the attractiveness and profitability of apiary farming. When producers are unable to access reliable markets or receive satisfactory prices for honey and other bee products, young people may be discouraged from investing in the enterprise.

4.5.6 Negative Perceptions about Beekeeping

The study further examined whether the perception that beekeeping is an activity for older people hindered youth participation. The results are presented in Table 4.19.

Table 4.19: Negative Perceptions about Beekeeping as a Hindering Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	7	11.7

Disagree	13	21.6
Neutral	12	20.0
Agree	18	30.0
Strongly Agree	10	16.7
Total	60	100.0

The findings indicate that 28 respondents (46.7%) agreed or strongly agreed that negative perceptions about beekeeping hindered youth participation. Twenty respondents (33.3%) disagreed or strongly disagreed, while 12 respondents (20.0%) were neutral.

The findings suggest that negative social perceptions may hinder some young people from participating in apiary farming. However, the lower level of agreement compared with financial and technical constraints indicates that cultural perceptions may be a less significant barrier than lack of capital, inadequate skills, and pests and diseases.

4.5.7 Theft of Beehives and Honey

The respondents were asked whether theft of beehives and honey hindered youth participation in apiary farming. The findings are presented in Table 4.20.

Table 4.20: Theft as a Hindering Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	4	6.7
Disagree	8	13.3
Neutral	9	15.0
Agree	23	38.3
Strongly Agree	16	26.7
Total	60	100.0

Source: Field Data, 2025

The findings show that 39 respondents (65.0%) agreed or strongly agreed that theft of beehives and honey hindered youth participation. Twelve respondents (20.0%) disagreed or strongly disagreed, while 9 respondents (15.0%) were neutral.

These findings indicate that insecurity and theft may discourage young people from investing in apiary farming. The loss of beehives, colonies, or harvested honey may result in financial losses and reduce confidence in the enterprise.

4.5.8 Land Conflicts and Lack of Land Ownership

The study also examined whether land conflicts and lack of land ownership hindered youth participation in apiary farming. The findings are presented in Table 4.21.

Table 4.21: Land-Related Challenges as a Hindering Factor to Youths Participation in Apiary Farming in Gweri Sub County, Soroti District

Response	Frequency (n=60)	Percentage (%)
Strongly Disagree	5	8.3
Disagree	9	15.0
Neutral	10	16.7
Agree	22	36.7
Strongly Agree	14	23.3
Total	60	100.0

The findings indicate that 36 respondents (60.0%) agreed or strongly agreed that land conflicts and lack of land ownership hindered youth participation in apiary farming. Fourteen respondents (23.3%) disagreed or strongly disagreed, while 10 respondents (16.7%) were neutral.

The findings suggest that insecure access to land may discourage young people from establishing permanent apiary enterprises. Youth who do not own land may depend on

borrowed or rented land, which may create uncertainty regarding the long-term security of their apiary investments.

4.5.9 Overall Summary of Factors Hindering Youth Participation

The findings presented in this section show that youth participation in apiary farming was hindered by a combination of financial, technical, environmental, market, social, and security-related challenges.

The most prominent hindering factor was lack of capital to purchase beehives and protective equipment, with 81.7% of respondents agreeing or strongly agreeing that it affected participation. This was followed by inadequate knowledge and skills in modern beekeeping (75.0%), pests and diseases (73.3%), inadequate markets and low honey prices (68.3%), fear of bee stings (66.7%), theft of beehives and honey (65.0%), and land-related challenges (60.0%).

Negative perceptions about beekeeping as an activity for older people were reported by a relatively smaller proportion of respondents, with 46.7% agreeing or strongly agreeing that this hindered youth participation.

Overall, the findings indicate that the major barriers to youth participation in apiary farming were primarily financial and technical in nature. Inadequate access to capital and limited technical knowledge reduced the ability and confidence of young people to establish and manage apiary enterprises. These challenges were further compounded by pests and diseases, market difficulties, fear of bee stings, theft, and insecure access to land.

4.6 Summary of Chapter Four Findings

This chapter presented, analyzed, and interpreted the findings of the study on factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District. The findings were presented according to the specific objectives of the study and focused on the socio-economic factors, motivational factors, and factors hindering youth participation in apiary farming.

