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THE PROFITABILITY OF MUHLANGULENI CATTLE FEEDLOT IN CHIREDZI, ZIMBABWE

BY

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Abstract

The primary aim of this study was to assess the profitability of the Muhlanguleni Cattle Feedlot in Chiredzi District over the period 2020 to 2024 and to explore the operational, financial and strategic factors influencing its performance. The study pursued three key objectives: to determine the actual profitability levels of the feedlot during the five-year period, to examine the factors that contributed to either high or low returns and to identify strategies that could enhance future earnings. Data were gathered from 141 respondents, including farmers, feedlot workers and key informants such as livestock extension officers, veterinary staff and local cooperative leaders. Participants were selected through a combination of random sampling for the survey and purposive sampling for interviews. The research applied a mixed methods design, combining statistical analysis using SPSS with thematic interpretation of qualitative responses. The study found that the feedlot remained profitable throughout the study period, with return on investment peaking at 27.27% in 2021 and remaining above 20% in most other years. Profitability was disrupted in 2022 due to livestock disease and policy instability but recovered quickly through improved management and reinvestment. Key drivers of profitability included access to formal markets, animal health control, feed management and the introduction of low-cost technologies. A binary logistic regression model was applied to assess the influence of selected operational factors on perceptions of profitability improvement, with operational efficiency and innovation emerging as near-significant predictors. Participants supported strategies such as adopting innovative business models, improving risk planning and enhancing feedlot discipline through record-keeping and coordinated marketing. This study recommends practical changes to feedlot operations, stronger support from development partners and targeted government interventions in infrastructure, extension services and livestock marketing policy.

Key words: profitability, feedlot, livestock, communal farming, rural enterprise

Declaration page

I declare that this dissertation is my original work except where sources have been cited and acknowledged. The work has never been submitted, nor will it ever be submitted to another University for the award of a degree.

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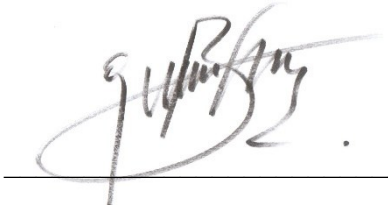
Dr Stanislas Bigirimana 

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Dedication Page

I dedicate this research project to all the communal cattle farmers who work tirelessly to sustain rural livelihoods and my mother for the inspiration to never give up.

List of Acronyms and Abbreviations

AGRITEX	Agricultural Technical and Extension Services
BEST	Beef Enterprise Strengthening and Transformation
CBC	Cattle Business Centre
EMA	Environmental Management Agency
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
KII	Key Informant Interview
MS	Mean Score
NGO	Non-Governmental Organisation
RII	Relative Importance Index
ROI	Return on Investment
SPSS	Statistical Package for the Social Sciences
USD	United States Dollar
VET	Veterinary Services Department
ZAGP	Zimbabwe Agricultural Growth Programme
ZIMSTAT	Zimbabwe National Statistics Agency

Definition of Terms

Feedlot is a confined livestock management system where animals, particularly cattle, are fattened on a controlled diet before slaughter (Lombard, Maré and Jordaan, 2018).

Profitability refers to the financial outcome of a business after all costs have been subtracted from total income (Brigham and Houston, 2019).

Return on Investment (ROI) is a financial indicator that measures the percentage gain or loss relative to the amount invested in a business activity (Helfert, 2010).

Operational Efficiency describes how effectively inputs such as feed, labour and veterinary care are managed to produce optimal animal weight gain at the lowest possible cost (Galyean and Hales, 2023).

Market Access is the ability of producers to reach buyers and sell their products under fair, timely and competitive terms (Atieno, 2010).

Risk Management involves practices that reduce exposure to threats such as disease, feed scarcity, or volatile market prices (Mavedzenge et al., 2006).

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CHAPTER 1 INTRODUCTION

1.1 Introduction

This chapter focuses on the profitability of Muhlanguleni Cattle Feedlot in Chiredzi, offering essential context and establishing the foundation for the study. It begins with an overview of the research, incorporating the introduction, background and statement of the problem, which highlight the wider backdrop of declining profitability in businesses while situating the study within an African and regional context. The chapter then delineates the research objectives, outlining the goals that guide the investigation and posing critical questions addressed in subsequent sections. Hypotheses formulated to tackle the identified problem are also presented. Following this, the significance of the research is discussed in academic and practical terms, illustrating how the study's findings may benefit various stakeholders. The delimitations and limitations of the study are outlined to define its boundaries and scope, ensuring clarity about what lies within and beyond the investigation. The chapter concludes with a concise summary, encapsulating its principal elements and mapping the path for the chapters to come.

1.2 Background of the Study

Profitability is a fundamental concept in business and financial management, serving as a key indicator of an enterprise's ability to generate earnings that exceed costs and

investment outlays. It is commonly measured using financial metrics such as net profit margin, return on investment (ROI) and gross profit margin. However, the definition of profitability is not without contention, as scholars and practitioners have debated its interpretation and measurement across different economic and business contexts. Andriani, Nurnajamuddin and Rosyadah (2021) distinguish between accounting profit, which focuses on revenues and expenses as recorded in financial statements and economic profit, which incorporates opportunity costs to assess a business's true financial performance. Meanwhile, cash flow-based profitability models emphasize liquidity and the timing of income and expenses, underscoring a company's ability to meet financial obligations as they arise (Helfert, 2010). These diverse perspectives illustrate the complexity of profitability as a concept, where businesses may prioritize different measurement approaches based on their strategic objectives, industry norms and financial goals.

Profitability is of paramount importance because it determines the sustainability and growth potential of a business. It enables companies to reinvest in expansion, upgrade technology, develop new products and explore new markets (Napier and Neptune, 2018). Beyond internal benefits, profitability enhances an enterprise's ability to attract investors and secure financing, as high profitability signals strong financial health and operational efficiency. It also improves a company's resilience in navigating economic downturns, market fluctuations and industry-specific risks. Additionally, profitability

has macroeconomic significance as profitable businesses contribute to economic growth, job creation and government revenue through taxation (Barauskaite and Streimikiene, 2021). Therefore, understanding profitability is not only essential for business sustainability but also for broader economic stability and development.

Achieving profitability requires a combination of strategic planning, cost management and market-driven decision-making. Businesses must implement robust financial management systems that optimize revenue generation while minimising unnecessary costs (Brigham and Houston, 2019). One of the most critical processes in this regard is pricing strategy companies must balance competitive pricing with cost recovery to maximize profit margins. Effective operational efficiency, such as lean management practices and technological adoption, can further drive profitability by improving productivity and reducing waste. Furthermore, risk management strategies, including hedging against market volatility and diversifying revenue streams, help protect businesses from unpredictable economic conditions. Marketing and customer engagement are also essential, as strong brand positioning and customer loyalty directly contribute to sustained revenue growth (Lee, 2021).

The stakeholders involved in profitability management are diverse and play interconnected roles in shaping business outcomes. Shareholders and investors prioritize returns on their investments and expect sound financial management to

ensure business viability. Employees, as key contributors to productivity, require competitive compensation and job security, both of which depend on a company's profitability (Freeman, 2017). Customers, in turn, seek high-quality products and services at reasonable prices and their purchasing decisions directly impact revenue streams. Suppliers and service providers rely on stable business relationships to sustain their own operations, necessitating fair and consistent dealings with profitable businesses. Additionally, regulatory bodies influence profitability through taxation policies, labour laws and environmental regulations, while local communities benefit from corporate social responsibility initiatives, employment opportunities and economic contributions from profitable enterprises. Managing these stakeholder relationships effectively is vital for sustaining long-term profitability.

While profitability is a universally relevant business concept, its determinants and challenges vary across different economic contexts. Global economic trends, policy decisions and technological advancements influence business profitability in significant ways. Stiglitz (2017) emphasizes that trade agreements, financial market regulations and capital flows have reshaped the profitability landscape, requiring businesses to adapt to increasingly interconnected economies. Technological advancements, such as automation and digital transformation, have also altered traditional business models, necessitating new approaches to maintaining profitability (Brynjolfsson and McAfee, 2014). Understanding these global shifts is essential for

businesses seeking to sustain and improve profitability in a rapidly evolving economic environment.

In the African context, profitability dynamics are shaped by both opportunities and challenges unique to the continent's economic environment. Nkurunziza and Ndayiziga (2018) identify infrastructure deficits, access to finance and political instability as key barriers to business profitability in many African countries. Meanwhile, Atieno (2010) highlights the significance of the informal sector in Africa's economic landscape, noting that many businesses operate outside formal regulatory structures, which affects profitability assessment and long-term sustainability. These factors underscore the need for context-specific strategies that address structural constraints while leveraging Africa's growing consumer markets and resource potential.

Focusing on Southern Africa, historical and policy-driven economic shifts have had profound implications for business profitability. Fourie and von Fintel (2014) explore the long-term effects of colonial economic structures on contemporary business environments, noting persistent inequalities in resource access and market participation. Post-apartheid policy changes and economic liberalization in South Africa have altered profitability dynamics, with scholars such as Maharaj and Kirsten (2018) investigating how land reform policies and industrial restructuring have

affected agricultural and commercial enterprises. Similarly, Zimbabwe's economic trajectory, marked by currency fluctuations, land reform policies and shifting trade relationships, has presented both opportunities and challenges for businesses seeking to maintain profitability (Makochekanwa, 2008). These regional dynamics highlight the complex interplay of historical, economic and policy factors that influence business profitability in Southern Africa.

Profitability is a multifaceted concept with diverse interpretations and measurement methods, making it a subject of ongoing academic and practical debates. Its importance extends beyond individual businesses, influencing broader economic stability and growth (Hasan et al, 2024). This study is motivated by the need to explore these profitability dynamics within the specific setting of cattle feedlot operations, considering industry-specific challenges, evolving market conditions and stakeholder expectations.

1.3 Statement of the Problem

Profitability remains a central focus in business research, with scholars continuously examining the factors that drive financial performance across different industries. Several studies have investigated the determinants of profitability in agricultural enterprises, with a growing emphasis on livestock production and feedlot operations. Chitakunye and Mushonga (2020) explored how economic policies and political

developments influence business performance, while Zhou and Nhamo (2019) assessed the role of technological adoption in enhancing profitability in Zimbabwean agribusiness. Lombard, Maré and Jordaan (2018) examined feedlot profitability in South Africa, focusing on cost structures and efficiency, whereas Gororo (2015) identified rising feed costs as a significant challenge in livestock production. Though scant studies examined into various dimensions of profitability, they leave gaps in industry-specific analyses and theoretical frameworks that warrant further inquiry, particularly in understanding how profitability dynamics unfold in under-researched regions and how industry-specific factors interact with broader economic conditions to shape financial outcomes. Limited research has assessed the financial performance of cattle feedlots in Zimbabwe, particularly those operating in rural and semi-commercial settings such as Muhlanguleni Cattle Feedlot in Chiredzi. Therefore, this study seeks to understand weather the Muhlanguleni cattle feedlot in Chiredzi district is profitable or not from using a scientific inquiry.

1.4 Research Objectives

The main objective of the study is to analyse weather the Muhlanguleni cattle feedlot in Chiredzi district is profitable or not.

The specific research objectives this study sought to address are:

1. To assess profit levels at Muhlanguleni cattle feedlot in Chiredzi, Zimbabwe between 2020 to 2024

2. To examine factors that led to high or low levels of profit at Muhlanguleni cattle feedlot in Chiredzi between from 2020 to 2024

3. To suggest strategies that may improve profits at Muhlanguleni cattle feedlot in Chiredzi

1.5 Research Questions

The study sought to answer the following specific research questions:

1. What were the profit levels at Muhlanguleni cattle feedlot in Chiredzi, Zimbabwe between 2020 to 2024?
2. To are factors that led to high or low levels of profit at Muhlanguleni cattle feedlot in Chiredzi between from 2020 to 2024?
3. What are the strategies that may improve profits at Muhlanguleni cattle feedlot in Chiredzi?

1.6 Hypothesis

The study seought to test the following hypotheses:

- H_0: There is no significant profitability in operating Muhlanguleni cattle feedlot.
- H_1: There is significant profitability in operating Muhlanguleni cattle feedlot.

1.7 Significance of the Study

This study holds significance at multiple levels, providing progressive and perspectives contributions to academia, the cattle feedlot industry and the researcher.

1.7.1 To the Academia

The study expands the existing body of knowledge by providing empirical perspectives into the factors influencing profitability in the cattle feedlot industry. While various studies have examined profitability in agriculture, limited research has focused specifically on feedlot operations, particularly in rural Zimbabwe. Through its examination of cost structures, market dynamics, operational efficiencies and external influences, the study served as a useful reference for scholars studying agricultural economics, agribusiness management and profitability analysis. The findings might also contribute to theoretical discussions on profitability by assessing the applicability of various business and financial models in the context of feedlot operations. Furthermore, it provides a foundation for future research, enabling scholars to build upon its findings to explore additional dimensions of profitability in the livestock sector.

1.7.2 To the Industry

This research is particularly relevant to stakeholders in the cattle feedlot industry, including feedlot operators, farmers, investors and policymakers. Muhlanguleni Cattle

Feedlot and similar enterprises stand to benefit from an in-depth assessment of their profitability, as the study will identify key financial challenges and propose actionable strategies to improve financial sustainability. Farmers who supply cattle to the feedlot will also gain views into pricing structures and cost management practices that can enhance their profitability. Additionally, investors considering entering the feedlot business will find the study beneficial, as it provides a detailed analysis of the financial viability of such operations in Zimbabwe's economic landscape. Policymakers and regulatory authorities can also utilise the findings to formulate evidence-based policies that support the growth and development of the livestock industry, ensuring a more stable and profitable environment for feedlot businesses.

1.7.3 To the Researcher

For the researcher, this study presents an opportunity to contribute meaningful data to an area that has received limited scholarly attention. Conducting a comprehensive analysis of profitability dynamics in feedlot operations will enhance the researcher's expertise in financial analysis, agricultural economics and business strategy. Additionally, the study might provide practical exposure to data collection and analytical techniques, further refining research and critical thinking skills. Engaging with industry stakeholders might also facilitate professional networking and

collaboration, creating potential opportunities for future research and consultancy in the field of livestock production and agribusiness management.

The study's significance extends beyond theoretical contributions, offering tangible benefits to industry players, academia and the researcher. Through its findings, the study aims to inform strategic decision-making, enhance business sustainability and contribute to broader discussions on the profitability of livestock enterprises in Zimbabwe and beyond.

1.8 Delimitations of the Study

1.8.1 Geographic Scope Delimitation

The study is geographically confined to Chiredzi district, specifically in Chikombedzi, where Muhlanguleni Cattle Feedlot operates. The research focuses exclusively on this location to ensure a detailed and context-specific analysis of the challenges and opportunities influencing profitability within the feedlot. This geographic delimitation ensures that the study remains relevant to the economic, environmental and social conditions that define the business environment in this region. Findings are therefore specific to this locality and may not be broadly generalized to other regions with differing economic or agricultural landscapes.

1.8.2 Time Scope Delimitation

The study is restricted to the period between 2020 and 2022, allowing for an analysis of recent trends and developments affecting the profitability of Muhlanguleni Cattle Feedlot. This timeframe was selected to capture the impact of prevailing economic conditions, policy shifts and market fluctuations that have shaped the financial performance of the feedlot during this period. The focus remains on understanding contemporary profitability challenges rather than examining historical trends beyond the defined period, ensuring that the findings are relevant to present-day business realities.

1.9 Limitations of the study

The conduct of any research not without limitation, hence this study was not immune to limitations. The research study findings are limited to a very small sample of only one rural district out of the ten rural districts in Zimbabwe, which received donor-funding for the development of cattle feedlots. As a result, the study's conclusions cannot be applied to other situations. Despite the limited sample size, the researcher contends that the results provided significant views into what was anticipated from other rural districts in respect to the profitability of a cattle feedlot. There is also limited literature on the profitability of running a cattle feedlot in the rural districts of Zimbabwe. The research finding from other studies related to the profitability of a cattle feedlot were used as foundation for the research.

1.10 Chapter Summary

The present chapter one highlighted the research introduction, background of the study, objectives, research questions and justification of the study. It also presented the outline of the research area and factors affecting profitability of cattle feedlots. The next chapter presents the literature review in relation to the research area of the study.

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter explores the information available in the literature to provide an understanding of the profitability of business operations. The chapter begins with an introduction that provides an overview of its structure, outlining key themes. Then, it presents the theoretical framework, explaining how it relates to profitability and justifying the theories selected for this study. The chapter proceeds by outlining the criteria for assessing profitability, defining the dependent variable through measurable indicators. The chapter provides relevance of the theory which justifies the selection of theories and their applicability in assessing profitability in business operations. The chapter also brought the criteria for assessing profitability which defines the dependent variable by outlining measurable indicators. The chapter then proceeds by identifying critical determinants and strategies while emphasising the multifaceted nature of profitability within business operations. The discursive section which follows engages in the debate of the related literature based on the objectives of the study. Finally, the chapter outlines the conceptual framework, which gives a visual representation of the relationships between key variables in the study. The chapter concludes with a succinct summary of the findings from the literature.

2.2 Theoretical framework

This study is anchored on Michael Porter's Value Chain Model, which provides a structured approach to analysing profitability in business operations as shows in adopted figure 2.1

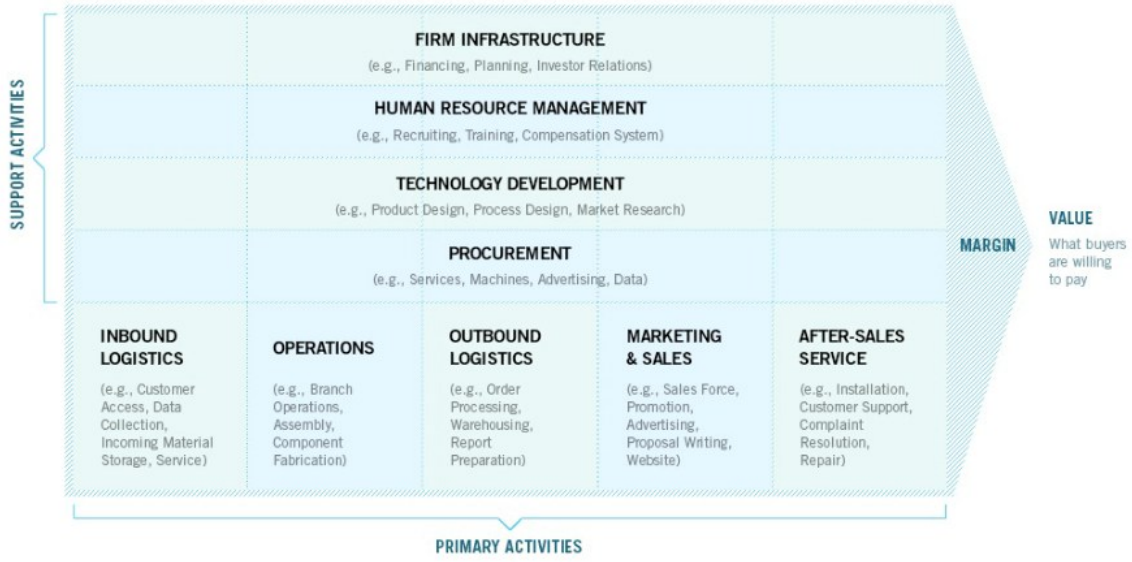


Figure 2.1: Michael Porter's Value Chain Model

The model disaggregates a business into its strategically significant activities, identifying sources of competitive advantage and cost efficiency. Given that the study focuses on the profitability of Muhlanguleni Cattle Feedlot, Porter's framework is instrumental in examining how the feedlot's operations create value and where inefficiencies may erode profitability. At the core of the value chain are primary activities, which directly influence production, marketing and distribution (Adam and Dandutse, 2023). Michael Porter's Value Chain Model provides an approach for analysing how businesses create value and gain competitive advantage by breaking

down their activities into strategically significant components (Ateljević, Kulović and Đoković,(2023).

The model categorizes business operations into primary activities, which directly contribute to production and service delivery and support activities, which enhance efficiency and long-term sustainability (Cattaneo, 2023). Firm infrastructure encompasses financial management, strategic planning and investor relations, ensuring the business operates effectively. According to Chatwick (2023), human resource management focuses on recruiting, training and retaining employees whose expertise enhances efficiency. The model Technology development supports innovation in production, market research and efficiency improvements, while procurement involves acquiring essential inputs such as raw materials, machinery and services at optimal costs.

Among the primary activities, inbound logistics manages raw material storage, supplier relationships and inventory flow. Operations transform inputs into final products through efficient production processes. Outbound logistics ensures timely distribution and order fulfilment (Sulaiman, Ahmad and Khabbazi, 2025). Marketing and sales focus on branding, pricing strategies and market positioning to attract customers. After-sales services, including customer support, repairs and warranty management, strengthen customer relationships and ensure long-term business

viability. The model highlights that each activity must add value exceeding its cost to maximize profitability and sustain competitive advantage.

Michael Porter's value chain model serves as a strategic tool for understanding how businesses create value, manage costs and sustain competitive advantage. It breaks down a business into primary and support activities, each contributing to value creation and profitability (Abdollahi, Sadeghvaziri and Rejeb, 2023). In the context of a cattle feedlot, inbound logistics involves sourcing and managing feed, veterinary supplies and cattle procurement, which influence input costs and production quality. Operations determine cost structures through feeding regimes, animal health management and infrastructure efficiency, directly impacting feed conversion rates and overall financial performance (Ramukhithi, Nephawe, Mpofu et al, 2023). Outbound logistics focuses on marketing, processing and distribution strategies that connect feedlot products with the market. Marketing and sales influence revenue generation through branding, customer relationships and pricing strategies, while after-sales services including regulatory compliance and customer support ensure continued market demand and long-term business relationships.

