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COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

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DEPARTMENT OF AGRIBUSINESS AND NATURAL RESOURCE ECONOMICS

GENDER PARTICIPATION AND PROFITABILITY OF BULL FATTENING AMONG SMALLHOLDER FARMERS IN KASAGAMA SUB-COUNTY, LYANTONDE DISTRICT, UGANDA

BY

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DECLARATION

I Nagasha Esther declare that this is original work under the topic Gender Participation and profitability of bull fattening among small holder farmers in Kasagama Sub-county Lyantode district and has never been presented to any University or institution for the award of any degree or related course.

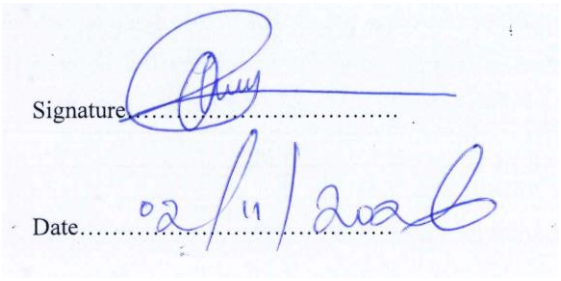
Signature.....Nagasha Esther

Date.....2nd/11/2026

APPROVAL

I certify that this research report under this topic Gender participation and profitability of bull fattening among small holder farmers in Kasagama Subcounty, Lyantonde district has been under my supervision and it is ready for submission to Makerere University.

Mr. AUGUSTINE OLOO



DEDICATION

I dedicate this research report to my dear parents Mr. Kato George and Mrs. Kemirembe Jackline and Tandeka Isaac my beloved brother and Asasira Pius for the continuous support throughout the process of this research. May the almighty God bless you for me.

ACKNOWLEDGEMENT

I honour and thank Almighty God for the guidance, grace, protection and provision throughout the entire period of this research. My gratitude is extended to my parents Mr. and Mrs. Kato George and Tandeka Isaac my beloved brother for the individual support given to me during the completion of my degree. The continuous support given and courage given to me gave me a privilege of continuing with my studies. I would wish to externally extend my gratitude to Dr. Augustine Oloo for the time given to me for academic professional guidance and advice in organizing this research report. The patience and dedication towards the successful completion of my research report. May the Living God reward you fully. I sincerely acknowledge my friends especially Asasira Pius for guiding me throughout this time of research.

LIST OF ABBREVIATIONS

UGX	Uganda shillings
Kg	Kilograms
M	Male
F	Female

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ABSTRACT

Bull fattening is an important livestock enterprise in Uganda because it provides opportunities for farmers to improve cattle value, generate income, and support household livelihoods. However, men and women may not benefit equally from this enterprise because of differences in access to livestock resources, participation in management activities, decision-making, and control over income. This study examined gender participation and profitability of bull fattening among smallholder farmers in Kasagama Sub-County, Lyantonde District, Uganda.

The study adopted a cross-sectional descriptive research design using both quantitative and qualitative approaches. Primary data were collected from 60 respondents, comprising 29 men and 31 women, using structured questionnaires. The data were analyzed using descriptive statistics and regression analysis to examine respondents' characteristics, gender participation, enterprise performance, and factors associated with profitability.

The findings showed that respondents had a mean age of approximately 40 years and an average of six years of experience in bull fattening. Women constituted 51.7% of the respondents, compared with 48.3% for men. However, participation in the enterprise did not necessarily translate into equal control over livestock assets and business decisions. Qualitative responses indicated that men often retained greater influence over livestock ownership, sales, and final decision-making, while women contributed to routine management act. The enterprise was generally profitable, with an average reported profit of approximately UGX 13.6 million and a benefit-cost ratio of about 1.35. Male-managed enterprises reported higher average profits than female-managed enterprises. The regression results identified factors including the number of bulls fattened, feed costs, access to veterinary services, and extension services .

The study concludes that bull fattening offers income-generating opportunities for smallholder farmers, but gender differences in access to resources and decision-making may influence how these benefits are shared. It recommends strengthening veterinary and extension services, improving access to affordable credit and quality feeds, providing practical training, and promoting women's access to livestock ownership, market information, and enterprise decisions.

Key words. Gender, profitability, bull fattening, participation, feeder bulls, men, women, return on investment, extension gender roles.

CHAPTER ONE
INTRODUCTION

1.1. Background of the study

Agriculture remains the backbone of Uganda's economy, employing the majority of the population and contributing significantly to national income and food security for decades that Over 80 percent of Uganda's households and 85 percent of the people live in rural areas, and most of these depend on agriculture for their primary source of income(Rogerson et al, 2010). Among the agricultural subsectors, livestock production plays a major role in supporting household livelihoods, employment, and rural development. The livestock subsector recorded a growth rate of 8.8% in the financial year 2024/25, compared to 7.9% in the previous financial year, indicating increasing importance of livestock enterprises in Uganda's economy (MAAIF, 2024),

Within the livestock subsector, cattle production was one of the most important economic activities, particularly in Uganda's cattle corridor districts. Bull fattening, which involves intensive feeding and management of bulls to improve body weight and meat quality before sale, has emerged as an important commercial enterprise for increasing beef production and household incomes. Uganda's beef production increased to approximately 276,892 metric tons in 2024 (MAAIF, 2024). Government interventions such as the distribution of 340 beef breeding bulls through the National Agricultural Advisory Services (NAADS) demonstrate the government's commitment to transforming smallholder farmers from subsistence agriculture to commercial livestock production.(NAADS, 2024)

The profitability of bull fattening largely depends on proper feeding, veterinary care, and effective management practices. Bulls require balanced high-energy diets containing approximately 13% crude protein and intensive feeding for about 90–150 days to achieve desirable weight gains and market value (Jaguza Report under MAAIF, 2021). However, many smallholder farmers face challenges in meeting these technical requirements because of high feed costs, limited veterinary services, inadequate extension support, and insufficient access to credit facilities. Gender plays a significant role in livestock production systems in Uganda. Women contribute substantially to cattle management activities such as feeding, watering, cleaning shelters, and monitoring health.