Regarding the socio-economic factors influencing youth participation, the findings showed that access to start-up capital was the most significant factor, with 80.0% of respondents agreeing or strongly agreeing that inadequate capital influenced youth participation. Other important socio-economic factors included the ability to combine apiary farming with other activities (76.7%), market demand for honey (75.0%), expected income from apiary farming (71.7%),

availability of land (66.7%), and the influence of family members and friends (56.7%). These findings suggest that financial resources, economic opportunities, access to productive resources, and social influence played an important role in determining youth participation in apiary farming.

With regard to the motivational factors, the findings indicated that the availability of start-up training and access to modern beehives were among the strongest motivating factors, each receiving agreement or strong agreement from 75.0% of respondents. These were followed by the relatively low labour requirement of apiary farming (71.7%), the environmental benefits of beekeeping (65.0%), and support from government and non-governmental organizations (63.4%). The findings therefore suggest that knowledge, improved technology, flexibility, environmental conservation, and institutional support can encourage young people to participate in apiary farming.

Concerning the factors hindering youth participation, the findings showed that lack of capital to purchase beehives and protective equipment was the most prominent challenge, with 81.7% of respondents agreeing or strongly agreeing that it hindered participation. This was followed by inadequate knowledge and skills in modern beekeeping (75.0%), pests and diseases (73.3%), inadequate markets and low honey prices (68.3%), fear of bee stings (66.7%), theft of beehives and honey (65.0%), and land-related challenges (60.0%). Negative perceptions that beekeeping is an activity for older people were reported by a relatively smaller proportion of respondents, with 46.7% agreeing or strongly agreeing that this hindered youth participation.

Overall, the findings demonstrate that youth participation in apiary farming in Gweri Sub-County was influenced by a combination of economic opportunities, access to resources, training, technology, institutional support, and the challenges associated with beekeeping. The findings further indicate that lack of capital and inadequate technical knowledge were among the most important barriers to youth participation, while training, access to modern beekeeping equipment, market opportunities, expected income, and the flexibility of apiary farming provided important incentives for participation.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of the findings, conclusions, recommendations, and areas for further research arising from the study on factors influencing youth participation in apiary farming in Gweri Sub- County, Soroti District. The findings are discussed in relation to the specific objectives of the study and compared with relevant empirical studies and literature reviewed in Chapter Two.

The chapter further presents conclusions drawn from the findings on the socio-economic factors, motivational factors, and challenges hindering youth participation in apiary farming. Based on the findings and conclusions, recommendations are provided to relevant stakeholders, including the Government, agricultural extension workers, financial institutions, development partners, farmer groups, community leaders, and the youth. The chapter concludes by suggesting areas for further research on youth participation and the development of apiary farming in the study area.

This version matches the structure and actual findings of Chapter Four better because it clearly reflects the three areas covered there: socio-economic factors, motivational factors, and factors hindering youths' participation.

5.2 Summary of Key Findings

The study examined the factors influencing youths' participation in apiary farming in Gweri Sub- County, Soroti District. The findings were summarized according to the socio-economic factors influencing youth participation, motivational factors encouraging youth participation, and challenges hindering youth participation in apiary farming.

5.2.1 Influence of Socio-economic Factors

The study findings show that socio-economic factors played an important role in influencing youth participation in apiary farming. Lack of capital was identified as the most important socio-economic factor, with 80.0% of the respondents indicating that access to financial resources influenced their participation in apiary farming. The findings also showed that 76.7% of the respondents considered the ability to combine apiary farming with other income-generating activities as an important factor influencing participation.

Market demand for honey and other bee products was also an important factor, as reported by 75.0% of the respondents. In addition, 71.7% of the respondents indicated that expected income from apiary farming influenced their participation. Land availability was reported by 66.7% of the respondents as an important factor, while support and encouragement from family members and friends were reported by 56.7% of the respondents. These findings indicate that financial resources, income opportunities, market conditions, land availability, and social support influence the extent to which youth participate in apiary farming.

5.2.2 Motivational Factors Encouraging Youth Participation in Apiary Farming

The study findings indicate that several factors motivated youth to participate in apiary farming. Access to start-up training and the availability of modern beehives were each identified by 75.0% of the respondents as important motivating factors. These findings suggest that youth are more likely to participate in apiary farming when they receive the knowledge and practical skills required to establish and manage apiaries and when they have access to improved production equipment.