Support activities play a critical role in shaping profitability by enhancing efficiency across the value chain. Firm infrastructure, which includes financial management and strategic planning, provides the foundation for sustainable operations (Du, Wang and

Gao et al, 2023). Human resource management ensures that staff are well-trained in feedlot best practices, animal husbandry and operational oversight, reducing inefficiencies and improving productivity (ibid). Technology development, such as precision feeding systems and disease monitoring tools, enhances decision-making and optimises resource allocation. Procurement influences input costs through sourcing strategies for feed, veterinary services and logistics, ultimately shaping financial outcomes (Sherwood-Walter, 2023). The ability to manage these activities effectively determines whether a feedlot achieves higher margins or suffers from cost inefficiencies.

2.3 Relevance of the Theoretical Framework to this study

Porter's Value Chain Model provides a structured way to assess profitability at Muhlanguleni Cattle Feedlot by identifying areas where value is created and where inefficiencies may be undermining financial performance. This study applies the model to examine whether each stage of the feedlot's operations contributes positively to overall profitability or if certain activities result in unnecessary costs. If feed costs are too high, weight gain efficiency is poor, or market access is weak, then the business struggles to maintain strong financial returns (Tahmasbi, 2024). Through analysing each element of the value chain, this study aims to determine where improvements can be made to strengthen financial sustainability (Porter, 2009).

Profitability in cattle feedlot operations depends on how well resources are utilised and costs are managed. The model enables the study to assess whether procurement strategies ensure cost-effective sourcing of feed and veterinary supplies, whether operational processes maximise feed efficiency and cattle growth and whether marketing strategies effectively position the feedlot in the beef supply chain. If procurement is inefficient, operational costs are excessive, or marketing fails to secure competitive pricing, then profitability declines (Pundir, Garg and Singh, 2024). The study, therefore, evaluates these components to determine their contribution to overall business performance.

The model is also relevant in assessing how Muhlanguleni Cattle Feedlot can achieve competitive advantage. Feedlot businesses typically improve profitability either by reducing costs or differentiating their product offerings (Taube, 2021). Cost leadership can be achieved through efficient feed conversion ratios, bulk feed purchasing and effective disease management, while differentiation may involve producing premium-quality beef that attracts higher prices (Hossain, 2024). This study examines whether the feedlot can achieve either of these competitive advantages or if inefficiencies prevent financial sustainability.

2.4 Criteria for assessing profitability

Profitability is a fundamental measure of business performance and its assessment requires a combination of financial, operational and strategic indicators. These metrics provide perspectives into how effectively a business generates revenue relative to its costs and investments (Munir, Akram and Abbas, 2024). The financial perspective considers metrics such as net profit margin, which measures the percentage of revenue that remains after all expenses have been deducted (ibid). A higher net profit margin indicates strong cost control and financial efficiency. Return on investment (ROI) evaluates the profitability of investments by comparing net profit to total investment costs, ensuring that capital is allocated effectively (Almestarihi et al, 2024). Additionally, gross profit margin highlights cost management efficiency by examining the difference between revenue and direct production costs before operating expenses are factored in.

Beyond financial measures, operational efficiency plays a key role in profitability assessment. Businesses must monitor operational cost efficiency, which examines how effectively expenses are managed while maintaining productivity (Khosroniya, Hosnavi and Zahedi, 2024). Companies with lower operating costs relative to revenue tend to achieve better profitability. Revenue per unit is another essential metric, particularly in industries such as cattle feedlots, where financial performance depends

on pricing strategies and production volume (Bake, 2024). For feedlot operations, feed conversion efficiency is a crucial factor, measuring how effectively feed inputs are converted into animal weight gain. Maximising feed efficiency directly reduces production costs and enhances profitability (ibid). Asset turnover ratio further reflects how efficiently a company utilises its assets to generate revenue, offering a broader perspective on resource allocation and productivity (Erawati, 2025).

Strategic indicators are also essential in assessing profitability and ensuring long-term financial sustainability. Market share growth serves as an indirect indicator of profitability, as businesses that expand their customer base tend to experience increased revenue and competitive positioning (Tahmasbi, (2024). Additionally, cash flow analysis ensures that a business maintains adequate liquidity to support operations and future investments (Nasimiyu, 2023). External factors such as regulatory compliance, industry standards and risk management strategies also influence profitability by mitigating exposure to market fluctuations (Bake, 2024; Adeniran et al, 2024). An assessment of profitability requires integrating these financial, operational and strategic indicators to provide a holistic evaluation of business performance. The key criterion for assessing profitability is demonstrated in Table 2.1.

Table: Key Criteria for Assessing Profitability

Criteria	Description
Net Profit Margin	Measures the percentage of revenue that remains after all expenses have been deducted, indicating overall financial efficiency (Robert, Jennifer and Todd, 2023).
Return on Investment (ROI)	Compares net profit to total investment costs, assessing how effectively capital is used to generate returns (Daddand Hinton, 2023).
Gross Profit Margin	Evaluates the difference between revenue and direct production costs before operating expenses, reflecting cost management efficiency (Andrianto, Nainggolan and Daryanto, 2024).
Operational Cost Efficiency	Assesses the business's ability to minimise costs while maintaining productivity, impacting overall profitability (Namadi, 2023).
Revenue per Unit	Indicates the revenue generated per unit of production or service, helping assess pricing strategies and production efficiency (Nagle, Müller and Gruyaert, 2023).
Feed Conversion Efficiency	Measures how efficiently feed is converted into animal weight gain, crucial for livestock operations in managing production costs (Galyean and Hales, 2023; Bake, 2024).
Asset Turnover Ratio	Reflects how efficiently a company utilises its assets to generate revenue, offering perspectives into resource allocation and productivity.
Market Share Growth	Tracks a business's ability to expand its customer base and revenue streams, serving as an indirect indicator of profitability growth (Fikri and Yolanda, 2023).
Cash Flow Analysis	Analyses liquidity and financial sustainability to ensure that operations and investments remain viable over time (Robert, Jennifer and Todd, 2023).

Source: Author's compilation

This structured approach to assessing profitability allows businesses to make informed decisions regarding financial health, cost management and long-term sustainability. According to Musyimi (2024), the integration of financial, operational and strategic indicators provides a comprehensive framework for evaluating profitability, ensuring

businesses can identify inefficiencies, implement corrective strategies and strengthen their competitive advantage.

2.5 Factors Influencing Profitability in businesses

Understanding the factors that contribute to varying levels of profitability in business operations is essential for ensuring the economic sustainability of these enterprises (Boyles et al., 2019). Profitability determinants in business operations offer multifaceted information into the economic drivers shaping financial outcomes in this sector. Researchers have identified various factors that contribute to either high or low levels of profit, encompassing aspects such as costs, market dynamics, operational efficiency, technological advancements and regional contextual factors (Chitakunye and Mushonga, 2020).

Costs emerge as a significant determinant of profitability, with studies highlighting the pivotal role of grain prices in shaping feedlot expenses (Gororo, 2015). Fluctuations in grain prices can exert substantial pressure on profit margins, underscoring the importance of effective cost management strategies in mitigating financial risks. Additionally, market dynamics, including beef prices and demand fluctuations, play a crucial role in determining feedlot revenue streams (Boyles et al., 2019). Understanding market trends and implementing strategic marketing approaches are

essential for optimising profitability in response to shifting market conditions (Atieno, 2010).

Operational efficiency is another key determinant of profitability in business operations. Efficient feedlot management practices, such as feed management, animal health protocols and waste management systems, are essential for optimising resource utilisation and minimising production costs (Chitakunye and Mushonga, 2020). Technological innovations, such as precision feeding and genetic selection, have been shown to enhance operational efficiency, thereby improving profitability (Kolade and Thompson, 2018).

2.5.1 Costs

Costs constitute a substantial portion of the expenses incurred by feedlot operators, significantly influencing their profit margins. Gororo (2015) underscores the pivotal role of grain prices in determining feedlot expenses. Fluctuations in grain prices can have a profound impact on the financial viability of feedlot operations, as they directly affect the cost of feed procurement. Given the volatility inherent in grain markets, effective cost management strategies are imperative for mitigating the financial risks associated with costs (Jilane, Siyamand Badhon, 2023). Operators must employ proactive measures to monitor market trends, optimise feed procurement practices and

explore alternative feed sources to maintain cost competitiveness in the face of fluctuating grain prices.

Moreover, the impact of costs extends beyond direct expenditures, as they affect the overall operational efficiency and profitability of feedlot operations. High costs can erode profit margins and hinder the financial sustainability of businesses (Atichasari, Ratnasari and Kulsum et al., 2023). Therefore, feedlot operators must adopt efficient feed management practices to minimise waste and maximise feed utilisation efficiency. Strategies such as precision feeding and ration optimisation can help optimise feed conversion rates, thereby reducing costs per unit of weight gain and improving overall profitability (Kolade and Thompson, 2018).

2.5.2 Market Dynamics

Market dynamics, particularly beef prices and demand fluctuations, exert a significant influence on feedlot revenue streams, making them crucial factors in determining overall profitability (Boyles et al., 2019). Fluctuations in beef prices can directly impact the selling price of finished cattle, thereby affecting feedlot revenue. Additionally, changes in consumer demand for beef products, influenced by factors such as economic conditions, dietary preferences and cultural trends, can lead to shifts in market demand for market products (Biscarra-Bellio, de Oliveira, Marques and Molento, 2023). Consequently, feedlot operators must closely monitor market trends

and adapt their marketing strategies accordingly to capitalise on favourable market conditions and mitigate risks associated with price volatility (Boyles et al., 2019).

Strategic marketing approaches are essential for feedlot operators to optimise profitability amidst market dynamics (Atieno, 2010). Effective marketing involves identifying target market segments, understanding consumer preferences and developing value propositions that resonate with customer needs and preferences. Nader et al, (2025) note that moreover, strategic marketing approaches encompass various promotional strategies aimed at enhancing brand visibility, attracting new customers and fostering customer loyalty. Utilising both traditional and digital marketing channels, such as print advertising, social media marketing and online platforms, feedlot operators can reach a broader audience and create meaningful connections with customers (Atieno, 2010). Furthermore, establishing partnerships with retailers, restaurants and other stakeholders in the beef supply chain can facilitate market penetration and enhance distribution channels, thereby increasing market access and revenue opportunities for feedlot operators (Atieno, 2010).

2.5.3 Operational Efficiency

Operational efficiency is critical for maximising profitability in business operations. Chitakunye and Mushonga (2020) emphasise the role of efficient feedlot management practices, such as feed management and waste management systems, in minimising

production costs. Operational efficiency stands as a cornerstone for maximising profitability within business operations, a sentiment strongly underscored by Chitakunye and Mushonga (2020). Their research emphasises that effective feedlot management practices are integral to optimising operational efficiency, with particular attention given to areas such as feed management and waste management systems. Efficient feed management involves precise monitoring and control of feed intake, ensuring that cattle receive adequate nutrition while minimising feed wastage. Implementing streamlined processes and utilising technology-driven solutions can enhance feed utilisation efficiency, thereby reducing overall production costs and enhancing profitability.

Waste management systems also play a pivotal role in operational efficiency within feedlot operations. Proper handling and disposal of waste, including manure and other by-products, are essential for maintaining environmental sustainability and regulatory compliance. Chitakunye and Mushonga (2020) suggest that implementing efficient waste management practices can mitigate environmental risks and operational disruptions while also reducing the operational costs associated with waste disposal.

Operational efficiency extends beyond feed and waste management to encompass broader aspects of feedlot operations. Efficient utilisation of labour, machinery and infrastructure is equally critical for maximising productivity and minimising costs

(Mallareddy, Thirumalaikumar, Balasubramanian et al, 2023). Implementing standardised operating procedures, providing ongoing training and development for staff and regularly maintaining equipment and facilities can contribute to improved operational efficiency (Nkurunziza and Ndayiziga, 2018). Additionally, leveraging technology and automation solutions can streamline processes, reduce human error and enhance overall efficiency in feedlot operations.

2.5.4 Technological Innovations

Technological innovations play a pivotal role in driving operational efficiency and profitability within feedlot operations, as highlighted by Kolade and Thompson (2018). Their research underscores the transformative impact of technologies like precision feeding and genetic selection in enhancing overall performance. Precision feeding involves the precise monitoring and control of feed intake, allowing for customised nutrition plans tailored to individual animals' needs (Pomar and Remus, 2023). Through leveraging advanced monitoring systems and data analytics, feedlot operators can optimise feed utilisation, minimise wastage and improve feed conversion efficiency, thereby reducing overall production costs and maximising profitability.

In addition to precision feeding, genetic selection represents another key technological innovation that can significantly impact feedlot operations. Genetic selection involves

the deliberate breeding of cattle to enhance desirable traits such as growth rate, feed efficiency and disease resistance (Yousuf, Yusuf and Mohammed, 2024).

Through selectively breeding animals with superior genetic characteristics, feedlot operators can improve overall herd performance, reduce production cycle times and increase carcass yields. Moreover, genetic advancements can contribute to the development of more resilient and disease-resistant cattle breeds, reducing veterinary costs and mitigating health-related risks, thereby enhancing profitability in the long run (Sacarrão-Birrento, Harrison and de Almeida, 2024).

2.5.5 Regional Contextual Factors

Regional contextual factors significantly influence the profitability dynamics of business operations, as highlighted by Harrison et al. (2016). Variations in climate, feed availability, infrastructure and market access across different regions contribute to disparities in financial outcomes for feedlot operators. Regions with favourable climates and abundant feed resources may experience lower production costs and higher profitability compared to areas with harsher climates and limited access to feed (Lamega, 2023). Understanding these regional differences is essential for feedlot operators to develop context-specific strategies that optimise resource utilisation and minimise costs while maximising revenue streams.

Moreover, policy interventions and regulatory frameworks play a crucial role in shaping the operating environment for feedlot operators, as emphasised by Martin and Rehman (2017). Government policies related to land use, environmental regulations, trade tariffs and agricultural subsidies can significantly impact feedlot profitability by influencing input costs, market access and compliance requirements. Changes in environmental regulations may require feedlot operators to invest in costly waste management systems or adopt more sustainable production practices, thereby affecting overall profitability (Slayi, Zhou and Jaja, 2023). Similarly, trade policies and import/export regulations can impact market access and beef prices, directly influencing feedlot revenue streams.

The interaction between regional contextual factors and regulatory frameworks underscores the need for feedlot operators to conduct context-specific analyses and develop tailored management strategies. According to Sorinola (2024), a thorough understanding of regional climatic conditions, feed availability, infrastructure limitations and market dynamics is essential for informed decision-making and risk management. Moreover, proactive engagement with policymakers and industry stakeholders can help feedlot operators navigate regulatory challenges and advocate for policies that support sustainable and profitable operations (Loving, 2023).

2.5.6 Animal Health

Maintaining animal health is essential for ensuring optimal performance and profitability in business operations. Effective disease management strategies and veterinary care protocols are critical for minimising production losses (Smith et al., 2018). Animal health is paramount for sustaining optimal performance and profitability within business operations, as underscored by Smith et al. (2018). The implementation of effective disease management strategies and veterinary care protocols is crucial for mitigating production losses and safeguarding the health and well-being of market products. Diseases such as bovine respiratory disease (BRD), infectious bovine keratoconjunctivitis (IBK) and bovine viral diarrhoea (BVD) pose significant threats to feedlot profitability due to reduced feed conversion efficiency, increased treatment costs and elevated mortality rates. Therefore, proactive measures such as vaccination programs, biosecurity protocols and regular health monitoring are indispensable for preventing disease outbreaks and maintaining the overall health status of market products.

In addition to disease prevention and control, nutrition plays a pivotal role in supporting animal health and performance in feedlot operations. Nutritional imbalances, inadequate feed quality and suboptimal feeding practices can compromise cattle's health, resulting in reduced growth rates, impaired immune function and

increased susceptibility to diseases. Therefore, feedlot operators must formulate balanced and nutritious diets tailored to the specific nutritional requirements of market products at different stages of production. Moreover, the use of feed additives such as ionophores, antibiotics and probiotics can help improve feed efficiency, enhance nutrient utilisation and support gut health, thereby promoting overall animal health and performance.

Furthermore, environmental management practices are essential for mitigating stressors and promoting animal welfare in feedlot settings. Adequate ventilation, proper drainage and comfortable resting areas are essential for minimising heat stress, mud accumulation and injuries, which can adversely affect cattle health and well-being. Moreover, implementing sound management practices and waste disposal protocols is critical for reducing the risk of environmental contamination, pathogen transmission and disease outbreaks.

2.5.7 Feedlot Size

The size of a feedlot has a notable impact on its profitability, as highlighted by Thompson and Meyer (2015). Larger operations tend to benefit from economies of scale, enjoying lower average costs per unit of output due to spreading fixed costs over a larger number of animals. This enables larger feedlots to achieve cost efficiencies in areas such as feed procurement, labour utilisation, equipment maintenance and

infrastructure investment (Mwacalimba, Kimeli and Tiernan, 2025). Additionally, larger feedlots may have greater bargaining power with suppliers and buyers, allowing them to negotiate favourable terms and prices for inputs and outputs. As a result, larger feedlots often have a competitive advantage in terms of cost competitiveness and market positioning, contributing to higher profitability levels compared to smaller counterparts.

Conversely, smaller feedlots may possess certain advantages in terms of flexibility and management efficiency, as noted by Lobley et al. (2017). Smaller operations have the ability to adapt more quickly to changing market conditions and consumer preferences, allowing them to capitalise on niche markets, speciality products and custom feeding programs. Moreover, smaller feedlots may have lower organisational complexity and bureaucratic overhead, facilitate more agile decision-making processes and streamline operations (Mwacalimba, Kimeli and Tiernan, 2025). Additionally, smaller feedlots may benefit from stronger owner-manager relationships, leading to greater accountability, commitment and attention to detail in day-to-day management activities. These factors can contribute to improved operational efficiency and cost-effectiveness, offsetting some of the scale-related advantages enjoyed by larger feedlots.

2.5.8 Labour Management

Efficient labour management is crucial for optimising profitability in feedlot operations. Ensuring a skilled workforce and implementing effective training programs can enhance operational efficiency and minimise production costs (Chitakunye and Mushonga, 2020). Efficient labour management plays a critical role in optimising profitability in feedlot operations, not only on a global scale but also within the specific contexts of Africa and Zimbabwe. Chitakunye and Mushonga (2020) emphasise the significance of skilled labour and effective training programs in enhancing operational efficiency and minimising production costs. Globally, feedlot operators face increasing pressure to maximise productivity while containing labour expenses, necessitating strategic approaches to workforce management. This involves recruiting and retaining qualified personnel, providing ongoing training and professional development opportunities and implementing performance-based incentive structures.

In the African context, labour management presents unique challenges and opportunities driven by factors such as demographic trends, labour market dynamics and regulatory frameworks. With a growing population and expanding urbanisation, African feedlot operators must navigate labour supply constraints, skill shortages and competition for talent from other sectors (Sindhu, 2024). Additionally, the informal

nature of many African labour markets and the prevalence of subsistence agriculture pose challenges for formalising employment relationships and ensuring compliance with labour regulations. However, proactive measures such as skills development initiatives, vocational training programs and public-private partnerships can help address these challenges, enabling feedlot operators to build a skilled and productive workforce that drives sustainable growth and profitability in the African feedlot sector (Yunus, Mohamad, Bahari et al, 2024).

2.5.9 Environmental Sustainability

Environmental sustainability is increasingly recognised as a critical aspect of business operations. Implementing environmentally conscious practices can confer competitive advantages and enhance long-term profitability (Salau et al., 2020). Environmental sustainability is a paramount consideration in business operations, not only on a global scale but also within the specific contexts of Africa, the Southern African Development Community (SADC) and Zimbabwe. Salau et al. (2020) emphasise the growing importance of environmentally conscious practices in feedlot operations, highlighting their potential to confer competitive advantages and enhance long-term profitability. Increasing awareness of environmental issues, coupled with regulatory pressures and consumer preferences for sustainably produced food, has heightened the importance of adopting sustainable practices in agriculture, including feedlot

operations (Caccialanza, Cerrato and Galli, 2023). This has led to growing interest and investment in technologies and management approaches that reduce environmental impacts, such as waste management systems, water conservation measures and renewable energy solutions.

2.5.10 Regulatory Frameworks

Regulatory frameworks governing feedlot operations can impact profitability. Compliance with environmental regulations, animal welfare standards and food safety requirements is essential for maintaining market access and reputation (Martin and Rehman, 2017). Regulatory frameworks governing feedlot operations play a crucial role in shaping profitability, with compliance requirements varying across different countries, including Zimbabwe. Martin and Rehman (2017) emphasise the significance of regulatory compliance in areas such as environmental protection, animal welfare and food safety, highlighting its impact on market access and reputation. In Zimbabwe, as in many other countries, feedlot operators must adhere to a range of regulatory requirements established by government agencies and industry bodies to ensure the sustainable and responsible operation of their facilities.

In Zimbabwe, the regulatory landscape for feedlot operations is influenced by national legislation, such as the Environmental Management Act (EMA), which sets out requirements for environmental impact assessments, waste management and pollution

control (Manzungu, 2024). Additionally, animal welfare standards are governed by legislation such as the Animal Welfare Act, which outlines provisions for the humane treatment of livestock in feedlots and other agricultural settings (Leahy, 2023). Furthermore, food safety regulations enforced by the Zimbabwean government, such as those administered by the Ministry of Health and Child Care and the Zimbabwe National Standards Authority, dictate standards for the handling, processing and distribution of meat products to safeguard public health and consumer confidence (Chiware and Vyas-Doorgapersad, 2023).

Comparatively, other countries may have similar regulatory frameworks governing feedlot operations, but the specific requirements and enforcement mechanisms can vary significantly. In some developed countries like the United States and Australia, feedlot operators must comply with stringent environmental regulations, animal welfare standards and food safety requirements imposed by federal and state governments (Steier, 2023). These regulations may include mandatory reporting of greenhouse gas emissions, strict protocols for animal health and welfare and comprehensive food safety management systems.