Studies indicate that women contribute nearly 70% of labor in livestock-related activities; however, they often have limited control over livestock resources, marketing decisions, and income generated from livestock enterprises (UBOS, 2024). Additionally, women in rural areas frequently face constraints related to land ownership, access to formal credit, training opportunities, and agricultural extension services. The World Bank (2025) reports that women's control over profits from agricultural enterprises remains significantly lower than that of men, limiting their economic empowerment and participation in commercial agriculture.

Lyantonde District is located within Uganda's cattle corridor and is highly suitable for livestock farming because of its favorable climatic conditions and long-standing cattle-keeping culture. According to the Uganda Bureau of Statistics (UBOS, 2024), the district had a population of approximately 72,366 males and 60,651 females. Despite the large involvement of women in agricultural production, their participation in profitable livestock enterprises remains limited. In many households, men controlled ownership of productive assets such as land and livestock, while women and youth have restricted ownership and decision-making rights.

Kasagama Sub-County, one of the livestock-producing areas in Lyantonde District, was dominated by smallholder farmers who depend mainly on subsistence agriculture. More than 80% of households in the district rely on subsistence farming for their livelihoods (UBOS, 2024). Although bull fattening presents an opportunity for income generation and poverty reduction, many farmers operate on small and fragmented land holdings, limiting expansion of commercial livestock production. Women were particularly disadvantaged because they have lower access to production resources, extension services, and government support programs such as the Parish Development Model (PDM).

The study was conducted in Kasagama Sub-County, located in Lyantonde District in southwestern Uganda. The district lies within Uganda's cattle corridor, an area characterized by extensive livestock production and favorable conditions for cattle rearing. It was specifically selected for several reasons related to the study objectives.

First, bull fattening is one of the major livelihood activities practiced by smallholder farmers in the area locally known as "okuliisa endaaho", making it suitable for studying profitability among livestock farmers. The sub-county has a relatively high concentration of cattle farmers involved in both traditional and commercial livestock production systems.

Second, the area provided an appropriate setting for examining gender participation in bull fattening because both men and women actively participate in livestock production activities. Women are commonly involved in feeding, watering, cleaning animal shelters, and monitoring animal health, while men are more involved in livestock ownership, marketing, and financial decision-making. This gender division of labor makes the area suitable for analyzing gender-specific roles within the bull fattening value chain.

Third, Kasagama Sub-County benefited from government agricultural and livestock development programs such as the Parish Development Model (PDM), NAADS, and other livestock support interventions. Despite these interventions, smallholder farmers, especially women, still face challenges such as limited access to land, credit, veterinary services, extension services, and training opportunities. This made the area appropriate for examining factors influencing participation and profitability in bull fattening. Additionally, the sub-county consisted of parishes such as Katebe, Kabuteetera, Kasagama Town Council, and Karagala, where livestock production forms an important source of household income and employment. Therefore, the area provided adequate respondents and relevant information required for achieving the study objectives.

Uganda's National Planning Authority through the Third National Development Plan (NDPIII) emphasizes agro-industrialization and prioritizes the beef value chain in cattle corridor districts such as Lyantonde. However, the National Planning Authority (2020) notes that the livestock sector continues to perform below expectations because of poor feeding practices, inadequate veterinary management, and dependence on traditional production systems, all of which reduce productivity and profitability.

Despite the growing importance of bull fattening in Uganda, limited research has specifically examined how gender participation influences the profitability of bull fattening enterprises among smallholder farmers in Kasagama Sub-County, Lyantonde District.

Understanding gender differences in access to resources, participation levels, decision-making, and profitability is important for designing interventions that promote inclusive and sustainable livestock development. Therefore, this study seeks to assess gender participation and profitability of bull fattening among smallholder farmers in Kasagama Sub-County, Lyantonde District, Uganda.

1.2. Problem Statement

Despite the continued growth of Uganda's livestock sector, participation and profitability in commercial livestock enterprises such as bull fattening remain uneven between men and women. Women contribute a significant proportion of labor in livestock production activities including feeding, watering, cleaning animal shelters, and monitoring animal health. However, their participation is often limited to routine husbandry activities, while men commonly dominate ownership of livestock, decision-making, marketing, and control over income generated from livestock enterprises. As a result, women's participation in bull fattening may not translate into equal economic benefits and profitability. Women farmers frequently face greater challenges in accessing these resources compared to men, which may reduce their productivity, increase production costs, and ultimately lower their profitability from the enterprise.(Nalwanga et al., 2025)

The Government of Uganda implemented programs such as the Uganda Women Entrepreneurship Program (UWEP) and the Generating Growth Opportunities and Productivity for Women Enterprises (GROW) project to improve women's participation in income-generating activities and strengthen their economic empowerment. Despite these interventions, women in rural areas such as Kasagama Sub-County continue to experience limited participation in commercial livestock production and may earn lower profits from bull fattening enterprises compared to men because of inadequate access to credit, land ownership, training, and extension services which increases their production costs and reduces productivity, leading to lower profitability. Although previous studies and government reports have examined livestock production and enterprise profitability in Uganda, there is still limited empirical information specifically comparing the participation and profitability of male and female smallholder farmers engaged in bull fattening. Existing studies largely provide general profitability analyses without clearly showing how gender differences in resource access, participation levels, and decision-making influence profitability outcomes at the household level. Therefore, this study was seeking to examine gender participation and profitability of bull fattening among smallholder farmers in Kasagama Sub-County, Lyantonde District.