The study findings reveal that 71.7% of the respondents were motivated by the low labour requirements associated with apiary farming. Environmental benefits were identified by 65.0% of the respondents, while government and non-governmental organization support motivated 63.4% of the respondents. Overall, the findings indicate that training, access to modern equipment, manageable labour requirements, environmental benefits, and institutional support encourage youth participation in apiary farming.

5.2.3 Challenges affecting Youth Participation in Apiary Farming

The findings revealed that youth faced several challenges that hindered their participation in apiary farming. Lack of capital was the most commonly reported challenge, with 81.7% of the respondents identifying it as a major hindrance. Inadequate knowledge and technical skills were reported by 75.0% of the respondents, indicating that limited technical capacity remains a major barrier to effective participation.

Pests and diseases affecting bees were reported by 73.3% of the respondents as a major challenge. Inadequate markets and low prices for honey and other bee products were reported by 68.3% of the respondents. Fear of bee stings affected 66.7% of the respondents, while theft of beehives and bee products was reported by 65.0% of the respondents. Land-related

challenges were reported by 60.0% of the respondents, while negative perceptions towards apiary farming were reported by 46.7% of the respondents.

The findings therefore demonstrate that youth participation in apiary farming is constrained by financial limitations, inadequate technical knowledge and skills, pests and diseases, weak market conditions, fear of bee stings, theft, land challenges, and negative perceptions. Addressing these challenges is essential for increasing and sustaining youth participation in apiary farming in Gweri Sub- County

5.3 Discussion of Findings

5.3.1 Socio-economic Factors

The findings of the study revealed that socio-economic factors significantly influenced youth participation in apiary farming in Gweri Sub- County, Soroti District. Lack of capital was identified as the most important factor, with 80.0% of the respondents reporting that inadequate financial resources influenced their participation. This finding suggests that although apiary farming may require relatively less land and labour compared to some other agricultural enterprises, initial investment is still necessary for acquiring beehives, protective equipment, harvesting materials, and other essential inputs. Youth with limited access to capital may therefore find it difficult to establish or expand apiary enterprises.

The findings further showed that 76.7% of the respondents considered the ability to combine apiary farming with other income-generating activities as an important factor influencing participation. This suggests that apiary farming is attractive to youth because it can be undertaken alongside other economic activities. The relatively low labour requirements of beekeeping allow youth to engage in other agricultural or non-agricultural activities while maintaining their apiaries.

Market demand for honey and other bee products was identified by 75.0% of the respondents as an important factor influencing participation. This indicates that youth are more likely to participate in apiary farming when they are confident that their products can be sold. Similarly, 71.7% of the respondents indicated that expected income influenced their participation. These findings suggest that the perceived economic benefits of apiary farming are important in encouraging youth to enter and remain in the enterprise.

Land availability was reported by 66.7% of the respondents as an important factor influencing participation. Although apiary farming does not require extensive land compared with some

other agricultural enterprises, suitable and secure locations are necessary for placing apiaries and ensuring access to flowering plants. In addition, 56.7% of the respondents reported that support and encouragement from family members and friends influenced their participation. This demonstrates that social support can contribute to youth participation by encouraging young people to engage in apiary farming and providing assistance in establishing and managing apiaries.

Overall, the findings indicate that youth participation in apiary farming is influenced by access to financial resources, the possibility of combining beekeeping with other activities, market opportunities, expected income, land availability, and social support. These socioeconomic factors therefore need to be considered when designing interventions aimed at promoting youth participation in apiary farming.

5.3.2 Motivational Factors

The study found that access to start-up training was one of the major factors motivating youth to participate in apiary farming, as reported by 75.0% of the respondents. This finding highlights the importance of knowledge and practical skills in enabling young people to establish and manage apiaries. Training can help youth acquire skills in hive management, colony management, harvesting, processing, and marketing of bee products, thereby increasing their confidence and interest in apiary farming.