2.5.11 Infrastructure

Investments in infrastructure, such as feed storage facilities, water systems and handling equipment, are essential for optimising operational efficiency and ensuring

animal welfare standards (Harrison et al., 2016). Investments in infrastructure are crucial for business operations across various regions, including Northern Africa, Southern and Central Africa and other countries globally. Harrison et al. (2016) underscore the importance of infrastructure, such as feed storage facilities, water systems and handling equipment, in optimising operational efficiency and ensuring compliance with animal welfare standards. However, the infrastructure landscape and challenges faced by feedlot operators can vary significantly between these regions and other countries.

In Northern Africa, where arid and semi-arid climates are prevalent, access to water is a critical infrastructure challenge for feedlot operators. Limited water resources and unreliable water supply systems can pose significant constraints on feedlot operations, affecting both animal welfare and operational efficiency (Dayoub, Shnaigat, Tarawneh et al, 2024). As a result, feedlot operators in Northern Africa may need to invest in alternative water sources, such as groundwater wells or water recycling systems, to ensure adequate water supply for their operations. Additionally, infrastructure investments in feed storage facilities with climate-controlled environments may be necessary to mitigate the risk of feed spoilage in hot and dry conditions (George and George, 2023).

2.5.12 Market Access

Market access is a vital determinant of profitability in business operations, with implications for feedlot operators in Zimbabwe and other countries. Boyles et al. (2019) highlight the significance of developing strategic partnerships with suppliers, processors and distributors to enhance market access and create value. In Zimbabwe, as in many other countries, feedlot operators face challenges related to market accessibility, including currency volatility, infrastructure limitations and regulatory barriers.

In Zimbabwe, currency volatility has been a persistent challenge, impacting the cost of inputs such as animal feed, veterinary supplies and equipment (Mudzengi, Dahwa, Mubvuma et al, 2025). Fluctuations in the value of the Zimbabwean dollar can erode profit margins and increase the uncertainty of financial planning for feedlot operators (Stockton, 2024). Additionally, infrastructure limitations, such as inadequate transportation networks and storage facilities, can hinder market access by limiting the efficient movement of livestock and meat products to domestic and international markets.

Moreover, regulatory barriers, including trade restrictions and import/export regulations, can affect the ability of feedlot operators to access lucrative markets and compete effectively with foreign producers. Rashid (2025) states that compliance with

sanitary and phytosanitary standards imposed by importing countries may require additional investments in quality assurance systems and certification processes to demonstrate product safety and quality. Furthermore, trade agreements and regional economic integration initiatives may influence market access conditions for feedlot operators, creating opportunities or challenges depending on the alignment of national policies with regional trade frameworks (Hudson, 2023).

2.6 Strategies that may improve profits in business

2.6.1 Optimising Feedlot Management Practices

Optimising feedlot management practices is crucial for maximising efficiency, reducing costs and ultimately improving profitability in business operations. Efficient feeding protocols, waste management systems and strategic feed sourcing strategies play integral roles in achieving these objectives. Firstly, efficient feeding protocols are essential for ensuring that cattle receive optimal nutrition while minimising feed wastage. Studies by Smith et al. (2018) emphasise the importance of implementing feeding schedules and portion control measures to prevent overfeeding and reduce costs. Additionally, utilising feed additives and supplements can enhance feed efficiency and promote animal health, further optimising feeding practices (Kolade and Thompson, 2018).

Secondly, waste management systems are critical for minimising environmental impact and maximising resource utilisation in feedlot operations. Proper disposal of

manure and other waste products not only reduces pollution but also creates opportunities for generating value from waste materials. Research by Salau et al. (2020) highlights the potential benefits of utilising manure as fertiliser for crop production, thereby closing the nutrient loop and reducing reliance on external inputs.

Thirdly, strategic feed sourcing strategies are essential for minimising costs and ensuring a reliable supply of high-quality feed ingredients. Studies by Gororo (2015) emphasise the importance of diversifying feed sources to mitigate price volatility and reduce dependence on single suppliers. Moreover, establishing long-term contracts with reliable suppliers and exploring alternative feed sources can further optimise feed sourcing strategies (Boyles et al., 2019).

2.6.2 Value-added services

Value-added services, such as custom feeding programs, animal health monitoring and carcass grading services, have been increasingly recognised as strategies to differentiate feedlot offerings and capture additional value from customers. Research suggests that successful implementation of value-added services can lead to improved customer satisfaction, increased market competitiveness and enhanced profitability for feedlot operations (Mahbubi, 2023). Custom feeding programs tailored to the specific needs and preferences of individual customers have been shown to be particularly effective in attracting and retaining clients. Studies by Smith et al. (2018) and Boyles

et al. (2019) highlight the importance of flexibility and customisation in meeting customer requirements, thereby fostering long-term relationships and loyalty.

Additionally, animal health monitoring services play a crucial role in ensuring the well-being and productivity of cattle in feedlot operations. Research by Salau et al. (2020) emphasises the importance of proactive health management practices, such as regular check-ups, vaccinations and disease prevention measures, in minimising production losses and maximising profitability. However, while value-added services have the potential to yield significant benefits, their successful implementation requires careful consideration of various factors. Challenges such as high implementation costs, staff training requirements and regulatory compliance issues can pose barriers to adoption and hinder the effectiveness of value-added services. Studies by Martin and Rehman (2017) and Harrison et al. (2016) highlight the importance of assessing the feasibility and sustainability of value-added services before implementation to ensure their long-term viability.

2.6.3 Market Diversification

Market diversification strategies, which involve expanding market reach, targeting niche markets with specialised products and establishing strategic partnerships, have been explored as means to enhance competitiveness and profitability in the business industry (Baadjieand Manyaga, 2023). Research suggests that successful

implementation of market diversification initiatives can lead to increased revenue streams, reduced market risks and improved overall performance.

Expanding market reach through diversifying product offerings has been identified as a promising strategy for feedlot operations. Studies by Boyles et al. (2019) and Atieno (2010) highlight the importance of offering a variety of products to cater to diverse customer needs and preferences. Expanding their product portfolio to include different grades of beef, value-added products and speciality cuts, feedlot operators can access new market segments and capture additional value from customers. However, the success of this strategy depends on effective market research, product development and marketing efforts to identify and capitalise on emerging opportunities.

Targeting niche markets with specialised products has also been shown to be an effective way to differentiate feedlot offerings and capture premium prices. Research by Salau et al. (2020) and Gororo (2015) emphasises the importance of identifying niche market segments with specific preferences, such as organic or grass-fed beef and tailoring product offerings to meet their needs. Through focussing on niche markets, feedlot operators can command higher prices and achieve greater profitability compared to competing in mainstream markets (Shapiro, 2024). However, entering niche markets requires careful consideration of factors such as production requirements, certification standards and consumer demand trends to ensure success.

Establishing strategic partnerships with downstream stakeholders, such as processors, distributors and retailers, can provide feedlot operations with access to premium market segments and value-added opportunities. Studies by Martin and Rehman (2017) and Thompson and Meyer (2015) highlight the benefits of collaborating with industry partners to leverage their expertise, resources and market networks. Through forming strategic alliances, feedlot operators can gain access to new distribution channels, secure long-term contracts and enhance their competitive position in the marketplace. However, the success of partnership initiatives depends on effective relationship management, alignment of interests and mutual trust among stakeholders.

While market diversification offers significant potential benefits, it also entails certain risks and challenges that feedlot operators must navigate. Factors such as increased competition, changing consumer preferences and market volatility can pose threats to the success of diversification initiatives. Studies by Harrison et al. (2016) and Lobley et al. (2017) emphasise the importance of conducting thorough market analyses, risk assessments and feasibility studies before embarking on diversification strategies. Additionally, effective marketing, distribution and quality control measures are essential to ensuring the success and sustainability of market diversification efforts.

2.6.4 Risk Management Strategies

Risk management strategies play a crucial role in mitigating exposure to various uncertainties and fluctuations in the business industry. Implementing effective risk management measures can help feedlot operators navigate market volatility, currency fluctuations and other external risks, thereby safeguarding profitability and ensuring long-term sustainability (Salau et al. (2020).

Hedging strategies, such as futures contracts and options, are commonly used by feedlot operators to manage price risks associated with fluctuations in feed prices, cattle prices and input costs. Research by Boyles et al. (2019) and Thompson and Meyer (2015) highlights the importance of hedging as a tool for locking in favourable prices and reducing exposure to adverse market movements. Forward contracts are another risk management tool that feeder operators can utilise to mitigate price risks and secure future revenue streams. Through entering into agreements to sell cattle or beef products at predetermined prices and delivery dates, feedlot operators can lock in prices and reduce uncertainty associated with market fluctuations. Studies by Gororo (2015) and Atieno (2010) suggest that forward contracts can provide feedlot operators with greater control over pricing and revenue management, thereby improving overall financial performance and reducing exposure to market risks.

Diversifying revenue streams is another effective risk management strategy that feedlot operators can employ to spread risk and enhance resilience to market fluctuations. Through expanding into complementary business activities, such as value-added processing, retailing, or agri-tourism, feedlot operators can reduce dependence on a single revenue source and diversify income streams. Research by Martin and Rehman (2017) and Salau et al. (2020) underscores the importance of diversification as a means to mitigate concentration risk and enhance long-term profitability. However, diversification efforts should be carefully planned and aligned with the core competencies and strategic objectives of the feedlot operation to ensure success.

While risk management strategies offer significant potential benefits in terms of reducing exposure to market volatility and enhancing financial resilience, they also entail certain challenges and considerations that feedlot operators must address (Costea, Leah, Pașcalău et al, 2023). Factors such as liquidity constraints, counterparty risks and regulatory requirements can impact the effectiveness and feasibility of risk management initiatives. Moreover, successful implementation of risk management strategies requires expertise, resources and access to relevant market information. Studies by Harrison et al. (2016) and Lobley et al. (2017) emphasise the importance of risk assessment, contingency planning and ongoing monitoring and evaluation to

ensure the effectiveness and adaptability of risk management strategies in response to changing market conditions.

2.6.5 Strategic Alliances and Collaborations

Strategic alliances and collaborations play a vital role in the business by enabling feedlot operators to leverage complementary strengths, share resources and explore new business opportunities. Collaborating with suppliers, processors and research institutions can offer several advantages, including access to expertise, technology and market perspectives that can enhance operational efficiency and competitiveness.

Research by Atieno (2010) and Zhou and Nhamo (2019) highlights the significance of forming strategic alliances with suppliers to ensure a stable and reliable supply of inputs such as feed, medications and equipment. Through establishing long-term partnerships with trusted suppliers, feedlot operators can negotiate favourable terms, secure consistent quality and availability of inputs and mitigate risks associated with supply chain disruptions.

Collaborating with processors is another strategic approach that feedlot operators can adopt to add value to their products, access premium markets and capture additional value from downstream activities. Through partnering with processors to develop branded beef products, customised cuts, or value-added services, feedlot operators can differentiate their offerings, meet evolving consumer preferences and command higher

prices. Studies by Salau et al. (2020) and Carter and Brandt (2021) demonstrate the potential benefits of strategic alliances with processors in enhancing product differentiation, expanding market reach and increasing profitability.

Moreover, forming strategic collaborations with research institutions and academic organisations can provide feedlot operators with access to cutting-edge research, technical expertise and industry best practices. Slayi, Zhou and Jaja (2023) notes that collaborative research projects can help address key challenges facing the business industry, such as improving animal health and welfare, optimising feed formulations and enhancing environmental sustainability.

2.6.6 Cost Reduction Initiatives

Cost reduction initiatives are crucial for improving profitability in business operations and various strategies can be implemented to minimise operational expenses and enhance financial performance. Optimising feed formulations to minimise costs is a fundamental approach emphasised by researchers such as Gororo (2015) and Lombard et al. (2018). Through carefully selecting ingredients and balancing nutritional requirements, feedlot operators can achieve optimal animal performance while minimising feed expenses. Additionally, negotiating bulk purchase discounts for inputs, such as feed ingredients, medications and equipment, can help reduce procurement costs and improve overall cost efficiency. Studies by Nkurunziza and

Ndayiziga (2018) demonstrate the potential benefits of strategic purchasing strategies in achieving cost savings and enhancing profitability.

Improving energy efficiency is another cost reduction initiative that feedlot operators can undertake to lower utility bills and minimise operational expenses. Implementing energy-saving technologies, optimising equipment usage and adopting renewable energy solutions can help reduce electricity and fuel costs while minimising environmental impact. Research by Carter and Brandt (2021) highlights the importance of energy management practices in enhancing operational efficiency and reducing production costs. Furthermore, implementing measures to optimise labour efficiency and reduce labour costs can contribute to overall cost reduction efforts in business operations. Efficient labour management practices, such as workforce scheduling, task optimisation and training programs, can help maximise productivity while minimising labour expenses. Studies by Chitakunye and Mushonga (2020) emphasise the role of skilled management personnel and effective training programs in improving operational efficiency and reducing labour costs.

Moreover, implementing waste management systems to minimise waste generation and disposal costs is essential for achieving cost reduction objectives in feedlot operations. Adopting technologies for waste treatment, recycling and reuse can help minimise environmental impact while reducing waste management expenses.

Research by Salau et al. (2020) highlights the potential benefits of waste management practices in enhancing environmental sustainability and reducing operational costs.

2.6.7 Innovative Business Models

Innovative business models play a crucial role in enhancing profitability and mitigating risks in business operations by exploring alternative revenue streams and diversifying product offerings. One approach highlighted in the literature is the utilisation of by-products and value-added services to generate additional revenue streams. Researchers such as Kolade and Thompson (2018) emphasise the potential of by-product utilisation, such as converting waste products into biofuels or fertiliser, to create value and reduce waste disposal costs. Additionally, offering value-added services such as custom feeding programs, animal health monitoring and carcass grading services can differentiate the feedlot's offerings and capture additional value from customers (Salau et al., 2020).

Diversifying product offerings is another key strategy employed by feedlot operators to mitigate risks associated with market fluctuations and enhance profitability. Through expanding the range of products available, feedlot operators can cater to diverse customer preferences and market demands. Studies by Boyles et al. (2019) emphasise the importance of targeting niche markets with specialised products to capture higher margins and reduce dependence on commodity markets. Moreover,

establishing strategic partnerships with downstream stakeholders, such as processors, retailers and foodservice providers, can facilitate access to premium market segments and create value-added opportunities (Atieno, 2010).

However, while innovative business models offer opportunities for revenue diversification and risk mitigation, they also present challenges and potential pitfalls. Implementing new business models may require significant upfront investments in infrastructure, technology and human capital, which can strain financial resources and impact profitability in the short term. Moreover, navigating regulatory requirements, market dynamics and consumer preferences in new product markets can pose challenges and uncertainties for feedlot operators (Martin and Rehman, 2017).

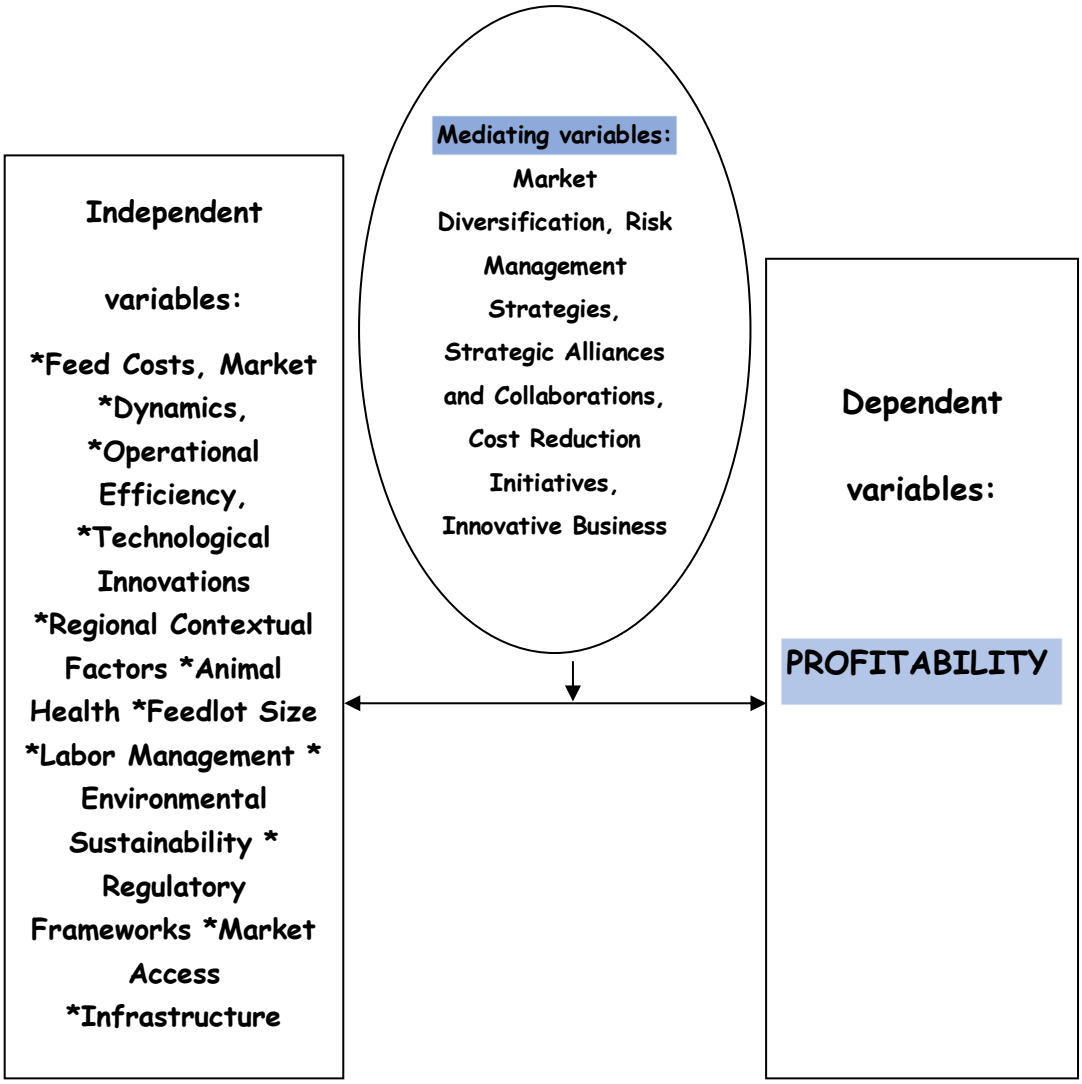
Despite these challenges, successful implementation of innovative business models can lead to significant benefits for feedlot operations. Studies by Carter and Brandt (2021) highlight examples of feedlot operators that have successfully diversified their product offerings and adopted value-added services, resulting in improved profitability and competitive advantage.

2.7 Conceptual Framework

According to Fisher et al (2010), a conceptual framework is a collection of ideas, values and standards from a variety of disciplines of study, whereas (Mugenda and Mugenda, 2012) defined it as a mainframe or structure that lends credibility to

research. In light of the foregoing, this study created a framework that accommodated independent factors such as feed costs, market dynamics, operational efficiency, technological innovations, regional contextual factors, animal health, feedlot size, labour management, environmental sustainability as well as dependant variables such as profitability. Further, the study also included mediating variables that encompassed the following five factors market diversification, risk management strategies, strategic alliances and collaborations, cost reduction initiatives and innovative business models. The conceptual framework is illustrated diagrammatically by figure 2.1.

Figure 2.1: Conceptual Framework



Source: Researcher (2024)

The conceptual framework outlines the nexus between various independent variables, a dependent variable and mediating variables. At its core, the framework identifies 12 independent variables, including feed costs, market dynamics and operational efficiency, which are hypothesized to directly influence the dependent variable,

profitability. These factors represent key determinants that impact the financial performance of feedlot operations and are essential focal points for research and analysis.

Additionally, the framework introduces five moderating variables, such as market diversification strategies and risk management approaches, which can influence the relationship between the independent variables and profitability. These moderating variables serve to enhance or diminish the effects of the independent variables on the dependent variable. For example, effective risk management strategies may mitigate the negative impact of market volatility on profitability, while innovative business models could amplify the positive effects of operational efficiency on financial performance. (Yang, Ishtiaq and Anwar, 2018)

Through conceptualising these relationships, the framework provides a structured approach for understanding the dynamics of profitability in cattle feedlot operations. Researchers can use this framework to formulate research hypotheses, design empirical studies and analyse data to uncover data into the factors driving profitability and the mechanisms through which they operate (Kyrgidou and Spyropoulou, 2013). Ultimately, the conceptual framework serves as a guiding tool for investigating and addressing the challenges and opportunities inherent in the management of cattle feedlot businesses.

2.8 Chapter summary

This chapter has provided a comprehensive overview of the factors influencing profitability in cattle feedlot operations, examining key themes such as feed costs, market dynamics, operational efficiency, regional contextual factors and strategies for enhancing profitability. Drawing empirics from various scholars, the chapter establishes a robust conceptual framework that underpins the study's objectives. Additionally, it presents a theoretical framework relevant to the study's focus. In the discursive sections, an extensive review of existing literature was done to gain an understanding of the nexus of these factors and their implications for feedlot management. This was gleaned through a thorough review of the global content and local literature on the subject. The chapter also identified critical determinants and strategies, underscored the multifaceted nature of profitability in this industry and emphasised the importance of adopting innovative approaches to optimise financial performance.

CHAPTER 3 METHODOLOGY

3.1 Introduction

This chapter explains the data collection processes that was followed in this study. The first section explains the research design, followed by sections describing the population followed by the sampling techniques that the study used to gather data from participants. The chapter also determines the sample size to be used for data collection. The chapter also explains data collection instruments and the sections that followed focused on data analysis procedures and ethical considerations to be observed during the conduct of this study. The chapter closed with a summary.

3.2 Research design

This study adopted a case study design using mixed method approaches, grounded in both positivist and interpretivist traditions to interrogate the relationships between profitability and the variables influencing it at Muhlanguleni cattle feedlot in Chiredzi, Zimbabwe. The study fits within the explanatory study due to its primary aim of understanding and elucidating the reasons behind variations in profitability. The explanatory nature of the study is anchored in its focus on explaining why profit levels fluctuated and what factors contributed to high or low profitability from 2020 to 2022.