The study assessed the level of participation of men and women in bull fattening activities, compare profitability between male- and female-managed enterprises, and identify gender-related challenges affecting profitability. The findings will provide useful information for policymakers, extension workers, and development partners in designing gender-sensitive interventions aimed at improving inclusive participation and profitability in commercial livestock production.

1.3. General Objective.

To assess the Gender Participation and Profitability of Bull Fattening Among Smallholder Farmers in Kasagama Sub-County, Lyantonde District, Uganda.

1.4. Specific objectives.

1. To characterize men and women engaged in bull fattening
2. To evaluate gender-specific roles in the bull fattening value chain.
3. To examine factors influencing the profitability in the bull fattening for smallholders.

1.5. Research Hypotheses

- Null Hypothesis: There is a significant difference in profitability between male and female smallholder farmers engaged in bull fattening in Kasagama Sub-County.

1.6. Significance of the Study

The study provided information on the costs and benefits (BENEFIT –COST analysis) of bull fattening and will help farmers improve management practices to increase profits. It will also help women farmers identify better ways of managing livestock enterprises efficiently. Furthermore, the study will also provide evidence that may encourage microfinance institutions to develop gender-sensitive credit services that can support women who lack land titles and other forms of collateral.

CHAPTER TWO: LITERATURE REVIEW

2.1. Gender participation in livestock production

A study in Mali found out that the empowerment of women livestock farmers was not systematic with Innovation Platforms(IPs), but rather depends on gender relations and dynamics in the specific social contexts in which these IPs were implemented (Gning et al., 2025). Furthermore, research in sub-Saharan countries highlighted the critical role of women in sheep and goat production in sub-Saharan Africa and globally. It highlights their significant contributions to food security and socio-economic development (Elodie dimomi et al, 2025). The findings intended to inform policies and programs aimed at empowering women and promoting gender equality in the agricultural sector. But the equality intended could fail here because cattle are considered more valuable and show dominance of whoever owns them especially in African setting.

International studies conclusions may not be applicable for Uganda's context due to cultural and social differences so studies on gendered livestock ownership in Uganda found that livestock asset ownership is shaped by gendered rights and household power relations, meaning that control over livestock is not always equal even when both men and women contribute to production. Other studies from the rift valley area show that there is a distinct division of tasks and roles between men and women in livestock management in the different ruminant production systems in Uganda (Hillesland et al., 2023). Division of roles can influence disease control and prevention (Namatovu et al., 2025), the study adds that although women had fewer concerns about vaccine side effects, they still faced constraints, such as mistrust of animal health workers, limited decision-making powers, domestic workload, and inability to access vaccination points. The study findings can guide appropriate, gender-responsive interventions tailored by production system for controlling ruminant diseases in Uganda.

2.2. Profitability of cattle fattening among smallholder farmers

In Teso and Karamoja regions that community-based breeding schemes as a cost-effective method for enhancing the productivity of indigenous livestock breeds (Lwiza et al., 2024). While such projects offer benefits, their success varies in different locations.

The study also analyses challenges such as limited access to veterinary services, high maintenance costs, and the failure of the exotic breeds to adapt to extreme temperatures and drought conditions hinder project success and continuity It also recommends promoting income-generating activities within the groups, strengthening leadership structures, and fostering member commitment to collective efforts.

Another study also supports the above that that the objectives of the breeding programs were largely achieved. From the results, integrating pasture improvement interventions into Community Based Bull Breeding Programs (CBBPs) to enhance the overall performance and productivity of cattle within pastoral systems. Additionally, it is crucial to strengthen government veterinary services by increasing the availability of veterinarians, providing access to free veterinary drugs, and implementing effective market regulation to ensure fair prices for cattle and their products (Ssekibaala et al., 2025). F Alinda, (2016) also found out that choice of beef bought by consumers and influenced their willingness to pay was the driver of bull fattening profitability The study concluded that there is a high willingness to pay for quality beef. This information may also be used by the various beef value chain actors to make improvements in their activities in an effort to meet consumer choices with different levels of willingness to pay.

Studies on beef cattle profitability commonly use gross margin as a practical measure because many smallholder farmers do not keep detailed depreciation records. (Nkadimeng et al., 2021) for example, used gross margin analysis to estimate returns among cattle farmers, showing that gross margin is widely applied in livestock enterprise analysis(Nkadimeng et al., 2021). Evidence from smallholder beef cattle farms in Africa shows that cattle fattening can generate profit, but profit efficiency depends on feed costs, herd size, education, experience, access to extension, and market conditions. *Jimoh, (2023*) found that smallholder beef cattle farmers earned profit per animal, but profitability varied depending on farm-level and socioeconomic factors(Hillesland et al., 2023)

In Uganda, profitability is affected by seasonal beef prices. Beef traders may earn higher profits during festive seasons compared to ordinary periods, which suggests that timing of sale can influence returns to farmers.(Kyayesimira et al., 2018) other studies tailored profitability to breeding systems where the estrus synchronization protocols were used in Uganda. Estrus synchronization was more common in dairy exotic cattle than in beef exotic or indigenous cattle. Pregnancy rates with synchronized AI were lower in B. indicus than B. Taurus herds.