The availability of modern beehives was also identified by 75.0% of the respondents as an important motivating factor. This suggests that access to improved equipment can encourage youth participation by making apiary farming more attractive and potentially improving productivity and the quality of bee products. Modern equipment may also reduce some of the difficulties associated with traditional methods of beekeeping.

The findings further showed that 71.7% of the respondents were motivated by the low labour requirements of apiary farming. This is an important factor for youth who may be engaged in other economic activities. The relatively low labour requirement makes apiary farming suitable as an additional source of income and allows youth to manage beekeeping alongside other activities.

Environmental benefits motivated 65.0% of the respondents, while government and nongovernmental organization support motivated 63.4% of the respondents. This indicates that some youths are attracted to apiary farming because of its contribution to environmental

conservation and because of the support provided through agricultural development programmes. Institutional support, including training, provision of equipment, extension services, and financial assistance, can therefore contribute to increased youth participation.

The findings demonstrate that youth participation is encouraged by access to knowledge, modern equipment, manageable labour requirements, environmental benefits, and institutional support. Strengthening these motivating factors may therefore contribute to increased and sustained youth participation in apiary farming in Gweri Sub- County.

5.3.3 Challenges Hindering Youth Participation in Apiary Farming

The study showed that lack of capital was the greatest factor hindering youths' participation in apiary farming, with 81.7% of the respondents identifying it as a major constraint. This finding demonstrates that limited access to financial resources can prevent youths from acquiring beehives, protective clothing, harvesting equipment, and other inputs required for effective apiary farming. It may also limit the ability of existing youth beekeepers to expand their enterprises.

Inadequate knowledge and technical skills were reported by 75.0% of the respondents. This finding indicates that some youth may be interested in apiary farming but lack the practical knowledge required to manage bee colonies effectively. Limited technical skills may affect hive management, disease control, harvesting, processing, and marketing of bee products.

Pests and diseases affecting bees were reported by 73.3% of the respondents as a major challenge. These problems can reduce colony strength, productivity, and the number of bee colonies maintained by farmers. The finding highlights the importance of strengthening extension services and providing youth with appropriate knowledge on the prevention and management of pests and diseases.

Inadequate markets and low prices for honey and other bee products were reported by 68.3% of the respondents. This suggests that difficulties in accessing reliable markets may reduce the profitability and attractiveness of apiary farming. Where producers receive low prices or lack reliable buyers, youth may be discouraged from investing in the enterprise.

Fear of bee stings was reported by 66.7% of the respondents, while theft of beehives and bee products was reported by 65.0%. Fear of bee stings may discourage young people from entering or actively managing apiaries, particularly where they lack appropriate protective equipment and practical training. Theft may also reduce the security and profitability of apiary enterprises.

Land-related challenges were reported by 60.0% of the respondents, while negative perceptions towards apiary farming were reported by 46.7%. These findings suggest that access to suitable locations and community attitudes may also influence the willingness of youth to participate in apiary farming.

Overall, the findings show that youth participation in apiary farming is hindered by financial constraints, inadequate technical knowledge, pests and diseases, weak market conditions, fear of bee stings, theft, land-related challenges, and negative perceptions. Addressing these challenges through improved access to finance, training, extension services, equipment, markets, and security would contribute to increased youth participation in apiary farming.

5.4 Conclusions

The study concludes that youth participation in apiary farming in Gweri Sub- County, Soroti District is influenced by a combination of socio-economic factors, motivational factors, and challenges that hinder effective participation.

With regard to socio-economic factors, the study concludes that access to capital is a major determinant of youth participation in apiary farming. The ability to combine apiary farming with other income-generating activities, market demand for honey and other bee products, expected income, land availability, and support from family members and friends also influence youth participation. These factors determine the ability and willingness of youth to establish, manage, and sustain apiary enterprises.

The study further concludes that access to start-up training and modern beekeeping equipment are important motivating factors for youth participation in apiary farming. The low labour requirements associated with apiary farming, environmental benefits, and support from government and non-governmental organizations also encourage youth participation. This indicates that youth are more likely to engage in apiary farming when they have the necessary knowledge, skills, equipment, and institutional support.

However, the study concludes that youth participation in apiary farming is significantly hindered by several challenges. The most prominent challenges include lack of capital, inadequate knowledge and technical skills, pests and diseases, inadequate markets and low prices, fear of bee stings, theft, and land-related challenges. Negative perceptions towards apiary farming also affect participation among some youth.