The case study design was applied in this study to enable an in-depth examination of a specific feedlot operation, allowing the researcher to assess and explain the internal

and external factors that influenced profit margins during the study period. Explanatory studies are well-suited for understanding cause-and-effect relationships, which aligns with the study's objective of explaining the role of feed costs, operational efficiency, market dynamics and other factors in influencing profitability (Yin, 2014).

A causal-explanatory study examines cause-and-effect relationships between variables, determining how independent variables (e.g., operational efficiency, market dynamics, cost structures) influence the dependent variable (profitability). The study aims to explain why profitability levels at Muhlanguleni Cattle Feedlot fluctuate and how different factors contribute to high or low profits.

Garrido-Moreno, Martín-Rojas and García-Morales 2024) argue that the use of mixed methods strengthens the explanatory design by integrating quantitative analysis (to measure profit levels and identify statistical relationships) with qualitative views (to understand contextual factors, business strategies and managerial decision-making). The positivist approach (survey data) provides statistical generalizations, while the interpretivist approach (key informant interviews) offers rich contextual explanations of profitability trends (Tracy, 2024). This allows for a holistic exploration of the study's objectives. Specifically, the quantitative aspect helps in assessing the profit levels at Muhlanguleni cattle feedlot (Objective 1), while qualitative data helps in

understanding the factors leading to high or low profits (Objective 2) and providing strategies for improvement (Objective 3)

The mixed methods design allows the study to balance positivist approaches, which focus on statistical generalization from the survey data, with interpretivist approaches, which delve into contextual views and detailed explanations from qualitative interviews (Mrabti and Alaoui, 2024). This combined approach mitigates the limitations of relying on a single method, making it ideal for addressing the complexity of profitability factors in cattle feedlot operations (Dawadi, Shrestha and Giri, 2021). Given the research objectives, the explanatory study design ensures that both the "what" (profit levels) and "why" (factors influencing profits) questions are answered, offering a comprehensive analysis of profitability dynamics at Muhlanguleni cattle feedlot from 2020 to 2022.

3.3 Population and sampling

Data for this study was be collected from the population and particularly from the sample. These are explained in detail in the following sub-sections.

3.3.1 Population of the study

The population of the study encompasses all the 312 cattle farmers and in Wards (9, 10 and 11) in Chikombedzi area in Chiredzi; who number 78 per ward (Sustainable Agriculture Transformation, [SAT] 2023) this gave 312 cattle farmers in Chiredzi in

the selected wards which makes the Muhlanguleni Cattle feedlot. The number of farmer households quoted by SAT (ibid) were however, statistics based on the 2022 census and rapid growing of cattle farming activities may have considerably increased the population. The key informants were given the designation of KII 1-KII7 in order to ensure anonymity of key informants.

3.3.2 Study sample

Only information rich participants who had in-depth knowledge of the topic under study were considered as key informants and respondents for the household questionnaire. Cattle farmers were selected because they are the ones involved in beef production and marketing and interact with the environment on a daily basis. The study used the sample size calculator (Robson's formula) to come up with a sample size of 173. The following formula was used to calculate the sample size:

$$n = \frac{Z^2 P(1-P)}{d^2}$$

where n = sample size,
Z = Z statistic for a level of confidence,
P = expected prevalence or proportion
(in proportion of one; if 20%, $P = 0.2$), and
d = precision
(in proportion of one; if 5%, $d = 0.05$).

Z = 1.96 (for 95% confidence interval)

P = 5% = 0.05

d = 0.05

$$n = \frac{(1.96)^2\ 0.05\ (1-0.05)}{0.05^2}$$

Sample size = **173 participants**

Local extension officers (AGRITEX and Veterinary) were selected as key informants because they jointly monitor cattle farmers on husbandry and other production technologies and are hence, important stakeholders. The EMA official who serves ward 9, 10 and 11 were selected as a key informant because the officials are responsible for monitoring feedlot enterprise, beef production and fodder production on the ground. Local traditional leaders also selected as key informants because they are responsible for land allocation for markets and are joint monitors of the beef production and other sources of livelihood together with Veterinary and other development partners. The study also selected the ward Councillors due to their awareness of the developmental (Market) challenges affecting their wards.

Table 3.1: Total population and sample size for each group of respondents

Group of Respondents	**Total Population**	**Sample Size**
Cattle Farmers (Wards 9, 10 and 11)	312	173
Local Extension Officers (AGRITEX, Veterinary)	3	3
EMA Official	1	1
Local Traditional Leaders	1	1
Ward Councillors	3	3

Source: Researcher (2024).

Table 3.1 shows the diversity of the sample, indicating the total population for each group and the specific sampling technique used to determine the sample size for each respondent category.

3.3.3 Stratified Random Sampling

The study used stratified random sampling to select 173 participants for the study, with the four selected wards serving as strata. Participants were chosen from the Veterinary cattle producers lists, which acted as the sampling frame with the 3 wards forming the strata. The random number generator function in Microsoft Office Excel was utilised for this purpose. However, the questionnaires were validated based on the completeness of responses and were used for data analysis. The interviews with respondents were conducted at their homes and the study were assisted by local extension officers in identifying households. In cases where the household head (the person responsible for decision-making) is consistently unavailable, the study selected another household to replace them. Table 3.2 shows the sampling techniques to be for various populations in the study

Table 3.2: Sampling techniques to be for various populations in the study

Population	Sampling Technique	Description
Cattle Farmers in Wards 9, 10 and 11	**Stratified Random Sampling**	Stratified based on wards, 173 participants were selected using a sample size calculator (Robson's formula) and Microsoft Excel random number generator.
Local Extension Officers (AGRITEX, Veterinary)	**Purposive Sampling**	Officers selected for their role in monitoring cattle farming, production technologies and their involvement in the local beef production system.
EMA Official	**Purposive Sampling**	Selected due to responsibility for overseeing the feedlot enterprise, beef production and fodder production in the selected wards.
Local Traditional Leaders	**Purposive Sampling**	Selected for their role in land allocation and as joint monitors of beef production along with veterinary officers and development partners.
Ward Councillors	**Purposive Sampling**	Chosen for their knowledge of the development and market challenges affecting their wards, which are relevant to the study.

Source: Researcher (2024).

3.4 Data Collection Techniques

The research employed various data collection techniques, including questionnaires, key informant interviews and participant observation, to gather reliable data for the study. These techniques are essential in capturing detailed view from participants and stakeholders.

3.4.1 Questionnaire

The questionnaire was a vital data collection technique in this research. To enhance its effectiveness, collaboration with local extension officers ensured proper coordination with participants, minimising the risk of unavailability during visits. As Hair Jr, Page and Brunsveld (2019) emphasize, questionnaires are effective tools for efficiently gathering large amounts of data from diverse participants in a relatively short period. The questionnaire was designed to include both closed and open-ended questions, allowing for an in-depth understanding of the various factors affecting cattle farming operations. Specific topics included the constraints faced by cattle farmers, the role of women in marketing and the livelihoods and coping strategies employed by farming households. The semi-structured nature of the questionnaire allows flexibility in gathering personalized responses, ensuring that all relevant perspectives are effectively captured for thorough analysis (DeJonckheere and Vaughn, 2019).

3.4.2 Key Informant Interview Technique

Key informant interviews were used to gather detailed information from knowledgeable individuals in the cattle farming sector. The interviews were carefully planned and scheduled in advance to avoid disrupting the participants' work activities. The interview guide was aligned with the research questions, ensuring comprehensive coverage of key topics. The study employed probing techniques during the interviews to explore specific areas in depth, based on participant responses. Following the guidance of Andrew, Pedersen and McEvoy (2019), these interviews maintained

participant motivation and create an interactive environment, promoting open and insightful discussions.

3.5 Pilot Study

A pilot study is a small-scale preliminary study conducted to assess the feasibility, duration, cost and any adverse events, as well as to refine the study design before conducting a full-scale research project (Ikesaka, Langlois, Carrier et al, 2018). The study conducted a pilot study to determine the feasibility of the research and to pre-test the questionnaire for suitability. During this process, the study administered 7 questionnaires to individuals from the population and conduct one key informant interview. The pilot study helped the study become familiar with the key aspects of the study and refine the instruments by addressing ambiguities and eliminating repetitive questions as well as ambiguous areas. It also assessed the clarity and relevance of the questions and estimate the time required for respondents to complete the interviews and questionnaires. The pilot study helped identify questions that require particular emphasis and further probing during the actual data collection.

3.6 Data collection procedure

The data collection procedure was carried out with strict adherence to established protocols. Before commencing data collection, official approval was sought from the relevant district-level authority, specifically the District Development Coordinator's office. This process facilitated by presenting the official approval letter obtained from

Africa University, providing a clear endorsement of the research's legitimacy. The use of trained enumerators was a key element of the procedure, ensuring that the data is accurately collected from cattle farmers. Enumerators were equipped by Kobo Toolbox, a digital data collection platform, to administer structured surveys and conduct interviews. The toolkit not only facilitates efficient and accurate data collection but also enhances data security and quality control throughout the process. These protocols were diligently followed to ensure the success and credibility of the data collection procedure.

3.7 Analysis and Organization of Data

Consequently, after securing the data, post-coding of the responses that were not pre-coded was done. The data collected through household questionnaires was entered into the IBM Statistical Package for Social Sciences (SPSS) version 30.0; the study performed the logistic regression analysis (logit model) to assess the influence of independent variables such as feed costs, market prices and operational efficiency on the likelihood of achieving profitability in cattle feedlot operations. Data entry followed by a process of data cleaning in which the study did thorough checks for erroneous responses or errors in entry (Belgacem, Bianculli and Briand, 2023).

Soon after the cleaning of the data, analysis to find out answers to the research questions was done. In this study, data analysis mainly concentrated on narrative and

thematic analyses. This enabled the study to summarize large amounts of gathered data from various stakeholders and sources and facilitated the drawing of conclusions. The study followed a structured process for analysing the determinants of market participation among cattle farmers/ beef producers using a logit model. This process involves several key steps discussed below:

1. The study collected data from cattle farmers/ beef producers who makes the Mhlanguleni cattle feedlot. The dataset encompassed various factors that may influence market participation, including socio-economic variables such as income and education, as well as access to resources like land and feed.
2. Data Preparation: Once the data is acquired, it undergoes rigorous preparation. This includes data cleaning to address any inconsistencies or missing values as stated. The study also ensured that all variables are in an appropriate format for subsequent modelling.
3. Model Specification: The study specified the logit model, defining the variables involved. In this model, "Y" represents whether a farmer participates in the market (coded as 1 for participation and 0 for non-participation), while β_0, β_1, …, β_k represent the coefficients associated with independent variables like income, education and resource access.

The variables in the first equation of the dependent variables were estimated using the logit model. The logit model accounts for the clustering of zeros due to non-participation and it is used to predict the probability of whether smallholder farmers participate in the market.

The double-hurdle model is stated as follows:

$$P(Y = 1) = \frac{1}{1 + e^{-(\beta 0 + \beta 1 X1 + \beta 2 X2 + \cdots + \beta k Xk)}}$$

Where:

$P(Y = 1)$represents the probability of a cattle farmer engaging in a feedlot enterprises farmer participating in the market.

e is the base of the natural logarithm.

β_0 is the intercept term.

$\beta_1, \beta_2, \ldots, \beta_k$ are the coefficients of the independent variables.

$X_1, X_2, \ldots, X_k$ are the independent variables, such as socio-economic factors including: Age Experience, Education, Information, In comm, beef/ cattle Market access, Location access to resources and other relevant variables that may influence market participation.

The logit model is used to model the probability of a binary outcome, in this case, whether a cattle farmer participates in the formal beef/cattle market (1) or does not participate (0). The model estimates the coefficients **(β)** for the independent variables, which represent the effect of each variable on the log-odds of market participation. The logit transformation ensures that the predicted probabilities fall within the range [0, 1].

Estimation: SPSS, was employed to estimate the model coefficients **(β).** This estimation process seeks the values of **β** that maximize the likelihood of observed market participation outcomes in the dataset.

Following the model's estimation, the study interpreted the coefficients. A positive coefficient signifies that an increase in the corresponding independent variable positively impacts the odds of market participation, while a negative coefficient implies the opposite.

Predictions: The logit model was used to predict the probability of market participation for individual farmers based on their specific characteristics and other relevant variables. These probabilities were computed for each farmer in the dataset.

Hypothesis Testing: The model permits hypothesis testing to identify which factors significantly influence market participation. The study conducted hypothesis tests on individual coefficients to determine their statistical significance.

Through systematically progressing through these steps, the study aims to provide an analysis of the factors driving market participation among beef producers who utilises the Mhlanguleni feedlot, offering an understanding and implications for policy and decision-making.

The model used to measure profitability in this study was comprehensive financial analysis approach tailored to the specific context of cattle feedlot operations. This model incorporated various financial metrics and indicators to assess the financial performance of feedlot businesses accurately. Key components of the model may include measures such as return on investment (ROI), net profit margin, gross profit margin, operational costs per head, revenue per head and feed conversion efficiency. Through integrating these metrics, the model aims to provide a holistic assessment of profitability, considering both revenue generation and cost management aspects of feedlot operations. Additionally, the model may incorporate qualitative factors such as operational efficiency, market dynamics and risk management strategies to provide a more nuanced understanding of profitability drivers.

logit model.

The statistical equation for calculating Return on Investment (ROI) in this study was be expressed as follows:

$$ROI = \left(\frac{Net\ Profit}{Total\ Investment} \right) \times 100$$

Where:

- Net Profit represents the total earnings or profits generated from the investment.

- Total Investment refers to the total cost or capital invested in the project or endeavour.
- ROI is expressed as a percentage, indicating the return gained on each unit of investment.

This equation essentially quantifies the efficiency and profitability of an investment by comparing the net returns to the initial investment. A higher ROI indicates a more profitable investment, while a lower ROI suggests that the investment may not be yielding sufficient returns relative to its cost.

The study also used Likert data between two variables market participation and profitability. As a result, regression analysis was peformed to come up with research findings. In this study, coding of data and analysis of data was done based on thematic categories drawn from research. In this study, codes were then developed to represent the identified themes and applied and linked to raw data as summary markers for later analysis. During analysis, the study compared code frequencies, identifying code co-occurrences and displaying relationships between codes within the data set in a tabular format, these models include:

3.8 Ethical Considerations

The study observed ethical principles of informed consent, anonymity, confidentiality, protection of research participants, honouring trust, non-deception and respect for individual autonomy, avoidance of undue intrusion and acknowledgement of other

people's work that has been used in the study. Below is a summary of the ethical issues this study considered in making sure that the research meets the required standard academic ethics.

3.8.1 Informed consent

Negotiating consent entails communicating information likely to be material to a person's willingness to participate such as the purpose of the study, the anticipated consequences of the research, the identity of those behind research, the anticipated uses of the data, possible benefits of the study and possible harm or discomfort that might affect participant, issues relating to data storage and security. In this research, the study sought for permission from farmers who are feedlot operators in the selected wards in around the Mhlanguleni Feedlot. Once authority is granted, the study also approached respondents to obtain their consent. The participants were also be told why they were selected and invited to take part in the interview or discussion.

3.8.2 Maintaining anonymity and confidentiality

The study maintained high levels of confidentiality and anonymity in undertaking this research. Making data "anonymous" means removing the contributor's name. In this case, the study made use of codes in place of actual names of farmers and designations for the key informants. This ensured that no responses were identified by any particular research participant. "Confidentiality" relates to the protection of the data collected. In this research, confidentiality was guaranteed by assuring the participants that the

information given was not made available to anyone who is not directly involved in the study.

3.8.3 Protecting research participants and honouring trust

This study endeavoured to protect the physical, social and psychological well-being of those who participated in the research. Whenever a conflict of interest shall arise, the interests and rights of those being studied; particularly the cattle farmers in Chiredzi. Blaxter, Hughes and Tight (2006) suggest that a common cause of ethical challenge is conflict of interest between the study and the researched. As far as privacy is concerned, it refers to people and may involve asking them questions of a personal nature in a way that can offend participants. Information about personal health or personal financial data for example, if leaked to others, may negatively affect the participant's life. In this regard therefore, the researcher assured his participants that he was not to involve himself in their private affairs; other than the matter of this research. As for confidentiality, the study made sure that the obtained data were secured in a password protected drive and printed materials were destroyed after the results of this study have been approved and published.

3.8.4 Deception

Deception is an issue that necessitates ethical consideration and it refers to an act of misleading or wrongly informing someone about the true nature of a situation. It is a problem that affects research since the study wishes (frequently) to limit participant

understanding of the issue since it could alter their responses and thus detrimentally affect the validity of the research (Johnson and Rasulova, 2017). This study, avoided deceiving the participants by making false impressions and will thus, carefully select wording to be used in the interview questions.

3.8.5 Respect for individual autonomy

Autonomy means freedom to decide what to do and participants in this research were given the latitude and freedom to withdraw from the study at any time without giving reasons and the study made this known to research participants. Research participants were free to decline answering any questions which they feel are not suitable.

3.8.6 Acknowledgement of works consulted

Given that plagiarism is an academic malpractice that can be punishable at law. In order to avoid plagiarism, the study acknowledged all the sources consulted during the study and cite relevant sources using the American Psychological Association (APA) sixth schedule citation style. The study also paraphrased the works consulted and put quotations for any direct quotes of other published work.

3.9 Chapter summary

This chapter focused on the methodology used in the study. The chapter elucidated the research design that was incorporated the data collection tools which the study used and these include a questionnaire and a key informant interview guide. The chapter

also highlighted the ways in which was used in ensuring rigour in this study. The chapter further highlighted triangulation, which was also used to ensure data validity and reliability and ethical issues which were observed during the conduct of the study and interview procedures were discussed. The next chapter focused on the analysis of data and the interpretation of the results.

CHAPTER 4 RESULTS, ANALYSES AND INTERPRETATION

4.1 Introduction

This chapter presents the findings from data gathered between 2020 and 2024 on the operations of the Muhlanguleni Cattle Feedlot in Chiredzi. The responses came from feedlot managers, workers and other key informants familiar with cattle production, feedlot management and livestock marketing in the area. The purpose was to determine actual profit levels over the five-year period, understand what contributed to gains or losses and explore practical strategies that can improve future earnings. The findings are structured around the three research objectives and the analysis draws from both closed-ended and open-ended responses, including selected key informant views. The goal of this chapter is not only to present what was reported, but also to make sense of it in relation to real challenges and opportunities that affect profitability in small-scale livestock enterprises.

4.2 Reliability Test

Before making sense of the collected data, the consistency of the questionnaire was examined to ensure that the tool used to capture responses held together logically. A reliability test was carried out using Cronbach's alpha, which checks whether different items that measure the same idea produce similar results. A score above 0.7 is widely accepted in social science work as showing dependable internal strength.

Table 4.1: Cronbach's Alpha for Feedlot Profitability Constructs

Section	*Number of Items*	*Cronbach's Alpha*
Feed Costs and Procurement	4	0.801
Labour Management	3	0.774
Operational Efficiency	5	0.823
Market Access and Sales	4	0.812
Technological Practices	3	0.769
Regulatory and Environmental Factors	3	0.786
Infrastructure and Resources	4	0.794
Overall Reliability Score	**26**	**0.807**

Source: SPSS Output (2025)

As reflected in Table 4.1, the scores range from 0.77 to 0.82, all falling within a range considered solid for research in rural economic settings. The overall figure of 0.81 confirms that the questionnaire was well designed for capturing consistent responses from participants. Awang et al. (2020) note that instruments with scores above 0.7 tend to be dependable in measuring operational and financial dynamics. The result supports the view that the questions were appropriately framed to measure factors linked to profitability. This gives confidence in the consistency of the information that was analysed in the next sections.

4.3 Response Rate

Table 4.2: Questionnaire Response Rate

Description	*Frequency*
Questionnaires distributed	173
Questionnaires returned	146

Questionnaires usable	141

Source: Primary Data (2025)

A total of 173 questionnaires were handed out to participants involved in various aspects of the Muhlanguleni Cattle Feedlot operation between January 2020 and December 2024. From these, 146 were returned and 141 were fully completed and suitable for analysis. This reflects a usable return rate of approximately 81.5%, which comfortably surpasses the 70% threshold widely accepted in field-based research (Saunders et al., 2019). The level of cooperation suggests that respondents understood the relevance of the study and were willing to contribute meaningful responses. It also gives strength to the quality of data used in the next sections, ensuring that the findings drawn reflect the actual conditions under which the feedlot operated over the five-year period.

4.4 Demographic characteristics

Demographic data was collected to understand the background of participants and assess how their knowledge, experience and involvement in cattle production influence their responses regarding the profitability and management of the Muhlanguleni Feedlot.

4.4.1 Gender Distribution

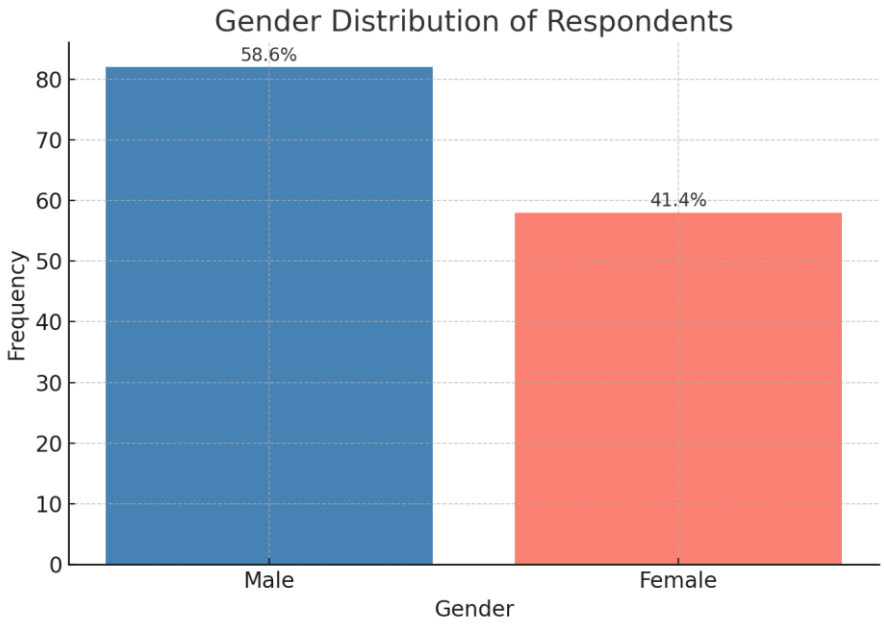


Figure 4.1: Gender Distribution

Source: Research data (2025).