2.4. Gender roles in cattle and beef production

Gender roles in cattle production vary by community, culture, household structure, and production system. In many African smallholder systems, men commonly handle animal purchase, sale, movement, breeding decisions, and negotiations with traders, while women may contribute to feeding, watering, cleaning shelters, collecting fodder, and caring for sick animals. Uganda's beef value chain, evidence suggests that men play a major role in cattle trading and marketing, while women's participation is less visible. This gendered structure can create unequal benefits because the person who controls the sale often controls the income(Kyayesimira et al., 2018). For bull fattening in Lyantonde District, gender roles may appear in activities such as selection of bulls, feeding, watering, veterinary care, record keeping, sale negotiation, use of income, and reinvestment. A gender-sensitive study should therefore not only ask "who participates?" but also "who decides?", "who owns?", "who earns?", and "who controls the profit?"

2.5. Gender access to resources, and profitability

Studies from Malawi, show that women's decision-making is positively associated with farm production diversity and with household dietary diversity(Yimer et al., 2025). Furthermore, women's decision-making increases the positive association between farm production diversity and dietary diversity. We also differentiate between different domains of decision-making, including agricultural production, market sales, cash income control, and food purchases. The results suggest that strengthening women's agency can make smallholder farming more nutrition-sensitive through multiple channels.(Yimer et al., 2025) Indonesian researchers also showed that only 3.6% of women are empowered in livestock production, compared to 33.34% in agriculture. Sumbawa in NTB had the highest livestock empowerment at 5.7%, followed by South Kalimantan (4.6%) and Lombok (1.1%). Key drivers of empowerment were income control, resource access, and control over workload.

These findings highlight the need for tailored capacity-building strategies to enhance technology adoption and improve household well-being. (Villano et al., 2025) In the cattle corridor, gender inequalities are also linked to climate vulnerability.

A study on Uganda's cattle corridor found persistent gender disparities in asset ownership, expenditure priorities, and decision-making, which affect household resilience to drought. Since bull fattening depends on feed and water availability, such gender inequalities may indirectly affect profitability by limiting some farmers' ability to respond to drought, feed scarcity, and disease outbreaks (Nalwanga et al., 2025). Further studies in south western Uganda explored the distinct roles, challenges, and needs of women and men in the dairy value chain, revealing that while both genders had access to resources, their levels of control varied significantly. In many family units, there was either reduced or joint control over resources, indicating complex power dynamics in resource management. The findings underscored that opportunities exist for both women and youth (boys and girls) to engage in various activities along the dairy value chain, which can diversify employment and livelihood options (Kakungulu & Ikendi, 2025)

2.6. Gender and decision-making in livestock households

Decision-making is one of the most important gender issues in livestock production. A person may participate in feeding or caring for animals but still lack power to decide when to sell, how much to sell at, and how income is used. This distinction is important in bull fattening because profitability is not only created during production but also realized during marketing. Further Studies on women's agricultural decision-making show that women's participation in household agricultural decisions varies and is shaped by marital relations, ownership, access to income, and social norms(Tajudeen et al., 2025). In cattle-related enterprises, men often dominate decisions because cattle are culturally and economically considered high-value assets. This may limit women's control over income even when they provide labor. Therefore, a study on gender participation and profitability should examine decision-making over bull purchase, feeding strategy, veterinary treatment, sale timing, buyer selection, price negotiation, and use of profits. (Kyayesimira et al., 2018)

2.8. Research gap

Although considerable research has been conducted on gender and livestock production in sub-Saharan Africa and Uganda, existing studies have largely focused on livestock ownership, household decision-making, disease management, asset control, and general participation in agricultural production rather than on bull-fattening enterprises specifically.

Studies by Hillesland et al. (2023) examined gendered rights over livestock assets in Ugandan smallholder households, while (Namatovu et al., 2025) investigated gender roles in ruminant disease management.

Similarly, (Nalwanga et al., 2025) explored gender disparities in asset ownership, expenditure patterns, and decision-making within Uganda's cattle corridor. However, these studies primarily analyze livestock at a broad level and do not specifically examine the participation of men and women in bull-fattening enterprises. Consequently, little empirical evidence exists regarding the specific roles, responsibilities, constraints, and opportunities experienced by different gender groups in bull fattening, particularly among women, youth, and female-headed households who are often underrepresented in livestock commercialization studies. This leaves an important knowledge gap concerning how gender influences participation in one of the most commercially important livestock enterprises in Uganda.

Furthermore, previous research on livestock profitability has predominantly concentrated on technical and economic performance indicators without adequately considering gender dimensions. For instance, studies conducted in Malawi and the Czech Republic evaluated the biological performance, costs, returns, and economic efficiency of bull-fattening operations, identifying factors such as feed costs, weight gains, purchase prices, and selling prices as determinants of profitability (Agyemang et al., n.d.), (Jan syrucek et al, 2017). Likewise, beef value chain studies in Uganda have focused on marketing channels, actors, and value addition opportunities (Kyayesimira et al., 2018). However, very few studies have integrated gender analysis with profitability assessment to establish how differences in ownership, labor allocation, decision-making authority, access to productive resources, and control over livestock income influence the profitability of bull-fattening enterprises.