Therefore, the study concludes that increasing youth participation in apiary farming requires a comprehensive approach that addresses both the factors encouraging participation and the barriers limiting it. Improving access to affordable finance, practical training, modern beekeeping equipment, extension services, reliable markets, and secure apiary sites would enhance the ability of youth to participate effectively and sustainably in apiary farming in Gweri Sub- County, Soroti District.

5.5 Recommendations

Based on the findings and conclusions of the study, the following recommendations are made to promote and strengthen youth participation in apiary farming in Gweri Sub- County, Soroti District.

5.5.1 Government and Local Government Authorities

The Government, through relevant agricultural departments and local government authorities, should strengthen programmes that promote youth participation in apiary farming. This should include providing or facilitating access to affordable financing, start-up support, modern beekeeping equipment, and practical training. Since lack of capital was identified as the major challenge hindering youth participation, financial support should be made accessible through youth-focused agricultural programmes and other appropriate financing mechanisms.

The Government should also strengthen agricultural extension services in Gweri Sub- County. Extension workers should provide regular practical training on apiary establishment, hive management, colony management, pest and disease control, safe harvesting, processing, value addition, and marketing of bee products. Such training would help address the inadequate knowledge and technical skills reported by many respondents.

5.5.2 Agricultural Extension Workers

Agricultural extension workers should provide regular and practical apiary training to youth. The training should emphasize the proper use of modern beekeeping equipment, management of bee colonies, prevention and control of pests and diseases, safe handling of bees, harvesting, processing, storage, and marketing of honey and other bee products.

Extension workers should also encourage youth to participate in farmer groups and provide follow-up support to help them apply the knowledge and skills acquired. Regular technical guidance would increase youth confidence and improve the sustainability of apiary enterprises.

5.5.3 Financial Institutions and Development Partners

Financial institutions and development partners should develop affordable and accessible financial products for youth engaged in apiary farming. Loan conditions should be appropriate for young farmers, taking into consideration the nature of apiary farming and the time required before returns are realized.

Development partners should also support youth apiary groups through training, provision of modern beekeeping equipment, business development support, and linkages to reliable markets. Such interventions would help address the financial and equipment-related barriers identified by the study.

5.5.4 Youth and Youth Groups

Youths should take advantage of available training opportunities and actively participate in farmer groups and cooperative activities. Working in groups can enable youth to access training, financial services, equipment, extension services, and markets more easily.

Youth should also diversify their sources of income by combining apiary farming with other appropriate economic activities while gradually expanding their apiary enterprises. They should adopt recommended beekeeping practices, use appropriate protective equipment, maintain proper hive management, and take measures to prevent theft and protect their apiaries.

5.5.5 Farmer Groups and Cooperatives

Farmer groups and cooperatives should strengthen collective action among youth involved in apiary farming. They should support members in bulk purchasing of beekeeping equipment, sharing knowledge and experiences, accessing financial services, and collectively marketing honey and other bee products.

Collective marketing may help youth obtain better prices and reduce some of the challenges associated with inadequate markets and low prices. Farmer groups should also promote information sharing on pest and disease management and other technical aspects of apiary farming.

5.5.6 Community Leaders and the General Community

Community leaders and members of the community should support and encourage youth participation in apiary farming. Negative perceptions towards apiary farming should be addressed through community sensitization and awareness programmes that highlight the economic and environmental benefits of beekeeping.

Communities should also support measures that improve the security of apiaries and reduce theft of beehives and bee products. Community cooperation is important in creating a supportive environment for youth to establish and sustain apiary enterprises.

5.5.7 Honey Processors and Market Actors

Honey processors, traders, and other market actors should strengthen linkages with youth apiary farmers to improve access to reliable markets. They should promote fair and transparent pricing and support improvements in the quality, packaging, processing, and value addition of honey and other bee products.

Improved market access and better returns from apiary farming would increase the attractiveness of the enterprise and encourage more youths to participate.