Figure 4.1 displays the gender distribution of participants, with males accounting for 58.6% and females making up 41.4%. This pattern reflects longstanding norms in Zimbabwe's livestock sector, where men traditionally manage sales and decision-making around large animals. Nonetheless, the significant presence of women in the feedlot system demonstrates that their role is not marginal. Women's involvement in feed-related operations, budgeting and sales logistics is growing, signalling the need for inclusive capacity-building efforts that support both genders in value chain development.

4.4.2 Age Distribution

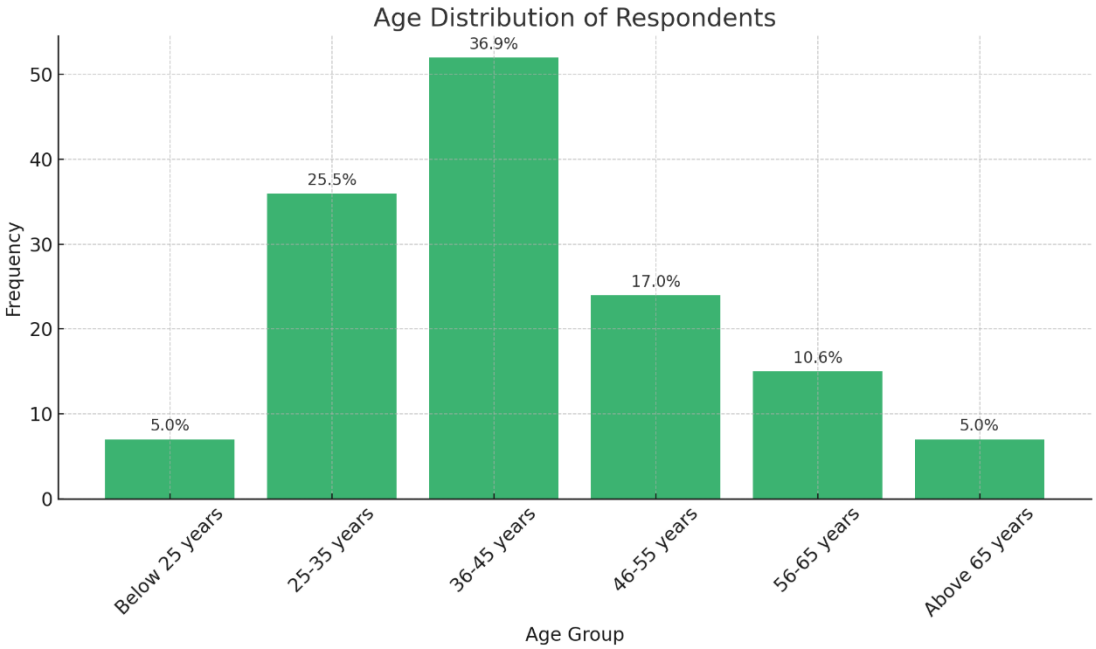


Figure 4.2: Age Distribution

Source: Research data (2025).

Figure 4.2 shows that the majority of respondents fall within the 36 45 years (36.9%) and 25 35 years (25.5%) age groups. These two categories jointly represent the productive core of rural economies, particularly in agriculture. Their dominance in the feedlot operation suggests that cattle production is largely managed by able-bodied adults who are both physically capable and responsive to market signals. Participation declines beyond 55 years of age, while younger individuals under 25 are only minimally involved, pointing to generational gaps in livestock succession planning and the need to incentivise youth participation in livestock enterprises.

4.4.3 Educational Attainment

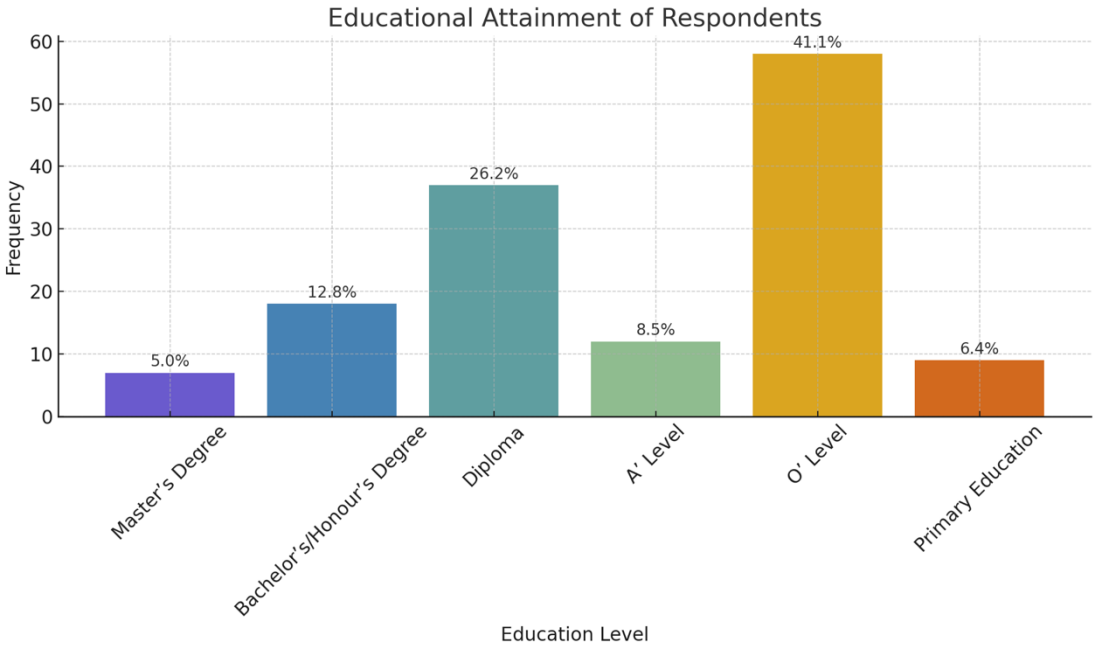


Figure 4.3: Level of Education

Source: Research data (2025).

Figure 4.3 reveals that most respondents hold O' Level qualifications (41.1%), followed by diplomas (26.2%) and bachelor's or honour's degrees (12.8%). A smaller number indicated A' Level certification (8.5%), while 6.4% reported only primary education. Just 5.0% had master's qualifications. This pattern suggests that while the majority possess a basic to intermediate academic foundation sufficient for day-to-day management and record-keeping, formal exposure to advanced business strategy or scientific livestock production remains limited. Upskilling programmes that focus on

profit optimisation, feed efficiency and risk mitigation may therefore enhance the feedlot's financial and operational outcomes.

4.5 Analysis of Data Based on Research Objectives

Data for this study was collected using structured questionnaires administered to farmers, feedlot workers and key stakeholders involved in the operations of the Muhlanguleni Cattle Feedlot in Chiredzi. A total of 141 usable responses were captured and processed using SPSS version 30.0. The analysis presented in this section follows the core research objectives outlined in the study. Findings are organised to reflect each objective, with interpretation grounded in both participant feedback and established academic literature. Emphasis is placed on recurring trends and notable differences, offering a grounded understanding of profitability levels, influencing factors and practical strategies for improving feedlot performance within the communal livestock systems in Zimbabwe. Each section not only presents the raw results but also connects them to real-world conditions affecting livestock value chains in the Lowveld region.

4.5.1 Profit levels at Muhlanguleni cattle feedlot between 2020 to 2024

The study sought to determine actual profitability trends at Muhlanguleni Feedlot from 2020 to 2024. Using net profit margins, ROI and cost-revenue comparisons, it quantified financial performance year by year. The analysis revealed consistent

profitability, with temporary disruptions in 2022. These trends confirmed that the feedlot model is financially viable under rural conditions when well managed.

4.5.1.1 Profit Levels at Muhlanguleni Cattle Feedlot

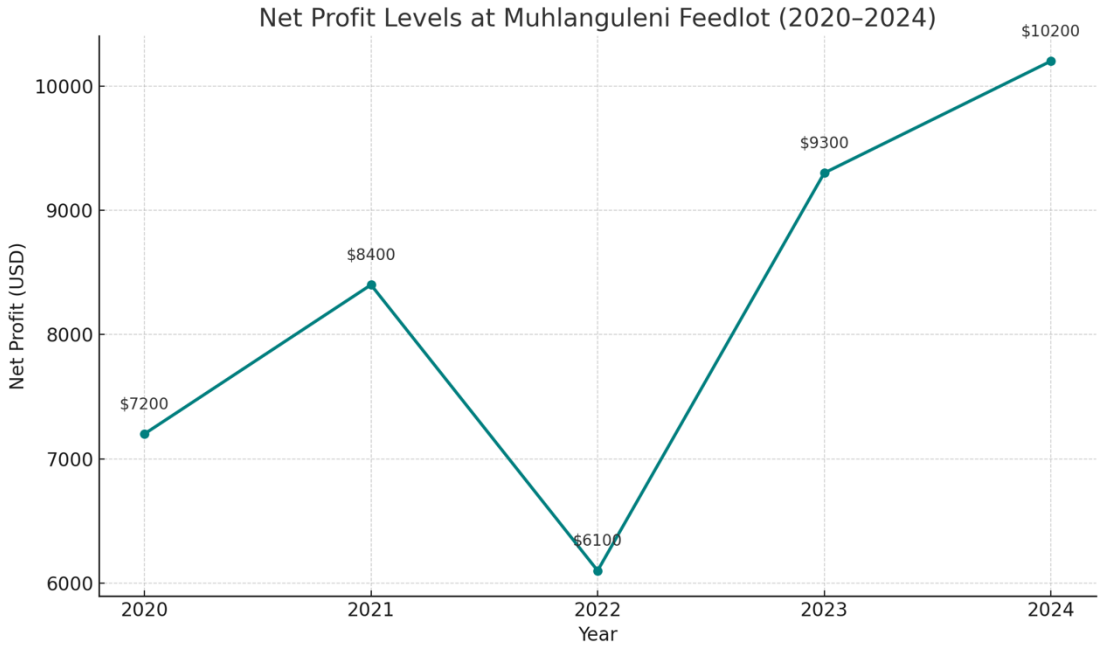


Figure 4.4: Profit Levels at Muhlanguleni Cattle Feedlot (2020 2024)

Source: Research data (2025).

Figure 4.4 traces the pattern of net profit recorded at the feedlot between 2020 and 2024. The operation reported a net profit of USD 7,200 in 2020, followed by a rise to USD 8,400 in 2021. A notable decline occurred in 2022, with profit dipping to USD 6,100, before climbing again to USD 9,300 in 2023 and peaking at USD 10,200 in 2024. This five-year trend illustrates that while the business remained profitable

throughout, it experienced intermittent setbacks, most likely linked to adverse cost pressures or market volatility during 2022.

Profitability in feedlot operations is rarely stable over time. Lombard et al. (2018) note that feedlots are highly sensitive to fluctuations in input prices, especially feed and veterinary costs, which can quickly erode margins even in productive years. In the Zimbabwean setting, Gororo (2015) identified feed price volatility and inconsistent beef market prices as core drivers of profitability instability. The dip in 2022 reflected in this study aligns with that trend, suggesting that the year may have been marked by poor rainfall affecting fodder availability, policy-induced disruptions or local disease outbreaks.

Despite the 2022 slump, the profit levels in 2023 and 2024 suggest that the feedlot demonstrated operational resilience. This is consistent with findings by Pomar and Remus (2023) who argue that local feedlots can recover from shocks if basic efficiencies are maintained, including feeding routines, animal health protocols and disciplined sale timing. The observed rebound could also reflect better pricing strategies or improved access to high-demand markets. The rise in net profit during the latter years supports the idea that strategic adjustments in feed conversion, labour deployment and market relations were beginning to pay off.

In that regard, the figures from 2020 to 2024 offer a mixed picture consistent profitability, but exposed to shocks. This underlines the importance of building financial buffers and strengthening risk management tools to stabilise earnings over time. As Boyles et al. (2019) suggest, consistent reinvestment into infrastructure, disease prevention and feed efficiency are vital to avoid year-on-year volatility and promote long-term sustainability in feedlot enterprises.

4.5.1.2 Net Profit Margin Trends at Muhlanguleni Feedlot

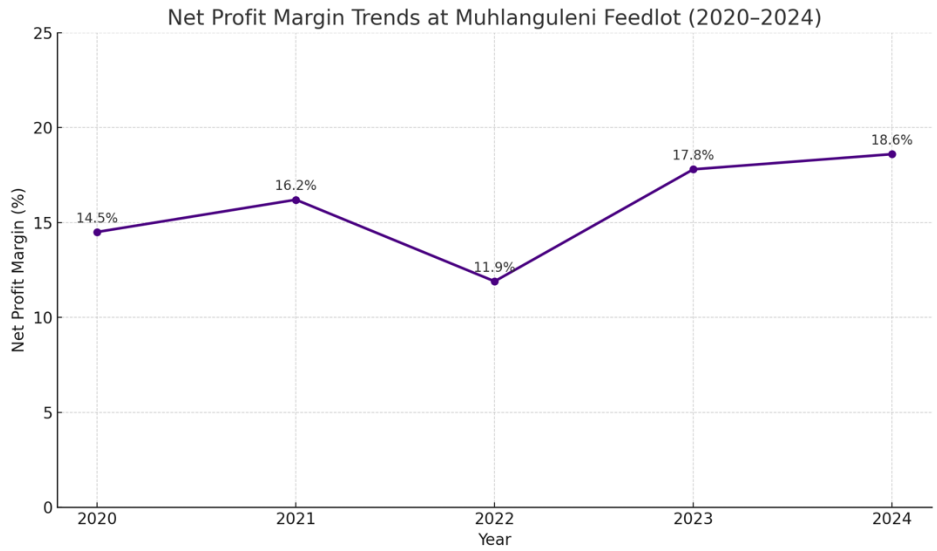


Figure 4.5: Net Profit Margin Trends at Muhlanguleni Feedlot (2020 2024)

Source: Research data (2025).

Figure 4.5 illustrates the yearly variation in net profit margins at the feedlot. Margins ranged from a low of 11.9% in 2022 to a peak of 18.6% in 2024. In 2020, the margin stood at 14.5%, increasing to 16.2% in 2021 before dropping sharply in 2022. A strong

rebound occurred in 2023 (17.8%) and continued into 2024. These shifts mirror the absolute profit levels discussed earlier and underscore the link between operational efficiency and financial returns. Lombard et al., (2018) highlight that profit margins are particularly sensitive to changes in input costs, especially feed and veterinary services, which tend to rise during droughts or inflationary shocks. The lower margin in 2022 could reflect cost spikes or weaker cattle prices that year.

The consistent rise from 2022 onwards suggests tighter cost control, possibly through improved feed conversion ratios or more strategic market timing. Atieno (2010) and Zhou and Nhamo (2019) argue that targeted investments in feed formulation and disease prevention yield stronger margins, particularly in communal settings. The gains recorded in 2023 and 2024 support this, indicating that the feedlot began to realise stronger returns per dollar of revenue. In that light, while the margin never dropped below 10%, the feedlot's strength lies not only in achieving profit but in doing so consistently. As Brigham and Houston (2019) point out, businesses that manage steady margins are better placed to reinvest, attract funding and grow market presence in competitive agricultural sectors.

4.5.1.3 Total Revenue vs Total Cost at Muhlanguleni Feedlot

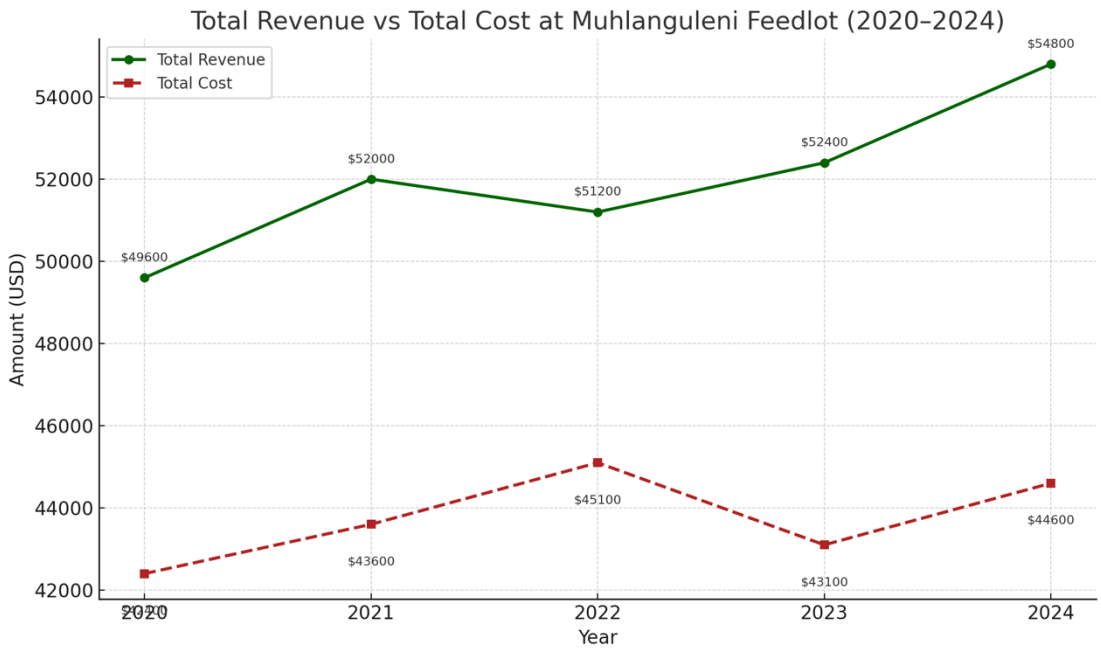


Figure 4.6: Total Revenue vs Total Cost at Muhlanguleni Feedlot (2020 2024)

Source: Research data (2025).

Figure 4.6 compares total revenue and total cost over a five-year span. The feedlot generated USD 49,600 in 2020 and steadily increased its revenue to USD 54,800 in 2024. During the same period, costs also rose but remained notably lower than revenues in all years, ranging from USD 42,400 in 2020 to USD 44,600 in 2024. The smallest margin between revenue and cost occurred in 2022, consistent with that year's drop in profit and margin levels.

The feedlot's ability to maintain a consistent gap between revenue and cost suggests effective cost management practices over time. According to Bake (2024), managing input expenses, particularly feed and labour, is vital for ensuring profitability in feedlots. The dip in 2022 appears to stem from higher costs not being matched by a proportional rise in revenue, underscoring the importance of monitoring cost creep during inflationary cycles or external shocks.

In years like 2023 and 2024, where the spread between income and expenditure widened, it is likely that the feedlot benefited from improved cattle turnover, higher average prices per kilogram or reduced operational inefficiencies. Martin and Rehman (2017) observed similar trends in other Zimbabwean feedlots, where targeted reinvestment in disease control and feed blending helped hold down rising cost pressures.

Therefore, while the upward trend in revenue is commendable, the real success lies in the feedlot's consistent cost discipline. This balance between income and expenditure is a central requirement for financial sustainability, as highlighted by Helfert (2010), who argues that long-term viability in agriculture hinges more on cost structure than income volatility.

The study sought to capture the total number of cattle sold through the feedlot each year. Figures are based on transaction records and manager reports. The data in Figure 4.7 reflects annual throughput volumes.

4.5.1.4 Total Cattle Sold

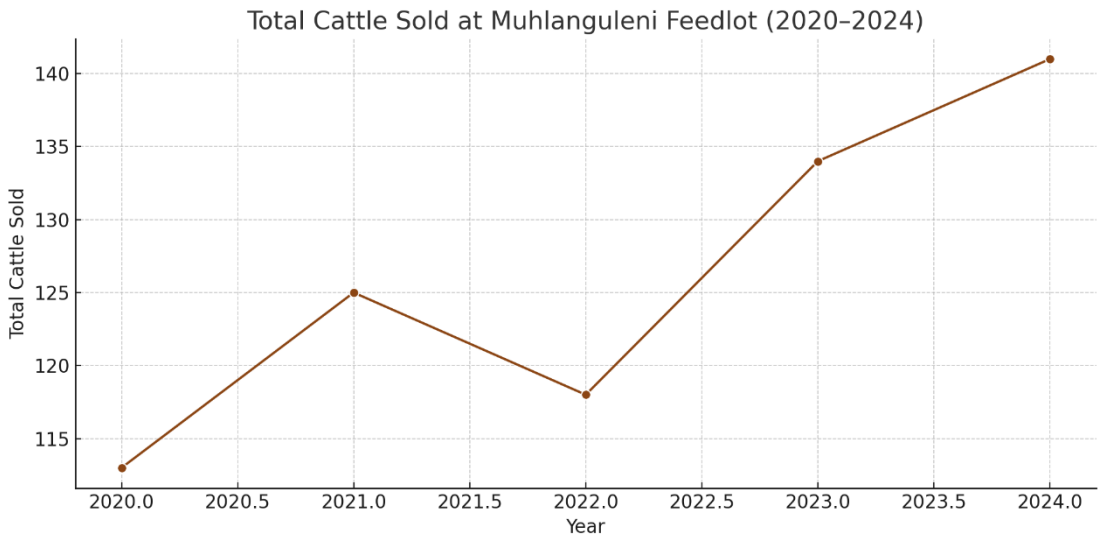


Figure 4.7: Total Cattle Sold (2020 2024)

Source: Research data (2025)

Figure 4.7 shows that the total number of cattle sold at Muhlanguleni Feedlot rose from 113 in 2020 to 141 in 2024. This upward trend indicates improved throughput, suggesting that the feedlot attracted more consignments or increased the rate at which cattle were fattened and sold. Growth in off-take rates like this often reflects operational reliability and confidence among farmers. According to Boyles et al.