As a result, critical questions remain unanswered regarding whether enterprises managed by men, women, or jointly by households achieve different profitability outcomes and how gender-related factors contribute to enterprise performance. This methodological gap limits the development of gender-responsive interventions aimed at improving productivity and profitability in livestock enterprises. There is also a notable lack of location-specific evidence on gender participation and profitability of bull fattening within Lyantonde District despite its strategic importance within Uganda's cattle corridor.

Existing studies have been undertaken in districts such as Kiruhura, Mbarara, Nakaseke, Nakasongola, and other livestock-producing regions of Uganda, while broader analyses have focused on national or regional livestock systems (Kyayesimira et al., 2018), (Nalwanga et al., 2025), (F Alinda, 2016). Yet socioeconomic conditions, market opportunities, cultural norms, gender relations, resource endowments, and production practices differ considerably across locations. Consequently, findings from other districts may not accurately reflect the realities of smallholder bull-fattening enterprises in Lyantonde District. The absence of localized evidence creates a significant contextual gap that constrains policymakers, development practitioners, and livestock stakeholders from designing interventions tailored to the specific needs and challenges of farmers in the district. Therefore, this study seeks to address these gaps by examining gender participation and profitability of bull fattening among smallholder farmers in Lyantonde District, thereby generating context-specific evidence to inform policy and practice.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the systematic procedures that were used to achieve the study objectives. it presents the research design, study area, target population, sampling techniques, data collection methods, and data analysis procedures tailored to assessing gender participation and the profitability of bull fattening in Kasagama.

3.2 Research Design.

The study employed a cross-sectional descriptive research design using both qualitative and Quantitative methods. The qualitative approach helped generate deeper understanding of gender-specific roles, challenges, decision-making patterns, and resource access among male and female farmers. The quantitative approach was used to calculate profitability through gross margin analysis, compare profitability between male and female farmers, and determine the relationship between socio-economic factors and participation in bull fattening.

3.3 Study Area.

Kasagama subcounty is located in the North-West of Lyantonde district. Neighboring subcounties are Lyantonde, Kaliiro and Mpumudde. Livestock production is one of the major economic activities carried out in the area with a large proportion conducting the free-range system. Cross breeds of cattle are the most predominant ones reared with a few traces of exotic breeds. The semi-arid climate dictates this choice of breed because local breeds are the ones that can survive and get tolerant to these harsh dry seasons and hot temperatures.

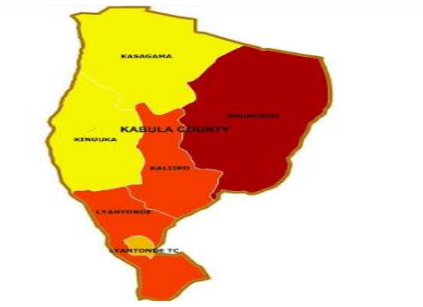


Figure 1: Map of Lyantonde showing Kasagama sub county location.

3.4.1 Target Population

The study targets smallholder farmers (both male and female) actively engaged in bull fattening for at least one production cycle (3–6 months) within Kasagama. A sample size of approximately 50–70 farmers were selected to ensure statistical significance. These included, male bull fattening farmers, female bull fattening farmers, and livestock extension workers where necessary.

This was determined using the Yamane's formular.

n= N/1+N(e)^2

n: required sample size, N: total population size, e: margin of error. (0.05 for 5%)

3.4.2. Sampling

Sampling is the process of selecting a smaller group of individuals or respondents from a larger population to represent the whole population in a study.

Sampling Technique

Random Sampling: The farmers were selected at random in the area of study to avoid bias. Simple random sampling was used to select individual farmers from each gender category. Lists of bull fattening farmers were obtained with the help of local leaders and extension officers, after which respondents were selected randomly. This method gave every farmer an equal chance of being selected and helps minimize selection bias. The technique was suitable because it improves fairness, objectivity, and representativeness of the sample.

3.5 Data Collection Methods and Tools

3.5.1 Structured Questionnaires

Structured questionnaire was the main tool for collecting primary quantitative data from farmers. The questionnaires captured information on: socio-economic characteristics such as age, education level, household size, and land ownership, gender roles in bull fattening activities, access to credit, extension services, and training, production costs such as purchase of bulls, feeds, drugs, labor, and water, revenue obtained from sale of bulls, and challenges affecting profitability and participation. The questionnaires mainly contained closed-ended questions to facilitate quantitative analysis, although a few open-ended questions included to obtain additional explanations from respondents.

3.6. Data Analysis

Data collected from the field, was entered, and analyzed using statistical software called SPSS. Descriptive statistics such as; frequencies, percentages, means, and tables were used to summarize respondent characteristics and gender participation in bull fattening activities.

3.6.1. Objective 1: To characterize men and women in bull fattening

Descriptive statistics such as frequencies, percentages, means, and tables were used to characterize male and female farmers engaged in bull fattening in Kasagama Sub-County.

The analysis focused on selected socio-economic characteristics that are expected to influence participation and profitability in bull fattening enterprises.

The following parameters were analyzed:

	Parameter	Type of data	measurement
i)	Age of farmers	Age groups in ranges from 18 years to over 100 years	Childhood age, working age and elderly age.
ii)	Education level	Various levels of education from primary, secondary, and tertiary levels.	The respondents were classified as literate or illiterate.
iii)	Land ownership	Acreage of land used for the enterprises and the type of tenancy.	ownership was either landlord, tenant or leasing terms.
iv)	Herd size	Numbers of cattle heads one owned	Farmers ranged from small scale to medium number in terms of herd size.
v)	Access to credit	The interest rate and the source of credit plus the security requirements for getting the funds.	It was either limited access of full access depending on the factors like collateral and relationship.