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Appendices

Appendix 1

Table 2 showing the Budget for the research

Item	Description	Cost
Personnel	District entomologist, sub county agricultural officer, local youth leaders	150,000
Equipment	Software, food	60,000
Transport	Travel expenses for field work and conferences	70,000
Data collection	Cost of survey, questionnaires, field work and interviewers	80,000

Miscellaneous	Printing, administrative costs	80,000
Total		440,000

Appendix 2

QUESTIONNAIRE FOR YOUTHS IN GWERI SUB-COUNTY, SOROTI DISTRICT

Title: Assessment of Factors Influencing Youth Participation in Apiary Farming in Gweri Sub-County, Soroti District

Introduction:

Dear respondent, I am OSOGOR MORRIS, a student of Busitema University pursuing a Bachelors degree of Science Education in Agriculture double main carrying out research entitled assessment of factors influencing youth participation in apiary farming, a case study of Gweri Sub County, Soroti District.

You have been selected to participate in this study; your participation is voluntary. The information you give is very valuable and will be kept with maximum confidentiality and will

be used purely for academic reasons only and that is why your name is not stipulated anywhere in this questionnaire, so I request you answer these questions truthfully.

SECTION A:

Background Information (Demographics)

1. Age bracket:

☐ 15-20 years ☐ 21-25 years ☐ 26-30 years ☐ 31-35 years

2. Gender:

☐ Male ☐ Female

3. Highest level of education:

☐ No formal education. ☐ Primary. ☐ O' Level (S1-S4).
☐ A' Level (S5-S6). ☐ Tertiary/University

4. Main occupation:

☐ Crop farming only ☐ Livestock farming only ☐ Apiary farming only [☐ Mixed farming (crops + livestock) ☐ non-farming business/job.

SECTION B:

Objective 1: Current Status of Youth Participation in Apiary Farming

1. Do you currently practice apiary farming (bee keeping)?

☐ Yes ☐ No (If No, skip to Section

D)

2. How long have you been engaged in apiary farming?

☐ Less than 1 year ☐ 1-3 years ☐ 4-6 years ☐ Over 6 years

3. How many bee hives do you currently own?

☐ 1-5 ☐ 6-10 ☐ 11-20 ☐ Above 20

4. How often do you harvest honey?

☐ Once a year ☐ Twice a year ☐ Three times a year ☐ Not yet harvested

5. On average, how many kilograms of honey do you harvest per hive per year?

☐ Below 5 kg ☐ 5-10 kg ☐ 11-15 kg ☐ above 15 kg ☐ Not sure

6. Do you sell honey or other bee products (wax, propolis)?

☐ Yes, regularly ☐ Yes, occasionally ☐ No, only for home use ☐ No, not yet

SECTION C:

Objective 2: Motivational Factors Influencing Youth Participation

Please indicate your level of agreement: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

Motivational factors	1	2	3	4	5
11. High market demand for honey in Soroti district					
12. Low labor requirement compared to crop farming					
13. Availability of start-up training on bee keeping					
14. Access to modern beehives (e.g., Kenya Top Bar, Langstroth)					

15. Beekeeping is environmentally friendly and promotes trees					
16. Influence from family or friends who keep bees					
17. Honey farming provides quick income within a year					
18. Land availability for placing hives					
19. Support from NGOs or government (e.g., NAADS, Operation Wealth Creation)					
20. I can practice beekeeping alongside school or other work					

SECTION D:

Objective 3: Factors Hindering Youth Participation

Please indicate your level of agreement: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

Hindering factors	1	2	3	4	5
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21. Fear of being stung or allergic reactions to bee stings					
22. Lack of capital to buy hives and protective gear					
23. Pests and diseases (ants, wax moths, hive beetles)					
24. Inadequate knowledge / skills in modern beekeeping					
25. Lack of water near apiary sites during dry season					
26. Inadequate market for honey or low prices					
27. Beekeeping is seen as an old person's activity					
28. Lack of access to honey processing equipment					
29. Theft of hives or honey					
30. Land conflicts or lack of land ownership					

SECTION E: General Suggestions (Optional but helpful)

1. What one thing would most encourage you to start or expand bee farming? (Tick one)

- | | | |
|--|---|--|
| ☐ Free training | ☐ Free or subsidized hives | ☐ Guaranteed market |
| ☐ Start-up loan | ☐ Protection from theft | |

Thank you for your participation!