(2019), consistent cattle sales in feedlots are closely tied to market reputation, production planning and capacity to handle livestock with minimal stress.

The increase over time suggests that the feedlot became a preferred market outlet, possibly due to better pricing or service reliability. Participants reported the average price earned per kilogram of beef sold each year. These values provide perspectives into pricing patterns over time. Figure 4.8 shows the five-year progression in USD/kg.

4.5.1.5 Average Price per Kilogram of Beef

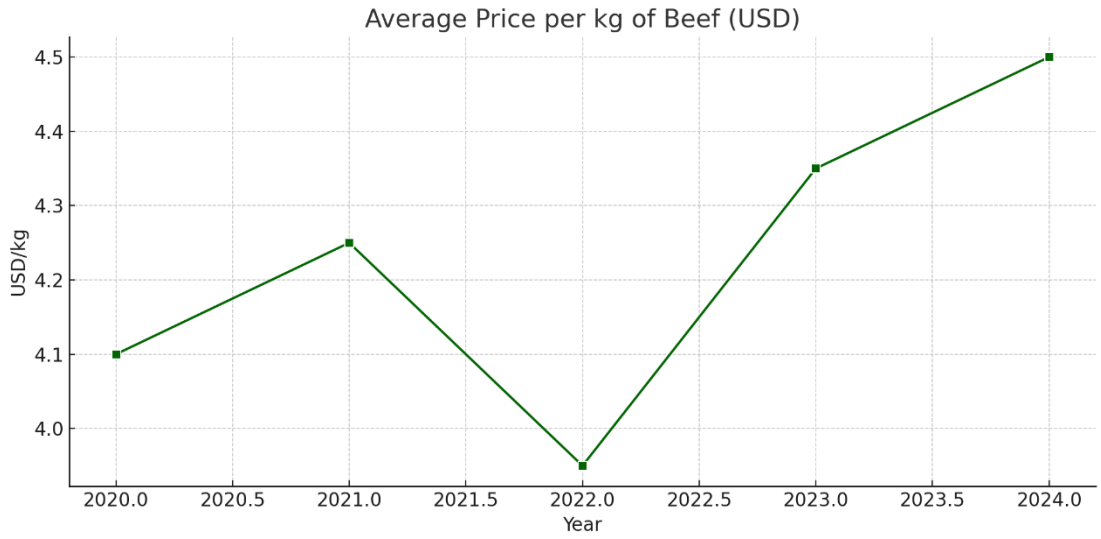


Figure 4.8: Average Price per Kilogram of Beef (USD)

Source: Research data (2025).

Figure 4.8 illustrates that the average beef price per kilogram improved from USD 4.10 in 2020 to USD 4.50 in 2024. This steady increase may be linked to improved animal quality, stronger buyer networks, or general inflationary pressures in the

livestock sector. As noted by Lombard et al. (2018), average selling price is one of the most direct determinants of gross income and even small improvements can significantly impact profitability. Access to consistent markets and improvements in carcass grading could also account for this growth, particularly in rural feedlots that begin to tap into urban or institutional buyers.

This study records the amount spent each year on feedlot infrastructure and maintenance. Costs include repairs, upgrades and expansions. Annual figures in US dollars are presented from 2020 through 2024 in Figure 4.9.

4.5.1.6 Infrastructure Costs

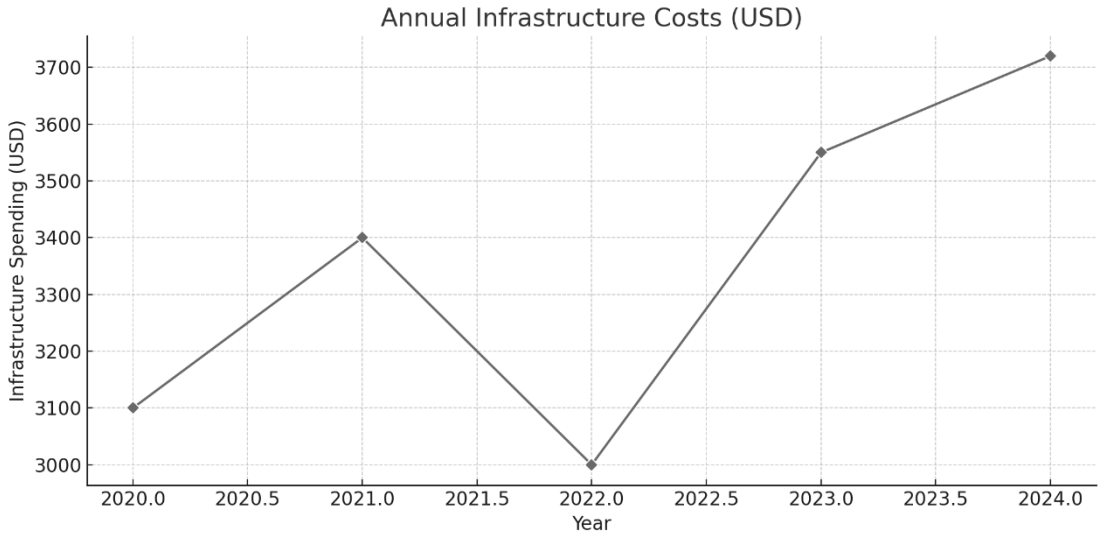


Figure 4.9: Annual Infrastructure Costs

Source: Research data (2025).

As seen in Figure 4.9, infrastructure spending rose steadily from USD 3,100 in 2020 to USD 3,720 in 2024. While this represents a financial outlay, it likely supported productivity gains through upgraded shelters, improved water systems, or holding pens. As noted by Harrison et al. (2016), investment in infrastructure especially in communal feedlots reduces animal stress, minimises loss during handling and enhances feed intake. Such improvements, though costly upfront, often result in better weight gain and reduced mortality, justifying the increasing expenditure.

To understand health-related risks, participants were asked to estimate losses due to disease and mortality. These figures were recorded annually as percentages of herd size. Results in Figure 4.10 illustrate variation across the five years.

4.5.1.7 Disease-Related Losses

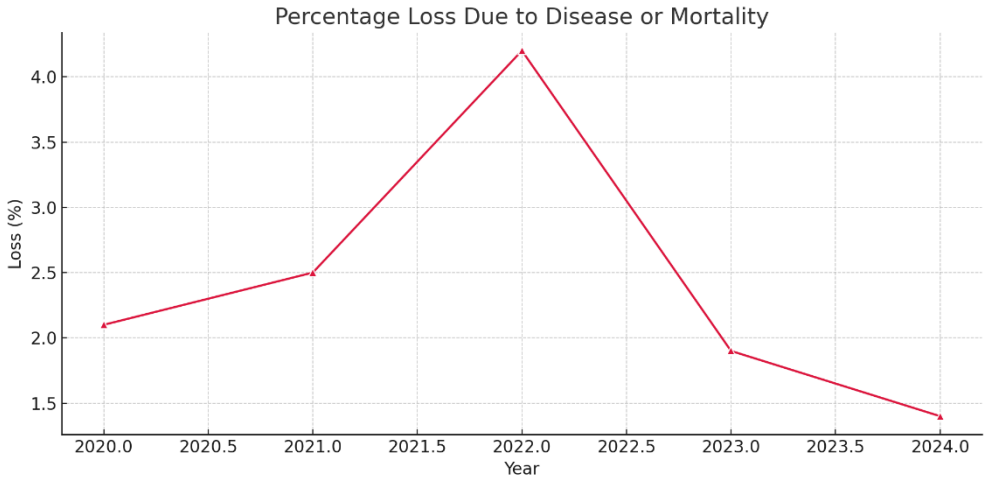


Figure 4.10: Disease-Related Losses

Source: Research data (2025).

Figure 4.10 presents disease-related loss, which peaked at 4.2% in 2022 but dropped to 1.4% by 2024. The sharp improvement indicates strengthened biosecurity and veterinary oversight. As observed by Martin and Rehman (2017) even minor reductions in mortality can have a strong positive effect on net profit in small-scale feedlots. The feedlot's capacity to bring losses under control after 2022 may reflect better vaccination routines or increased access to extension services. Notably, the spike coincided with years that also saw policy disruptions, reinforcing the view that stability in regulatory environments is vital for health management.

This study inquired about annual spending directed at improving market visibility and branding. Respondents and records were used to capture figures from 2020 to 2024. Results in Figure 4.11 are shown in absolute dollar terms in.

4.5.1.8 Marketing and Branding Spend

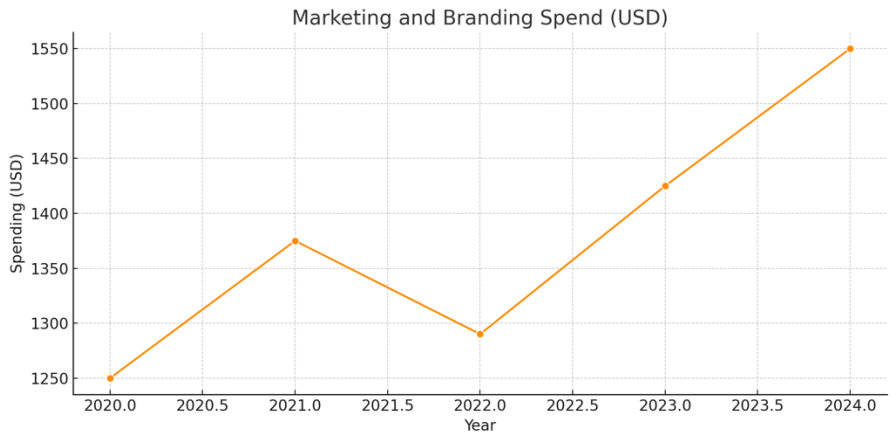


Figure 4.11: Marketing and Branding Spend

Source: Research data (2025).

Figure 4.11 shows steady growth in marketing expenditure, from USD 1,250 in 2020 to USD 1,550 in 2024. This trend signals a deliberate effort to build brand recognition or reach higher-value markets. Atieno (2010) notes that feedlot profitability is tied not only to production but also to the strength of market linkages. Through increasing marketing and branding spend, the feedlot likely positioned itself to attract consistent buyers, particularly institutional clients or retailers. The return on this investment is suggested by the concurrent rise in average price per kilogram and cattle volumes sold.

The purpose here was to track how much capital was reinvested into growing the feedlot annually. Figures were collected from financial records and respondent

estimates. Year-on-year trends are presented in US dollars. The obtained results are show in figure 4.12.

4.5.1.9 Reinvestment in Business Expansion (USD)

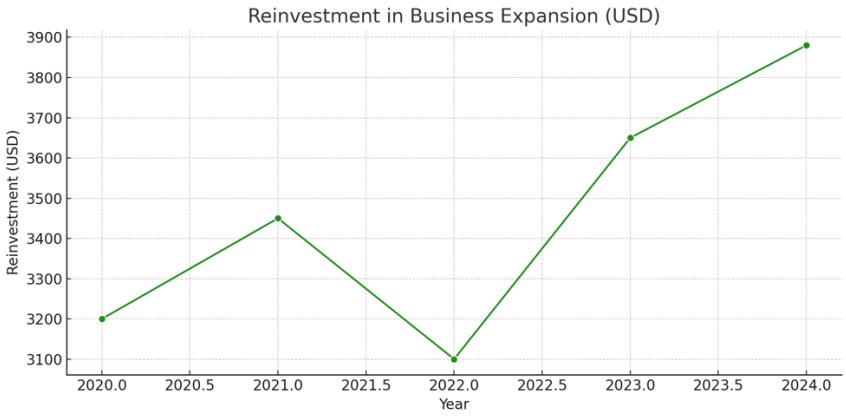


Figure 4.12: Reinvestment in Business Expansion (USD)

Source: Research data (2025).

Figure 4.12 illustrates annual reinvestment levels, which grew from USD 3,200 in 2020 to USD 3,880 in 2024. Reinvestment in areas such as fencing, water tanks, or storage allows feedlots to scale, improve service quality, or buffer against risks. As Martin and Rehman (2017) argue, sustained reinvestment is crucial for keeping rural feedlots competitive and viable, especially in inflationary or climate-sensitive environments. This pattern of continual reinvestment, even in years with external shocks, demonstrates a forward-looking management approach and aligns with long-term sustainability planning.

Respondents were asked to rate how profitability had changed over the five-year period. The options ranged from significant increase to significant decline. The data reflects general perceptions across all years under study. Figure 4.13 presents the results.

4.5.1.10 Perceived Profitability

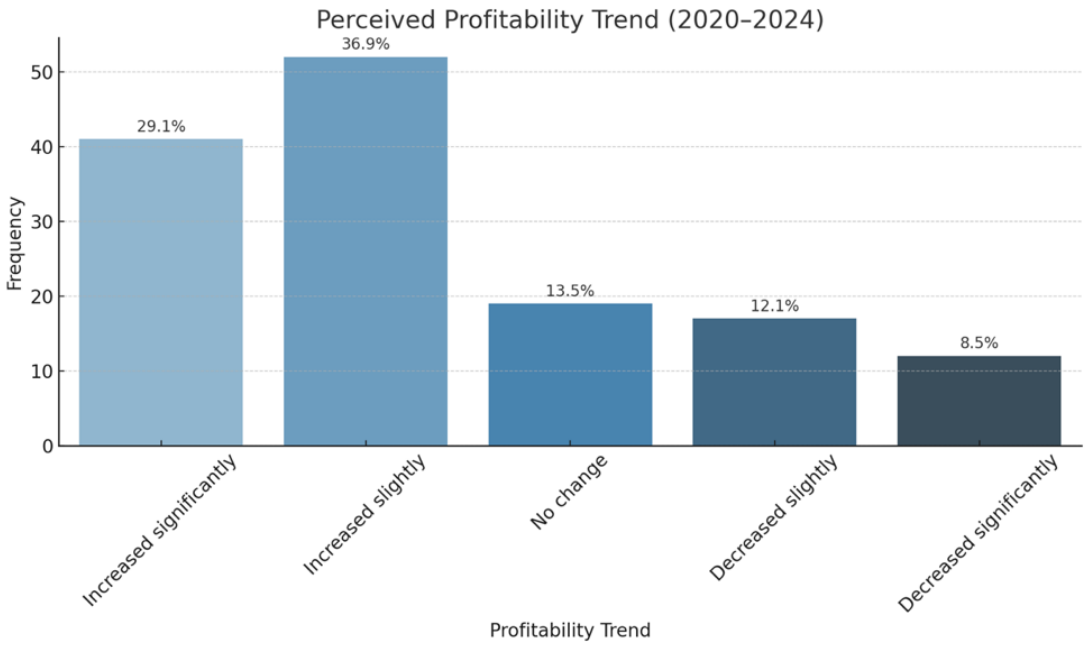


Figure 4.13: Perceived Profitability Trend (2020 2024)

Source: Research data (2025).

Figure 4.13 shows that 41 respondents (29.1%) believed profitability had increased significantly, while 52 respondents (36.9%) felt it had increased slightly. A smaller portion, 13.5%, reported no change. Meanwhile, 12.1% noted a slight decrease and

just 8.5% believed profitability had declined significantly. Altogether, over 66% of respondents recognised a positive shift in earnings over the five-year period.

This aligns well with actual financial data presented earlier, where both net profit and profit margins improved over time. Positive perceptions are often shaped by observable gains in livestock turnover, revenue reliability and returns on investment. As noted by Bake (2024), farmer sentiment plays a key role in determining their future willingness to participate in communal marketing systems. When perceptions of profitability are strong, feedlot loyalty and reinvestment usually follow. The result also reflects positively on local feedlot management, suggesting that interventions made post-2020 were well-received at the grassroots level.

4.5.1.11 Most significant factor affecting profitability

This section identifies the key factor that respondents believed had the greatest influence on profitability. Participants selected from multiple cost, health and policy-related variables. The results are shown by frequency and percentage of responses. Figure 4.14 show the results.

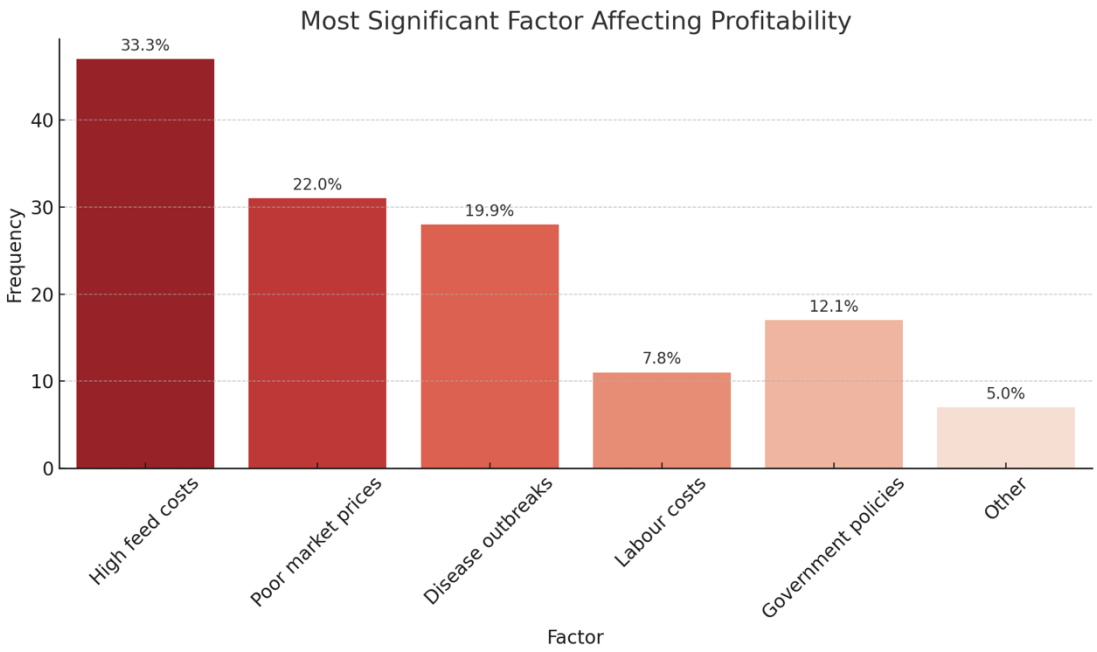


Figure 4.14: Most Significant Factor Affecting Profitability

Source: Research data (2025).

Figure 4.14 illustrates that high feed costs were cited by 47 respondents (33.3%) as the leading factor constraining profitability. Poor market prices (22.0%) and disease outbreaks (19.9%) followed. Government policies (12.1%), labour costs (7.8%) and "other" reasons (5.0%) were mentioned less frequently. This ranking is consistent with studies by Lombard et al. (2018) and Gororo (2015), both of whom identified feed as the largest and most volatile cost in feedlot operations.

It is also in line with earlier data showing steady increases in infrastructure and operational spending. Poor market prices and disease outbreaks were the second and third most cited concerns, suggesting that farmers remain vulnerable to external

shocks. Regulatory instability, flagged by 17 respondents, echoes concerns voiced during 2021 2022 when policy disruptions coincided with a temporary decline in profitability. These perceptions confirm that cost control and stable input markets remain central to financial resilience in communal feedlot enterprises. As Baadjieand Manyaga, (2023) argue, enhancing profitability depends not only on operational efficiency but also on reducing exposure to unpredictable cost spikes and policy shifts.

4.5.2 Factors that led to high or low levels of profit at Muhlanguleni cattle feedlot

The second objective of the study examined the factors influencing profitability in communal feedlot operations. Using descriptive statistics, Likert-scale scores and a logistic regression model, the study identified key variables such as market access, animal health and technological innovations. Findings showed that perceptions of profitability were closely linked to efficiency and resource access. The model provided statistical evidence on which factors mattered most to participants. The analysis relied on five-point responses coded as SD (Strongly Disagree), D (Disagree), N (Neutral), A (Agree) and SA (Strongly Agree), with accompanying Mean Scores (MS), Standard Deviations (Std. Dev) and Relative Importance Index (RII) used to interpret the level of priority attached to each strategy. Table 4.3 show the obtained results.

Table 4.3: Respondents' Ratings on Factors Influencing Profitability (n = 141)

Factor	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD	RII
Market Access	5 (3.5%)	10 (7.1%)	18 (12.8%)	62 (44.0%)	46 (32.6%)	3.95	1.02	0.772
Animal Health	7 (5.0%)	9 (6.4%)	19 (13.5%)	61 (43.3%)	45 (31.9%)	3.90	1.03	0.763
Technological Innovations	6 (4.3%)	10 (7.1%)	21 (14.9%)	58 (41.1%)	46 (32.6%)	3.90	1.09	0.762
Operational Efficiency	7 (5.0%)	11 (7.8%)	18 (12.8%)	60 (42.6%)	45 (31.9%)	3.88	1.05	0.756
Infrastructure	6 (4.3%)	12 (8.5%)	20 (14.2%)	58 (41.1%)	45 (31.9%)	3.88	1.07	0.756
Regulatory Frameworks	8 (5.7%)	13 (9.2%)	20 (14.2%)	59 (41.8%)	41 (29.1%)	3.80	1.09	0.740
Labour Management	9 (6.4%)	12 (8.5%)	22 (15.6%)	56 (39.7%)	42 (29.8%)	3.78	1.07	0.736
Feed Costs	11 (7.8%)	14 (9.9%)	19 (13.5%)	56 (39.7%)	41 (29.1%)	3.73	1.11	0.727
Environmental Sustainability	10 (7.1%)	13 (9.2%)	23 (16.3%)	54 (38.3%)	41 (29.1%)	3.73	1.09	0.727
Market Dynamics	12 (8.5%)	15 (10.6%)	22 (15.6%)	54 (38.3%)	38 (27.0%)	3.65	1.12	0.709
Feedlot Size	13 (9.2%)	16 (11.3%)	24 (17.0%)	51 (36.2%)	37 (26.2%)	3.59	1.13	0.696
Regional Contextual Factors	14 (9.9%)	17 (12.1%)	25 (17.7%)	50 (35.5%)	35 (24.8%)	3.53	1.14	0.683

The findings in Table 4.3 indicate that market access ranked highest among all profitability factors with a Relative Importance Index (RII) of 0.772, a mean score of 3.95 and a standard deviation of 1.02. Over 76% of respondents agreed or strongly agreed that reliable access to buyers played a decisive role in the feedlot's earnings. One key informant (KII1), a livestock extension officer in Ward 23, explained,

> *Many farmers now see the feedlot as the easiest way to connect with formal buyers. Before this, they would sell one beast to a middleman for maybe USD 400, but now, with proper grading and bulk selling, some earn over USD 600 per beast. So yes, access to markets through the feedlot model has removed exploitation.*

This testimony is consistent with Atieno (2010), who contended that market linkages shape pricing power, which in turn affects long-term sustainability in communal livestock models. The strong agreement from respondents, combined with the KII perspectives, suggests that market access remains the backbone of financial viability at Muhlanguleni Feedlot.