3.6.2. Objective 2. Evaluation of gender roles in bull fattening

This objective examined and compared the specific roles performed by men and women at different stages of the bull fattening value chain.

Understanding these roles was important because participation in livestock production does not necessarily imply equal involvement in decision-making, ownership of resources, or control over income. The analysis helped identify gender-based divisions of labor and their potential influence on enterprise profitability.

Data was analyzed using descriptive statistics such as frequencies, percentages, cross-tabulations, charts, and tables to compare the participation of men and women in various bull fattening activities.

The following gender role dimensions were assessed: ownership of bulls and productive assets, acquisition and selection of bulls, feeding and management, animal health management, housing and general husbandry practices and labor contribution in activities.

3.6.3 Objective 3: Factors Influencing profitability of bull fattening enterprises.

To determine the influence of gender participation on profitability of bull fattening, multiple linear regression analysis was performed using SPSS software version 18. Gross margin was used as the dependent variable, while gender participation and selected socio-economic characteristics were included as explanatory variables. The regression coefficients indicated the magnitude and direction of influence of each variable on profitability of which factors like credit access, education, extension services, training, land ownership significantly predict a woman's participation in commercial fattening. Statistical significance assessed at a 1%, 5%, and 10% level of significance. Profitability was analyzed using Gross Margin Analysis. The gross margin will be calculated as: $GM=TR-TVC$. Where:

GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Costs

Total revenue will be calculated as: $TR=Q\times P$. Where:

Q = quantity sold

P = selling price per bull

Total variable costs included: purchase cost of bulls, feeds, veterinary drugs, water, transport, and hired labor. Gross margins for male and female farmers was then compared to determine differences in profitability between genders.

3.7 Ethical Considerations

- **Informed Consent:** Participants were briefed on the study's purpose before signing consent forms.
- **Confidentiality:** Data was anonymized to protect the identity of the farmers.
- **Approval:** Permission were sought from the Lyantonde District Chief Administrative Officer (CAO) and local LC1 chairpersons.

CHAPTER FOUR
RESULTS AND DISCUSSIONS

4.0 Introduction.

This chapter presented the results of the study on the profitability of bull fattening enterprises in livestock sub-sector in Kasagama sub-county. The analysis was based on the data collected from 60 respondents including 29 males and 31 female representatives engaging in the enterprise. It followed the study objectives and presents findings on the socio-economic characteristics of respondents, participation of men and women in bull fattening activities, characteristics of the enterprise, costs and returns, profitability, factors associated with profitability, major challenges and support requirements.

4.1 Socio-economic characteristics of bull fatteners in Kasagama sub county.

The socio-economic characteristics were important because they influence farmers' ability to acquire resources, make decisions, access information and manage livestock enterprises. Table 1 presents the socioeconomic characteristics of the 60 respondents involved in bull fattening in Kasagama Sub-County. The variables considered include gender, age, marital status, education level, household role, main source of income, and other relevant characteristics recorded in the questionnaire. Women are present in bull fattening, but being counted as a participant does not mean they own the bulls or control the profit. This aligns with Hillesland et al. (2023).

Table 1: **Socio-economic characteristics of respondents.**

Variable		Frequency	Percent
Gender			
	Female	31	51.7
	Male	29	48.3
Education	No formal education	1	1.7
	Ple	9	15
	Uace	17	28.3
	Uce	15	25
	University	18	30
marital status	Married	44	73.3

	Single	16	26.7
household role	Dependent	10	16.7
	head of household	25	41.7
	Other	2	3.3
	Spouse	23	38.3

Age and experience of respondents. The age of respondents ranged from 24 to 64 years with a mean age of approximately 40.2 years. The median age was 39.5 years. The experience in bull fattening ranged from 1-27 years with a mean of approximately 6 years and median of 5 years. Table 2 presents the age distribution and experience of respondents engaged in bull fattening in Kasagama Sub-County. Respondents were aged between 24 and 64 years, with a mean age of approximately 40.2 years and a median age of 39.5 years. Their experience in bull fattening ranged from 1 to 27 years, with an average of approximately six years and a median of five years. The findings are relevant to the study by Nkadimeng et al. (2021), which applied gross margin analysis to examine the economic performance of cattle farmers in South Africa.

Table 2: Age and experience.

Variable	Mean	Std. Deviation
Age	40.18	11.287
Years of experience in bull fattening	6	4.861

Results showed that bull fattening was undertaken predominantly by economically active adults. The average of six years of experience suggests that most respondents had sufficient exposure to the enterprise to provide informed information about production costs and market profitability. However, the wide range of experience indicated considerable difference in farmers' familiarity with bull fattening practices like knowledge in animal selection, feeding, disease management and market timing.

4.2. Gender roles in bull fattening value chain.

The study examined gender participation in bull fattening activities since it influences ownership, access to resources and control of income. Of the 60 respondents, 31(51.7%) were female.

29(48.3%) were male although women slightly outnumbered men, in the data sample, it shows that participation does not necessarily translate into equal control over enterprise decisions.

Furthermore, the study showed that participation was not uniform across all activities. Women were particularly represented among respondents who described themselves as wives or jointly involved in the enterprise, while men were more frequently represented among the household heads. The findings therefore suggest that policies aimed at increasing women's benefits from bull fattening should address not only access to production activities but also access to credit, ownership of livestock assets. Market information and control over enterprise income. Table 3 presents the participation of men and women in the bull-fattening value chain. The results suggest that both genders participated in the enterprises, although their responsibilities and influence over enterprise decisions may have differed. This interpretation is consistent with Hillesland et al. (2023), whose work on livestock asset holdings in Uganda highlights the importance of gendered rights and household relations in determining who owns or controls livestock. The findings also relate to Kyayesimira et al. (2018),

Table 3: **Gender participation in enterprises.**

Variable		**Frequency**	**Percent**
primary ownership		1	1.7
	Husband	11	18.3
	jointly owned	17	28.3
	Other	20	33.3
	Wife	11	18.3
buying feeder bulls	1	40	66.7
	2	9	15
	3	6	10
	4	5	8.3
Feeding and watering	1	9	15
	2	5	8.3
	3	8	13.3
	4	38	63.3
Cleaning stalls	1	7	11.7
	2	6	10
	3	5	8.3

	4	42	70
Administering drugs	1	34	56.7
	4	26	43.3
Negotiating price	1	33	55
	2	15	25
	3	11	18.3
	4	1	1.7
Profit spending decisions	1	14	23.3
	2	17	28.3
	3	28	46.7
	4	1	1.7

Characteristics of bull fattening enterprises studied included the number of bulls fattened by respondents ranged from 6 to 70 bulls with an average of approximately 27.8 bulls per enterprise. The average purchase price of the bulls was approximately UGX 970833 per bull. The reported selling price averaged approximately UGX 1887000 per bull.

The analysis shows that men fattened more bulls compared to women with an average difference of 5 bulls. This was so because men controlled most of the resources including land and most decision making powers. In terms of purchase price, the same male gender emerged to be more economical than women by averagely saving at least UGX 23737 on the feeder bulls because men have easy mobility to go and get their bulls from far places at cheaper prices.

On the overall profit, male profit is higher by UGX. 3,487,687. This is because male farmers do most of the work on their farms with minimum labour requirement unlike woman owned farms. The same applies on return on investment (ROI) and benefit cost ratio (BCR). However, average selling price was observed to be higher in women than males according to the study.

Table 4 compares the characteristics and economic performance of bull-fattening enterprises managed by men and women. The reported enterprise characteristics and overall results are summarized below.

Table 4: **Enterprise characteristics and comparison between men and women profitability.**

Variable	Pooled (SD)	Female (sd)	Male (sd)	Gender differences(M-F)
Number of bulls fattened	27.77 (15.59)	25.4 (16.4)	30.3 (14.47)	4.9***(-1.12)
Average purchase_ price per bull	970833.33 (172049.34)	982258 (172022)	958621 (174268)	-23637 (2246)
Profit	13564683.33 (900946.81)	11878967.7 (8134201)	15366655.2 (9676636)	3487687.5 (1542335)
Benefit Cost Ratio (BCR)	1.357 (1.11)	1.3 (0.1)	1.4 (0.1)	0.1 (0)
return on investment (ROI)	35.7 (11.6)	34.6 (11.97)	36.9 (11.4)	2.3 (-0.57)
Average selling price per bull	1887000 (144161.6)	1917742 (373842)	1906887 (325884.5)	-10855 (-47957.5)

**** P<0.01, ** P<0.05, *P<0.1*

4.3 Factors affecting profitability in bull fattening enterprises.

The outstanding factors that influence the bull fattening profitability were found out to be extension services, number of bulls fattened, selling price per bull, feeds costs, veterinary services, marital status and other constant factors which are less than 10% significant.

Extension services showed positive correlation of 1.86 and high level of significance at 1%. Farmers who get extension advice have higher profit implying that 1unit increase in extension access increases profit by 1.86 units of profits, this was because extension workers advise farmers on better and modern operation practices that improve efficiency and profitability.

Number of bulls fattened was highly significant because of the economies of scale benefits showing that 1 unit of increase in number leads to a 0.013 in profit.

Same applies to veterinary services significant at 1% and a positive correlation whereby a unit of veterinary services increases profit by 3.92 because healthy bulls grow better and fetch higher prices. At 5%, moderately significant, feeds also have a negative correlation because overfeeding results into stunted growth and in addition it is the biggest cost in bull fattening business. This means that an increase in feeds leads to a 0.695 reduction in profit.

Marital status which was also significant at 10% and a positive correlation. This was so because married farmers are more profitable because family labour reduces the cost of production in bull fattening.

Table 5 presents the multiple linear regression results for factors associated with profitability among smallholder bull-fattening enterprises in Kasagama Sub-County. The dependent variable was reported profitability, measured using gross margin as the profitability measure specified in the final regression model. The explanatory variables included factors such as access to extension services, number of bulls fattened, selling price, feed costs, veterinary services, marital status, and other socioeconomic and enterprise characteristics.

The regression findings suggest that enterprise management, production scale, access to technical services, and input expenditure may be important correlates of profitability in bull fattening. These findings are consistent with the general economic principles of livestock enterprise analysis. the relevance of gross margin analysis in assessing cattle-farming performance (Nkadimeng et al. (2021), while Kyayesimira et al. (2018) provide a Ugandan beef-value-chain perspective on the roles and operations of livestock market actors.