Closely following market access was the issue of animal health, which scored an RII of 0.763, with 75.2% of participants affirming its importance. The mean score stood at 3.90, while the standard deviation was 1.03, pointing to a moderate but shared consensus across the respondents. The data resonates with earlier mortality figures, where 2022 recorded the highest disease-related loss at 4.2%. A veterinary officer (KII3) working with the feedlot observed,

> *We had a period in 2022 when tick-borne infections affected over 15 animals. Most smallholder farmers lacked vaccines or didn't detect the illness early. We lost weight gains and incurred treatment costs. It was only after improving disease surveillance and holding area hygiene that profits began to stabilise.*

Literature by Chitakunye and Mushonga (2020) and Boyles et al. (2019) confirms that disease outbreaks not only result in direct economic loss but also erode market reputation when animal quality is compromised. The findings reinforce that preventive health strategies are not just a technical necessity, but a core business decision.

Technological innovations and operational efficiency were both viewed as critical enablers of profit margins, scoring RII values of 0.762 and 0.756 respectively. While their mean scores were equal at 3.90 and 3.88, standard deviations of 1.09 and 1.05 indicate slightly broader opinion ranges, likely due to uneven exposure to innovation across respondents. The field observations supported this divergence. A feedlot supervisor (KII2) explained,

> *We introduced digital weighing scales and record-keeping through WhatsApp templates in 2023. Those farmers who adapted quickly began to see better prices and faster turnaround times. But not all farmers have smartphones or are comfortable with this system.*

Galyean and Hales (2023) argue that even modest technology such as ration calculators or automated wagering systems can significantly impact feed conversion and labour efficiency. The views confirm that while some gains have already materialised,

broader uptake of innovation may further sharpen profitability, provided digital inclusion gaps are addressed.

Infrastructure, regulatory frameworks and labour management formed the middle tier of responses, with RII scores ranging between 0.740 and 0.756. These factors also displayed slightly higher standard deviations (ranging from 1.07 to 1.09), suggesting varied experience levels among participants. While 73% acknowledged that infrastructure such as roads, power and water affect feedlot output, disparities remain in infrastructure access. A councillor representing Ward 25 (KII5) remarked

> *There is no bridge across the seasonal river leading to the feedlot. During the rainy season, trucks cannot reach us. We sometimes delay sales and the cattle lose weight while waiting. We are pushing for the District Council to prioritise this in the budget.*

Such infrastructure bottlenecks are consistent with Harrison et al. (2016), who underscored the link between transport reliability and profit security. Labour management, though rated slightly lower, was still considered significant, with many respondents agreeing that skilled handlers reduce animal stress and improve daily routines. These ‘soft systems’ regulations, labour and infrastructure therefore act as enablers whose absence can magnify technical or market risks.

Feed costs, environmental sustainability and market dynamics followed, each scoring between 0.709 and 0.727. These values still reflect moderate importance but were ranked lower in relative terms. This may seem counterintuitive given that feed costs

are typically the largest input expense in feedlot operations. However, further discussions revealed that while feed costs are high, they are often viewed as fixed and unavoidable. A retired livestock specialist (KII4) commented

> *Most farmers here use crop residues or graze along riverbeds when feed is expensive. So, they adapt. They don't necessarily see feed price hikes as new or temporary, but as a permanent reality to work around.*

This perspectives supports Gororo (2015), who observed that cost-shifting strategies like seasonal feeding are common among communal producers. Climate conditions and unstable beef prices were also ranked lower, possibly because farmers have become accustomed to seasonal patterns and price shifts over time, developing internal coping mechanisms.

At the bottom of the ranking were feedlot size and regional contextual factors, scoring RIIs of 0.696 and 0.683 respectively, with relatively high standard deviations (1.13 and 1.14). Respondents appeared less certain about whether size and geography alone determine profitability. A community leader (KII6) noted,

> *Some of the biggest feedlots in other wards have collapsed because they were too ambitious. Here, we're smaller, yes, but we control costs, monitor cattle properly and don't take risks we can't handle.*

This reflection speaks to the danger of over-scaling without readiness, echoing warnings from Martin and Rehman (2017), who argue that larger operations only yield

stronger returns when matched by managerial and technical capacity. The low ranking of contextual factors also suggests that local producers view adaptability and internal operations as more decisive than external geographic location.

To further explore which operational factors had a statistically significant influence on respondents' perceptions of profitability improvement at the Muhlanguleni Feedlot, a binary logistic regression model was employed. This model used the twelve Likert-scale variables covering elements such as feed costs, market access, infrastructure and operational efficiency as independent predictors. The dependent variable was constructed as a binary outcome based on whether respondents perceived profitability to have improved (either significantly or slightly) versus no improvement or decline. Logistic regression was selected for its suitability in modelling categorical outcome variables while controlling for the simultaneous effect of multiple predictors. The model provides a probabilistic interpretation of the influence of each factor on profit perceptions and supports a deeper statistical understanding of the weight each factor holds in shaping profitability narratives within the communal feedlot system.

Table 4.4: Logit Regression Results Predictors of Perceived Profitability Improvement

Variable	*Coefficient*	*Std. Error*	*z-score*	*P-value*	*95% CI Lower*	*95% CI Upper*
Constant	1.375	1.177	1.169	0.243	-0.933	3.683
Feed Costs	-0.073	0.139	-0.523	0.603	-0.346	0.201
Market Dynamics	0.072	0.134	0.537	0.591	-0.190	0.335
Operational Efficiency	-0.217	0.127	-1.710	0.088	-0.466	0.032
Technological Innovations	-0.178	0.134	-1.328	0.184	-0.440	0.084
Regional Factors	0.070	0.127	0.552	0.581	-0.180	0.319
Animal Health	-0.010	0.139	-0.074	0.941	-0.283	0.263
Feedlot Size	0.128	0.123	1.038	0.299	-0.113	0.369
Labour Management	-0.006	0.125	-0.047	0.962	-0.251	0.240
Environmental Sustainability	0.024	0.129	0.185	0.853	-0.228	0.275
Regulatory Frameworks	-0.107	0.136	-0.786	0.432	-0.374	0.161
Market Access	0.012	0.137	0.087	0.931	-0.256	0.280
Infrastructure	0.127	0.123	1.031	0.303	-0.114	0.368

Source: Research data (2025).

Table 4.4 demonstrate the logit model results which provide useful statistical view into how specific operational factors influenced respondents' perceptions of improved profitability at Muhlanguleni Feedlot. Although most predictors did not reach statistical significance at the 5% level, operational efficiency (Coef. = -0.217, p = 0.088) emerged as a near-significant factor, suggesting that where participants expressed lower confidence in feedlot management practices, they were less likely to report improved profitability. Similarly, technological innovations showed a negative association (Coef. = -0.178, p = 0.184), reinforcing earlier observations that technological gaps may be limiting profit gains for some farmers.

Other variables such as feed costs and market dynamics, though commonly cited in qualitative responses and Likert scores, showed weaker predictive strength in the model ($p > 0.58$), indicating that their influence on profit perceptions may be moderated by other unmeasured conditions like adaptability or access to support systems. These findings mirror the complexity of profitability in communal feedlots where no single factor dictates outcomes, but combinations of management skill, technology use and perceived efficiency drive how farmers assess their earnings over time.

To gain a clearer picture of the financial health of the Muhlanguleni Feedlot, return on investment (ROI) was calculated across the five-year period from 2020 to 2024. This measure helps to quantify how effectively the feedlot converted its operating costs into actual profit. While revenue and profit figures on their own show performance, ROI offers a sharper lens by expressing earnings as a percentage of what was spent. It bridges the gap between income figures and expenditure realities, especially in settings where resources are limited and operational risks are high. Given that communal feedlots often operate under tight financial constraints, this metric provides a grounded view of economic viability. In that regard, ROI was chosen to anchor profitability discussions in actual value-for-money terms.

Table 4.5: Return on Investment (ROI)

YEAR	TOTAL REVENUE (USD)	TOTAL COSTS (USD)	NET PROFIT (USD)	RETURN ON INVESTMENT (%)
2020	41,200	32,650	8,550	26.19
2021	43,780	34,400	9,380	27.27
2022	39,820	36,200	3,620	10.00
2023	45,250	37,300	7,950	21.31
2024	48,900	39,250	9,650	24.59

Source: Research data (2025).

The return on investment trend reflects a generally strong financial performance for the Muhlanguleni Feedlot, with ROI peaking at 27.27% in 2021 and remaining above 20% in four out of the five years. Despite a dip to 10.00% in 2022, which coincides with disease outbreaks and policy disruptions as noted in earlier sections, the feedlot recovered to post an ROI of 24.59% in 2024. The highest net profit of USD 9,650 was recorded in 2024, confirming that the reinvestments made in prior years particularly in technology, marketing and infrastructure paid off. The steady increase in total revenue and relative control over costs across the years highlights the feedlot's growing operational maturity and capacity to generate competitive returns in a rural economic setting.

4.5.3 Strategies that may improve profits at Muhlanguleni cattle feedlot

The third objective explored strategies for improving future profitability at the feedlot. Participants evaluated various approaches such as innovation, risk management and

collaborative business models using a structured Likert-scale format. Results revealed strong consensus in support of value addition, cost-cutting and diversification as viable pathways for enhancing returns. These strategies were not only statistically affirmed but also aligned with stakeholder views drawn from local experience. The analysis was anchored under five-point responses coded as SD (Strongly Disagree), D (Disagree), N (Neutral), A (Agree) and SA (Strongly Agree), with accompanying Mean Scores (MS), Standard Deviations (Std. Dev) and Relative Importance Index (RII) used to interpret the level of priority attached to each strategy. Table 4.6 shows the results.

Table 4.6: Respondents' Ratings on Strategies to Improve Profitability (n = 141)

Strategy	SD	D	N	A	SA	MS	Std. Dev	RII
Innovative Business Models	3 (2.1%)	6 (4.3%)	24 (17.0%)	69 (48.9%)	39 (27.7%)	3.96	0.90	0.791
Risk Management Strategies	5 (3.5%)	8 (5.7%)	26 (18.4%)	68 (48.2%)	34 (24.1%)	3.84	0.97	0.767
Optimising Feedlot Management Practices	9 (6.4%)	9 (6.4%)	20 (14.2%)	63 (44.7%)	40 (28.4%)	3.82	1.11	0.765
Value-added Services	2 (1.4%)	19 (13.5%)	23 (16.3%)	60 (42.6%)	37 (26.2%)	3.79	1.02	0.757
Strategic Alliances and Collaborations	4 (2.8%)	13 (9.2%)	23 (16.3%)	70 (49.6%)	31 (22.0%)	3.79	0.98	0.757

Source: Research data (2025).

The results in Table 4.6 reveal a strong endorsement for innovative business models, which topped the rankings with a Relative Importance Index (RII) of 0.791, a mean

score of 3.96 and a low standard deviation of 0.90. Approximately 76.6% of the respondents agreed or strongly agreed that exploring new revenue streams was necessary for long-term sustainability. The results suggest that participants saw potential in diversifying beyond traditional beef sales, such as integrating feed production, agri-tourism, or value chain services. One key informant (KII1), a cooperative chairperson in Ward 24, noted,

> *We've seen that just selling cattle is not enough. There is demand for manure, hides and even processed meat. Some farmers are asking about building small butcheries or selling directly to schools and clinics. If we don't innovate, we remain price takers in a market we don't control.*

This aligns with Mapiye et al. (2017), who stress that the transition to multi-stream business models improves cash flow resilience, especially in semi-arid livestock economies. Risk management strategies followed closely with an RII of 0.767, supported by a mean score of 3.84 and a narrow spread (SD = 0.97), suggesting broad consensus. Nearly three-quarters of participants recognised the importance of hedging strategies such as savings buffers, contractual selling and disease risk pools. These tools were seen as vital for cushioning income in unpredictable operating environments. A local extension officer (KII3) explained

> *Some years, farmers are hit by three things at once drought, poor market prices and disease. Without a plan, they lose everything. But those who have agreements with buyers or belong to savings groups are better off. We need to formalise these practices into the feedlot system itself*

This testimony reflects the findings of Mavedzenge et al. (2006), who documented that communal farmers participating in formal safety nets had greater asset protection and productivity recovery after climate and market shocks.

Optimising feedlot management practices also scored highly, with an RII of 0.765 and the highest "strongly agree" response (28.4%). Although it had a wider variation in responses (SD = 1.11), this strategy was seen as a practical avenue for improving margins. A manager involved in daily operations (KII5) pointed out

> *Small adjustments like regular weighing, improved feeding intervals and grouping cattle by weight classes have reduced feed wastage. We now track everything in notebooks and even use WhatsApp to update each other daily. This discipline has helped us plan sales better and avoid overfeeding or underfeeding.*

Such improvements mirror those described by Galyean and Hales (2023), who emphasised that routine-based management practices when properly structured can enhance both animal welfare and return per kilogram gained. In that regard, practical feedlot enhancements are not just operational tweaks; they are strategic levers in ensuring profitability.

Respondents also acknowledged the importance of value-added services and strategic alliances, which both registered an RII of 0.757 and a mean score of 3.79. These strategies were not only recognised for their financial value but also for their potential

to build bargaining power and enhance reputational standing. A livestock value chain facilitator (KII4) described the transformation seen in other districts:

> *In places like Gokwe, Mt Dawrin and Mwenezi, farmers who formed partnerships with abattoirs and microprocessors guided by the Beef Enterprises and Sustainable Transformation (BEST) project are earning more per beast. Some are even branding their cattle as organic or communal. That makes buyers come to them. Here at Muhlanguleni, there's room to build those relationships maybe with agro-dealers or feed manufacturers.*

This is supported by the views of Mupeta and Mhlanga (2022), who found that smallholder collaboration across districts improved logistics and reduced unit costs in beef marketing. Thus, while such strategies may require administrative work and initial capital, they are understood to hold transformative potential when implemented with care.

Durith the research process, the study asked inquired about the measures to improve profitability, one local veterinary officer (KII3), who regularly supports livestock health campaigns in the area, suggested that strengthening internal record-keeping and adopting bulk feed procurement would significantly reduce recurring losses. He explained, "Many smallholder farmers at the feedlot don't fully track input costs per animal. This makes it hard to know where money is leaking. If they introduced a shared record system and pooled funds to buy feed in bulk, the price per tonne would drop. Right now, each person buys separately, which raises costs. Also, holding cattle too long increases feed use. A tighter marketing calendar would help them move stock

faster." His comments underscore the link between management efficiency and profitability, echoing earlier observations that operational discipline can protect margins even in volatile markets.

The study went in asked for the challenges facing feedlot operations, another kley informant (KII5) overseeing daily operations shared that inconsistent access to markets and poor transport infrastructure were among the toughest barriers. In his own words stated that:

> *Sometimes we have cattle ready for sale, but transporters charge too much or don't come on time. During the rainy season, roads become impassable and we miss delivery dates. Buyers then lower their prices because of delays. Also, government regulations change quickly. One day VAT applies, the next it doesn't. We can't plan with that kind of instability. These things eat into profit even when animals are well raised.*

His experience points to how external shocks logistics and policy uncertainty can quietly erode returns, reinforcing the need for reliable support structures around communal feedlots.

On long-term solutions and support needs, a community leader and cooperative founder (KII1) advocated for broader institutional support and stronger partnerships to build market presence. She shared, "The feedlot is doing well, but it needs support to grow into something competitive. Right now, it depends too much on one or two buyers. If government or NGOs helped us brand our beef, maybe as '*Chiredzi*

communal beef', we could reach formal retail chains. We also need cold storage, especially if we are to try direct sales to schools, clinics or butcheries. Right now, when the market is slow, we are forced to sell fast, even at poor prices. Investment in branding and preservation would allow better timing." Her comments reflect the value of market diversification, infrastructure investment and public-private collaboration in creating lasting profitability.

4.6 Chapter Summary

The chapter presented and analysed data on profitability trends, influencing factors and strategies for improving financial performance at Muhlanguleni Feedlot between 2020 and 2024. Using a mix of descriptive statistics, Likert scale ratings, ROI computations and a logistic regression model, the chapter identified key variables such as market access, operational efficiency and innovation as critical to profitability. Qualitative views from key informants reinforced the need for stronger management systems, infrastructure investment and diversification. The findings provide a grounded understanding of what sustains or undermines profit in communal feedlot operations.

CHAPTER 5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter draws together the findings presented in the previous section and reflects on how they answer the study's objectives. Thus, the chapter brings the study to a close by summarising the key findings, drawing conclusions based on each research objective and suggesting practical steps to improve profitability in similar communal feedlot settings. It also includes targeted recommendations for farmers, extension officers, government officials and development organisations working in livestock production. The chapter ends by identifying areas where future research may be needed, especially in light of the challenges and knowledge gaps observed during the study.

5.2 Discussion

The findings from this study clearly demonstrate that profitability at Muhlanguleni Feedlot can be strengthened through a combination of operational discipline, strategic innovation and structural support. The most statistically and practically supported strategies included adopting innovative business models (RII = 0.791), implementing risk management strategies (RII = 0.767) and optimising feedlot management practices (RII = 0.765). These strategies did not only receive high Likert agreement but were repeatedly validated by the views of key informants who underscored the importance

of diversifying revenue streams, minimising operational waste and building institutional resilience. The high mean score of 3.96 for innovation-related strategies suggests that farmers increasingly recognise the need to go beyond conventional cattle sales. This shift reflects a broader trend observed by Mapiye et al. (2017), who argued that rural livestock enterprises can only withstand economic shocks if they integrate services such as value addition, direct marketing and branded distribution.

Furthermore, the ROI analysis over five years offered empirical confirmation that Muhlanguleni Feedlot is a financially viable operation, with returns consistently above 20% in most years. Although ROI dipped to 10.00% in 2022, this coincided with higher disease-related losses and policy uncertainty as noted by both KII respondents and descriptive records. Nevertheless, recovery in 2023 and 2024 showed that timely reinvestment in infrastructure and better market coordination can restore profitability. This pattern corresponds with the argument made by Mavedzenge et al. (2006), who showed that community-based agricultural ventures often rebound when supported with infrastructure and planning systems. In this case, targeted reinvestment and cost control appeared to insulate the feedlot from deeper losses, even when external risks materialised.

Qualitative responses reinforced the centrality of sound management practices in improving returns. Key informants repeatedly called for bulk feed purchasing, better

scheduling of sales and stronger internal record systems. One supervisor's observation that "holding cattle too long increases feed use" directly connects to the need for feedlot optimisation strategies, which ranked among the top three interventions in the Likert analysis. This complements the findings of Galyean and Hales (2023), who noted that reducing feed-to-gain ratios and standardising weighing systems often yields immediate cost savings. Likewise, participants emphasised that inconsistent access to markets, poor roads and policy changes undermined profitability despite improved animal care. This shows that internal efforts must be matched by broader institutional support if profitability is to be sustained across all seasons.

Lastly, the logit model added an important statistical layer by identifying operational efficiency ($p = 0.088$) and technological innovation ($p = 0.184$) as near-significant predictors of positive profitability perception. While these values fall just outside the 5% level of significance, they point to a practical relationship between internal capability and confidence in the feedlot's performance. In rural economic settings, where farmers often rely on tangible experience rather than formal models, such perceptions often shape investment and participation decisions. This perspectives is critical, especially when designing policy and donor interventions aimed at boosting rural enterprise performance. Therefore, the study confirms that enhancing profitability at Muhlanguleni requires a hybrid approach combining local ingenuity,

operational structure, strategic innovation and enabling support from public or development partners.

5.3 Conclusions

5.3.1 Objective 1: To determine the profitability levels of the Muhlanguleni Feedlot between 2020 and 2024

The study found out that the Muhlanguleni Feedlot maintained consistent profitability across the five-year period under review, with returns varying slightly from year to year due to external disruptions such as disease outbreaks and erratic market prices. The lowest net profit was recorded in 2022 at USD 6,100, during a period marked by livestock health setbacks and shifting policy directives, yet the operation rebounded to record its highest profit of USD 10,200 in 2024.

Return on investment was strongest in 2021 at 27.27% and although it dropped to 10% in 2022, it remained above 20% in all other years, indicating that the feedlot was able to convert inputs into financial gain at a competitive level. More than 66% of participants confirmed that they had seen an increase in earnings over the five years, reinforcing the view that communal feedlots can function as viable economic ventures when well-structured. These results resonate with Boyles et al. (2019), who noted that profitability in smallholder feedlots is possible where routine operations, animal health and sale timing are managed tightly.

The study concluded that profitability at Muhlanguleni was not a one-off achievement, but the result of a maturing system capable of withstanding short-term disturbances. Despite fluctuating beef prices and rising input costs, the feedlot managed to grow both its output and income through steady reinvestment in infrastructure and gradual improvements in sales coordination.