Table 5: Factors affecting profitability of bull fattening

Variable	Correlation coefficient(B)	Std Error	t-value	p-value(sig)
(Constant)	31.7	11.84	2.678	0.002***
Gender	2.98	4.007	0.746	0.46
Age	0.121	0.252	0.48	0.633
Experience	-0.624	0.583	-1.071	0.29
Training	-.5.76	4.2	0.974	0.335
Number of bulls fattened	-0.013	0.134	0.093	<0.001***
Feeds	-0.695	4.7	2.977	0.028**
Veterinary services	3.92	1.362	3.397	0.001***
Marital status	4.75	2.1	2.6	0.061*
Ownership	10.03	4.38	2.259	0.797
Extension services	1.86	2.89	0.643	<.001***
Hired labor	1.586	1.0007	0.949	0.347
Education	0.226	1.961	0.115	0.22

**** P<0.01, ** P<0.05, *P<0.1*

CHAPTER FIVE.
CONCLUSIONS AND RECCOMENDATIONS.

5.1 Conclusions.

The study found that respondents had an average of 40.2 years and approximately six years of experience in bull fattening. Livestock was the main source of income for 56.7% of respondents. The average bull fattening enterprise size was approximately27.8 bulls although the scale ranged from 6 to 70 bulls. With average buying price of UGX 973729 per bull and average selling price of approximately UGX 1.89 million.

The results show that bull fattening was generally profitable. The average recorded revenue was approximately UGX 52.4 million, compared with average recorded costs of appropriately UGX 38.8 million. This produced an average profit of approximately UGX 13.6 million. a BCR of 1.35. The regression model explained that number of bulls fattened and selling price were significantly positive indicators of profitability. Experience, purchase price, gender, credit access, training and land ownership were not statistically significant at the 5% level in the model.

Diseases and parasites were the most frequently reported challenges, followed by high feed costs and feed shortages. Other important challenges included limited veterinary services, drought, market and price problems, theft, inadequate capital and limited knowledge. The most frequently requested form of support were veterinary services, affordable credit, training and extension, improved market access and subsidized inputs.

5.2 Recommendations.

The study recommends that farmers should improve feed management through use of affordable locally available feeds, proper ration formulation, and feed conservation to reduce high costs and shortage of feeds. Disease prevention and veterinary care through regular vaccination, deworming and timely treatment. Improving access to credit through SACCOs, banks and government financing, strengthen extension services and farmer training in animal selection, feeding and disease control, improve market access and price information, promotion of water harvesting for use in dry seasons and finally strengthening security and livestock insurance.

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RESEARCH QUESTIONNAIRE

TOPIC: Gender Participation and Profitability of Bull Fattening Among Smallholder Farmers in Kasagama Sub-County, Lyantonde District.

Introduction:

My name is Nagasha Esther, a student at makerere university and I am conducting a study on bull fattening in this area. The information you provide is strictly for academic purposes and will be kept confidential. Your participation is voluntary.

SECTION A: SOCIO-ECONOMIC PROFILE

1. **Gender of Respondent:** ……
2. **Age of Respondent:** ……. years
3. **Marital Status:** (Single, Married,Widowed,Divorced)
4. **Highest Education Level:** (None,Primary,Secondary,Tertiary/University)
5. **Household Role:** (Head of Household,Spouse,Dependent/Other)
6. **Years of Experience in Bull Fattening:** ……. years
7. **Main Source of Income:** (Livestock, Crop Farming, Trade/Business, Salary/Wages)

SECTION B: GENDER ROLES AND PARTICIPATION

8. **Who is the primary owner of the bulls in this enterprise?**

(Husband, Wife, Jointly Owned, Other: ……

9. **Who performs the following tasks?**

Task: Primarily Male, Primarily Female, Both, Hired Labor

| Buying the feeder bulls…….

| Feeding and Watering ……

| Cleaning the stalls/kraal …….

| Administering drugs/Vaccines …….

| Seeking market/Negotiating price …….

| Deciding how to spend the profit……

10. **Do you face any cultural restrictions in participating in bull fattening?** (Yes/No)

If yes, please specify: ……

SECTION C: PROFITABILITY DATA (Last Production Cycle)

Please provide data for the most recently completed fattening cycle (typically 3–6 months).

11. REVENUE DATA:

- Number of bulls fattened: _____
- Average Purchase Price per bull (UGX): _____
- Average Selling Price per bull (UGX): _____
- Total Revenue (Total Bulls × Selling Price): _____

12. VARIABLE COSTS (UGX):

Expense Item	**Total Cost for the Cycle (UGX)**
Purchase of Feeder Bulls (Total)	
Supplementary Feeds (Maize bran, hay, etc.)	
Mineral Licks/Salt	
Veterinary Services & Drugs	
Hired Labor Costs	
Water Costs (if paid for)	
Transport to Market	
TOTAL VARIABLE COSTS (TVC)	

SECTION D: ACCESS TO PRODUCTIVE RESOURCES

13. **Land Ownership:** Do you own the land used for fattening? (Yes/No)
14. **Credit Access:** Have you ever received a loan for your bull fattening business? (Yes/No)

If yes, from where? (PDM, SACCO, Bank, Family/Friends)

15. **Extension Services:** How many times in the last year have you been visited by a Veterinary or Extension Officer? …….

16. **Training:** Have you ever attended training on modern bull fattening techniques? (Yes/No)

17. **Market Information:** How do you find out about current market prices for beef? …

(Radio, Neighbors, Mobile Phone, Market Traders)

SECTION E: CHALLENGES AND RECOMMENDATIONS

18. **What are the top three challenges you face in bull fattening?**

    1.

    2.

19. **What support do you need to make your business more profitable?**