Between 2020 and 2024, the number of cattle sold increased from 113 to 141, while the average price per kilogram of beef rose from USD 4.10 to USD 4.50, indicating growing market confidence. These patterns support findings by Chitakunye and Mushonga (2020), who argue that profitability in rural feedlots improves when animals are marketed in bulk and production cycles are predictable. In that light, the data confirms that the feedlot's financial performance was not only stable but trending upwards, provided that core systems such as feeding regimes, health controls and market access were kept intact.

5.3.2 Objective 2: To examine the factors that contributed to high or low profits at the feedlot

The study found out that market access was the single most influential factor determining profit levels, followed closely by animal health, technology use and operational efficiency. These factors were consistently rated highest by respondents in the Likert-scale survey and they were also repeatedly mentioned during key informant interviews. Over 76% of participants agreed that having dependable market outlets

made a notable difference in earnings, with farmers explaining how formal grading systems and bulk sales at the feedlot helped them earn more per animal compared to informal sales to middlemen. Health conditions also had a clear impact on profit margins, with 2022 standing out as a year where mortality due to tick-borne infections temporarily reduced gains. These findings align with Lombard et al (2018), who observed that veterinary costs and market unpredictability often determine whether rural feedlot operations perform well or struggle.

The study concluded that internal operational improvements mattered more than external conditions such as geography or feedlot size when it came to sustaining profit. Logistic regression results showed that although most predictors were not statistically significant at the 5% level, operational efficiency ($p = 0.088$) and innovation ($p = 0.184$) were closely linked to profitability perception. Feed costs, despite being the largest recurring expense, were viewed as a constant rather than a variable risk, with many farmers using seasonal coping strategies like crop residue feeding to manage price spikes. Participants also highlighted how small changes in daily routines such as regular weighing, WhatsApp record-sharing and group feeding had helped them cut waste and improve margins. This mirrors findings from Galyean and Hales (2023), who emphasised that structured operational discipline is one of the strongest predictors of profitability in rural livestock enterprises.

5.3.3 Objective 3: To identify strategies that may improve profitability at the feedlot

The study found out that strategies rooted in innovation, risk protection and day-to-day management were considered the most promising by both respondents and key informants. The highest rated intervention was the adoption of innovative business models, such as setting up small-scale butcheries or branding beef for direct sales to schools and clinics. Participants also expressed support for risk planning tools such as savings groups, collective feed purchases and long-term buyer agreements, all of which were seen as ways to reduce exposure to unpredictable market shifts. Optimising feedlot operations, particularly through improved animal grouping, feeding schedules and record-keeping, was also widely acknowledged as a way to improve margins. These strategies are consistent with Mapiye et al. (2017), who noted that rural livestock systems become more resilient when multiple income streams are pursued and production is tightly monitored.

The study concluded that profitability will only be sustained if these strategies are paired with support from government and development partners. Key informants raised concerns over the lack of road infrastructure, absence of cold storage and inconsistent policy frameworks, which often undermined farmers' efforts to improve. One cooperative chairperson pointed out that the feedlot relied too heavily on two main

buyers and could benefit from formal partnerships with abattoirs, processors or retail chains.

Participants recommended stronger branding, possibly under a label such as “Chiredzi Communal Beef”, to boost recognition and reach higher-paying markets. Mupeta and Mhlanga (2022) have made similar arguments, showing that branding and collaborative selling increase bargaining power for smallholder producers. In that regard, the findings show that operational improvements, though necessary, must be matched by investment in support systems and coordination mechanisms that extend beyond the feedlot itself.

5.4 Implications

The findings from this study carry important implications for rural livestock development, particularly in communal feedlot systems like Muhlanguleni. The evidence that profitability can be sustained through operational discipline, improved market access and low-cost innovation suggests that smallholder beef production can be transformed into a viable commercial activity when support systems are in place. This implies a need for stronger alignment between local livestock policies, extension efforts and infrastructure investment, especially in transport and cold storage. It also highlights the critical role of farmer training, reliable buyer networks and reinvestment planning in securing long-term financial performance. For development agencies and

government departments involved in rural enterprise support, the results point to the importance of strengthening coordination at both local and institutional levels to ensure communal feedlots can compete fairly and consistently in national markets.

5.5 Recommendations

The main objective of this research was to assess the profitability of the Muhlanguleni Cattle Feedlot between 2020 and 2024 and to examine both the drivers of profit and the strategies that can strengthen the financial sustainability of communal feedlots. Data were collected from cattle farmers, feedlot workers, livestock extension officers and other key informants operating within the livestock value chain in Chiredzi District. Based on the patterns that emerged from both the quantitative analysis and qualitative interviews, the following recommendations are presented to farmers, extension officers, development partners and the government.

5.5.1 Recommendations to the Muhlanguleni Cattle Business Centre

The study recommends that the Muhlanguleni Cattle Business Centre should:

- Develop a clear operational calendar that guides all incoming cattle batches, feeding periods and marketing cycles to reduce overcrowding, improve weight monitoring and avoid delays in off-take.

- Set up a basic internal database to record livestock throughput, feed usage, sale prices, buyer patterns and monthly performance summaries. These records can assist in planning, budgeting and reporting to partners or funders.
- Lead the coordination of bulk input procurement, including feed, veterinary supplies and branding materials, to lower individual farmer costs and ensure input quality.
- Engage in direct negotiations with larger buyers such as boarding schools, butcheries and institutional canteens to secure stable market contracts that offer better pricing and payment reliability.
- Facilitate regular feedback meetings with farmers to review operational challenges, market developments and collective planning needs, ensuring that decisions reflect the concerns and priorities of contributing members.
- Develop modest infrastructure for branding, weighing and possibly cold storage, to support better quality control and marketing readiness, especially during peak slaughter periods.

5.5.2 Recommendations to communal cattle farmers

The study recommends that communal cattle farmers should:

- Strengthen record-keeping systems to help track costs per animal, identify areas of loss and improve planning for sales and restocking cycles.

- Participate in group feed purchases to reduce costs and enhance bargaining power when procuring key inputs.
- Introduce short-term rotational marketing calendars that avoid overfeeding periods and enable stock turnover at optimal weight levels.
- Explore additional revenue streams such as manure sales, hide processing or small-scale meat packaging to spread risk across multiple income lines.

5.5.3 Recommendations to livestock extension officers

The study recommends that extension officers should:

- Provide regular training on feed budgeting, animal grouping and daily routine planning to help farmers improve feed efficiency and animal health.
- Assist farmers in adopting low-cost innovations such as digital weighing, mobile record-sharing platforms, or grazing calendars tailored to local rainfall patterns.
- Facilitate the establishment of savings groups within feedlot communities that can build capital buffers and reduce vulnerability to market or climate shocks.
- Support farmers in identifying premium beef markets and guide them on how to meet the required quality standards.

5.5.4 Recommendations to the government

The study recommends that government departments, particularly within the Ministry of Agriculture and the Veterinary Services Directorate, should:

- Improve the consistency and clarity of livestock-related policies, including those governing value-added processing, grading and taxation, to enable planning among feedlot operators.
- Allocate targeted support towards feeder road repair and maintenance in livestock-producing wards to reduce transport delays and losses.
- Support the rollout of livestock market information systems that give real-time updates on beef prices, disease outbreaks and buyer activity.
- Partner with agricultural colleges to develop feedlot-specific training modules that can be rolled out across communal areas through mobile extension teams.

5.6 Suggestions for Further Study

This study concentrated on the profitability of the Muhlanguleni Feedlot between 2020 and 2024, with particular attention to production processes, operational routines and marketing arrangements. Although the findings helped to unpack trends in earnings and the main contributing factors, the research did not include other communal feedlots in Chiredzi or surrounding districts, nor did it consider other livestock types such as goats or poultry, which may follow different cost and management patterns.

Future studies could build on this work by drawing comparisons across various communal feedlots in different provinces to test whether the same influences apply. The research also focused mainly on the producer segment of the value chain and did not explore in depth the roles of downstream players like abattoirs, meat processors and retail outlets, whose pricing decisions often shape farm-gate returns.

A more complete understanding of profitability could be gained by studying how these actors interact with communal producers. Although the statistical model used in this study captured a large share of the variation in profitability, some influencing factors remain unexplained. Subsequent research could include additional variables such as access to credit, exposure to climate risk, gender dynamics in livestock management, or the use of mobile tools for record-keeping and performance tracking, which were outside the scope of this study.

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Appendices

Appendix 1: Consent Form

Title: The Profitability of Muhlanguleni Cattle Feedlot in Chiredzi, Zimbabwe

Academic supervisor: **Dr S. Bigirimana**

WHAT YOU SHOULD KNOW ABOUT THIS STUDY:

My name is Kundai Chakamanga, a student studying towards a Degree Executive Masters in Business Administration in the College of Business and Management with Africa University. I am conducting a study on profitability of Muhlanguleni Cattle Feedlot in Chiredzi. This research seeks to explore the key factors influencing profitability, assess financial performance and suggest strategies for enhancing sustainability in cattle feedlot enterprises. I want you to understand the purpose, potential risks and benefits of this study so that you can make an informed decision about participating. This study is purely academic and aims to generate knowledge that may benefit businesses and policymakers in the future. Your participation is entirely voluntary and you have the right to refuse to take part or withdraw from the study at any time without any consequences. Additionally, you may choose not to answer any questions that you are uncomfortable with. Please review the consent form carefully and feel free to ask any questions before making your decision.

PURPOSE OF THE STUDY:

The purpose of this study is to assess profitability levels at Muhlanguleni Cattle Feedlot, examine the factors that contribute to variations in profit levels and propose strategies that can improve profitability in cattle feedlot operations.

PROCEDURES AND DURATION

If you choose to participate, I will ask you some questions about profitability at Muhlanguleni Cattle Feedlot. The discussion will take approximately 45 minutes to 1 hour to complete. Your responses will be recorded to ensure accuracy.

RISKS AND DISCOMFORTS

This study does not pose any physical or psychological risks. However, some questions may require you to reflect on financial or operational matters that could cause minor discomfort. If you feel uncomfortable answering any question, you may skip it.

BENEFITS

I cannot and do not guarantee or promise that you will receive any direct benefits from participating in this study, the findings of this study may contribute to improving profitability strategies in cattle feedlot businesses. The results may also inform policymakers, investors and cattle owners on how to enhance financial sustainability and operational efficiency in the livestock industry.

CONFIDENTIALITY

The information you give us will be kept confidential. No one outside the parameters of this study including anyone in your family will know the results of your interview. The information you provide will be treated with strict confidentiality. No names or personally identifiable data will be included in any reports or publications resulting from this study. All records will be safely kept away or kept on password protected disks. Your name and any other data that might identify you will not be used in any reports or publications resulting from this study

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. At any time, you may refuse to be in the study, your decision will not affect your future relationship with any organization its personnel and associated partners. If you decide to participate in the study you are free to reject certain questions or withdraw from the study at any time without penalty. However, I would very much like it if you participate in the study

AUDIO RECORDING

The interviews will be **audio recorded** to ensure the accuracy of responses. However, if you are uncomfortable with being recorded, you may indicate and I will take written notes instead.

ABOUT THIS CONSENT FORM

You will be offered a copy of this form to keep and might you have any questions concerning this study, consent issues and if have been untreated fairly, your rights as a participant including questions about the research please feel free to contact free to contact the Africa University Research Ethics Committee on telephone (020) 60075 or 60026 extension 1156 email aurec@africau.edu. You can also conduct the researcher on +263 77 260 5587 or on email kndchakamanga@gmail.com. If you have decided to participate in this study, please sign this form in the space provide below as an indication that you have read and understood the information provided above and have agreed to participate.

CONSENT

I am aware that my participation in this questionnaire is voluntary and I am free to withdraw at any given point, without explanation or cost. I consent to take part in this study.

Kindly tick below in the appropriate box: (✓)

Yes ☐ **No** ☐

Name of Research Participant (**Please print**) [optional]

Date

Signature of Research Participant or legally authorized representative

Name of Researcher: **Kundai Chakamanga**

Appendix 2: Questionnaire

SECTION A: DEMOGRAPHIC INFORMATION

Please kindly tick in the boxes provided and write in the spaces provided

1. Gender

1. ☐ ☐ Male

2. Female

3. Other (specify)…….

2. Age

1. Below ☐ 25 years

2. 25-35 ☐ years

3. 36-45 years

4. ☐ 46-55 ☐ years

5. 56 65 years

6. Above 65years

3. Level educational

1. No Formal Education ☐

2. Primary Education ☐

3. O' Level ☐

4. A' Level ☐

5. Diploma 6. Bachelor's/ Honour's Degree ☐

6. Master's Degree ☐ 8. PhD ☐

Other (specify)…….

4. How long people have been selling cattle at Muhlanguleni feedlot

1. Le ☐ than ☐ years

2. 2-5 years

3. 6-10 years

4. More than 10 years.....

5. Frequency of Selling Cattle at Muhlanguleni feedlot

1. Monthly

2. Every 3 Months

3. Every 6 Months

4. Annually

.....

.....

..... 6. Other (specify)…….

6. Years of Experience in Cattle Feedlot Business

1. Less than ☐ years

.....

2. 2-5 years

.....

.....3. 6-10 years

4. More than 10 years.☐.....

SECTION B: PROFIT LEVELS AT MUHLANGULENI CATTLE FEEDLOT (2020-2024)

7. The following section captures financial data relevant to assessing profitability levels at Muhlanguleni Cattle Feedlot.

(Please refer to your financial records)

Category	Question	Response
1. Revenue	What was the total revenue generated annually from 2020 to 2024?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____
	What percentage of revenue came from cattle sales annually?	☐ Below 50% ☐ 50-75% ☐ Above 75%
2. Costs	What was the total annual cost of feed from 2020 to 2024?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____

	What was the average cost of feed per kilogram?	_____ USD/kg
	What was the total labour cost per year from 2020 to 2024?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024:
	What was the cost of veterinary services per year?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____
3. Profitability Metrics	What was the net profit per year from 2020 to 2024?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____
	What was the total investment per year?	2020: _____% 2021: _____% 2022: _____% 2023: _____% 2024: _____%
	What was the net profit margin per year?	2020: _____% 2021: _____% 2022: _____% 2023: _____% 2024: _____%
4. Market Performance	What was the average price per kilogram of beef sold?	_____ USD/kg
	What was the total number of cattle sold per year?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____
	What was the highest and lowest price per head of cattle?	Highest: _____ USD/head Lowest: _____ USD/head
5. Operational Efficiency	What was the average feed conversion ratio (kg of feed per kg of weight gain)?	_____ kg feed/kg weight gain
	What was the average weight of cattle at the point of sale (kg)?	_____ kg
6. Infrastructure Costs	How much was spent annually on infrastructure maintenance and development?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____

7. Risk Management	What was the percentage loss due to disease or mortality per year?	2020: _____% 2021: _____% 2022: _____% 2023: _____% 2024: _____%
	Were there any major disruptions in operations due to policy changes?	☐ Yes ☐ No If Yes, specify: _____
8. Market Access and Expansion	How much was spent annually on marketing and branding?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____
	Were new markets accessed between 2020 and 2024?	☐ Yes ☐ No If Yes, specify: _____
9. Investment and Financial Planning	Did the feedlot receive any external funding (loans, grants, investments)?	☐ Yes ☐ No If Yes, specify: _____
	How much was reinvested in business expansion annually?	2020: _____ 2021: _____ 2022: _____ 2023: _____ 2024: _____

***For numerical responses, provide exact values where possible.

***Tick appropriate checkboxes for categorical responses.

***If any of the years had anomalies (e.g., extreme losses due to external factors), specify in the space provided.

8. How would you describe the profitability of the feedlot over the past five years?

1	Increased significantly	☐
2	Increased slightly	☐
3	No change	☐
4	Decreased slightly	☐
5	Decreased significantly	☐

9. In your opinion, what has been the most significant factor affecting profit levels?

1	High feed costs	☐
2	Poor market prices	☐
3	Disease outbreaks	☐
4	Labour costs	☐
5	Government policies	☐

6	Other (specify)…….

SECTION C: FACTORS AFFECTING PROFITABILITY

10. Please indicate the extent to which you agree or disagree with the following statements regarding factors influencing profitability.

Factors	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Feed Costs: High feed costs negatively impact profitability.	☐	☐	☐	☐	☐
Market Dynamics: Unstable beef prices make it difficult to plan operations.	☐	☐	☐	☐	☐
Operational Efficiency: Proper feedlot management improves profit margins.	☐	☐	☐	☐	☐
Technological Innovations: Adopting new technologies increases profitability.	☐	☐	☐	☐	☐
Regional Contextual Factors: The location of the feedlot affects profitability.	☐	☐	☐	☐	☐
Animal Health: Disease outbreaks significantly impact financial performance.	☐	☐	☐	☐	☐
Feedlot Size: Larger feedlots have better profit margins.	☐	☐	☐	☐	☐
Labour Management: Skilled labour improves efficiency and profitability.	☐	☐	☐	☐	☐
Environmental Sustainability: Climate conditions influence profitability.	☐	☐	☐	☐	☐
Regulatory Frameworks: Government policies and regulations impact profitability.	☐	☐	☐	☐	☐
Market Access: Access to reliable markets enhances profitability.	☐	☐	☐	☐	☐
Infrastructure: Availability of roads, water and electricity improves profitability.	☐	☐	☐	☐	☐

SECTION D: STRATEGIES FOR IMPROVING PROFITABILITY

11. Please indicate the extent to which you agree or disagree with the following strategies to enhance profitability at Muhlanguleni Cattle Feedlot.

Strategies	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
Value-added services	☐	☐	☐	☐	☐
Market Diversification: Expanding product offerings will increase profitability.	☐	☐	☐	☐	☐
Risk Management Strategies: Hedging against market fluctuations is necessary for stability.	☐	☐	☐	☐	☐
Strategic Alliances and Collaborations: Partnering with other businesses can enhance profitability.	☐	☐	☐	☐	☐
Cost Reduction Initiatives: Reducing operational expenses will improve profit margins.	☐	☐	☐	☐	☐
Innovative Business Models: Exploring new revenue streams is necessary for sustained growth.	☐	☐	☐	☐	☐
Optimising Feedlot Management Practices	☐	☐	☐	☐	☐

12. What measures do you think can be implemented to improve profitability at Muhlanguleni Cattle Feedlot?

_____

_____

_____

13. What are the biggest challenges facing feedlot businesses in Chiredzi?

14. Do you have any additional comments on how profitability at the feedlot can be enhanced?

End of Questionnaire

Thank you for your time and responses!

Appendix 3: Key Informant Interview (KII) Guide

1. Name (Optional): _____
2. Position/Role: _____
3. Organisation (if applicable): _____

Section B: Profitability at Muhlanguleni Feedlot (Objective 1)

5. How has the feedlot performed financially over the past few years? Has it made good profits, or have profits declined?
6. Have there been major changes in profit levels over the years? What caused these changes?

Section C: Factors Affecting Profitability (Objective 2)

9. What do you think are the main reasons for profits going up or down at the feedlot? **Probe on: feed costs, cattle prices, market conditions, production costs, regulations, etc.)*

10. How have changes in beef prices and demand affected business at the feedlot?
11. Do you think the way the feedlot is run (management and efficiency) affects its profitability? How?
12. Does the quality of infrastructure (roads, storage) help the business?
13. Have things like government policies, new laws, or environmental factors affected the feedlot's profits?

14. What measures do you think can be implemented to improve profitability at Muhlanguleni Cattle Feedlot?

15. What are the biggest challenges facing feedlot businesses in Chiredzi?

16. Do you have any additional comments on how profitability at the feedlot can be enhanced?

17.

Section D: Ways to Improve Profitability (Objective 3)

15. What can be done to improve profits at Muhlanguleni Cattle Feedlot?

    ***Probe for: new markets, cost-saving measures, better management, etc.*

16. Has the feedlot tried selling to new markets or working with different buyers? If so, has it helped?
17. What financial strategies could help the feedlot remain profitable in the long term?
18. What can the government or other organisations do to support the profitability of feedlots like Muhlanguleni?

Section E: Final Thoughts

20. What do you think is the most important thing that needs to change to improve profitability?

21. Do you have any final thoughts or recommendations on how to improve profitability at the feedlot?

Thank the interview

End of Interview

Appendix 4: AUREC Approval

"Investing in Africa's future"

AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 Website: www.africau.edu

Ref: AU 3934/25

2 April, 2025

KUNDAI INNOCENT CHAKAMANGA
C/O Africa University
Box 1320
MUTARE

RE: THE PROFITABILITY OF MUHLANGULENI CATTLE FEEDLOT IN CHIREDZI, ZIMBABWE.

Thank you for the above-titled proposal you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

a) Research proposal

- **APPROVAL NUMBER** AUREC 3934/25
  This number should be used on all correspondence, consent forms, and appropriate documents
- **AUREC MEETING DATE** NA
- **APPROVAL DATE** April 2, 2025
- **EXPIRATION DATE** Appril 2, 2026
- **TYPE OF MEETING**: Expedited
  After the expiration date, this research may only continue upon renewal. A progress report on a standard AUREC form should be submitted a month before the expiration date for renewal purposes.
- **SERIOUS ADVERSE EVENTS** All serious problems concerning subject safety must be reported to AUREC within 3 working days on the standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.

AFRICA UNIVERSITY
RESEARCH ETHICS COMMITTEE (AUREC)
APPROVED
P.O. BOX 1320, MUTARE, ZIMBABWE

Yours Faithfully

MARY CHINZOU
FOR CHAIRPERSON
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE

Appendix 5: Approval Letter

Muhlanguleni Cattle Business Centre
Muhlanguleni
Chiredzi

24 March 2025

RE: PERMISSION TO CONDUCT A RESEARCH AT MUHLANGULENI CBC

Dear Mr K Chakamanga

I write this letter in response to your request for permission to conduct a research on the topic titled '**The Profitability of Muhlanguleni Cattle Feedlot in Chiredzi, Zimbabwe**'. I am glad to inform you the Muhlanguleni CBC Board has approved your request and you can start at your earliest convenience.

Kindly get in touch with Mr Sithole for further assistance.

Kind regards,

Ms Mavis Mupapa
Acting Chairperson