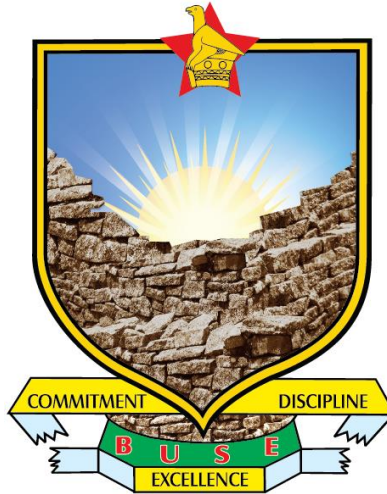


BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF COMMERCE

GRADUATE SCHOOL OF BUSINESS



**Topic: An analysis of Quality Function Deployment on the Financial
Performance in Zimbabwe's Seed manufacturing Industry: A Case of
SEEDCO Limited Zimbabwe**

BY

SILAS MUTOTA (B220022B)

SUPERVISOR DR. RM RUSIKE

**A dissertation submitted in partial fulfilment of the requirements for the
Masters in Business Leadership of Bindura University of Science Education**

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APPROVAL FORM

The undersigned confirm that they have read and commended to Bindura University of Science Education for acceptance a research project entitled, “An analysis of Quality Function Deployment on the Financial Performance in Zimbabwe’s Seed manufacturing Industry: A Case of SEEDCO Limited Zimbabwe”. Submitted by Silas Mutota (B220022B) in fulfilment of the requirements for the Masters in Business Leadership

Supervisor

I confirm that I have supervised Silas Mutota (B220022B) for this research project entitled, “An analysis of Quality Function Deployment on the Financial Performance in Zimbabwe’s Seed manufacturing Industry: A Case of SEEDCO Limited Zimbabwe”. In partial fulfilment of the requirements of the Masters Degree in Business Leadership.

Supervisor’s Name...Dr. RM Rusike....Signature...  Date 02.05/2024

Chairperson of the Department of Board of Examiners

The department Board of Examiners is pleased that this dissertation meets the examination requirements. I therefore commend Bindura University of Science Education to accept research project by Silas Mutota (B220022B) entitled “An analysis of Quality Function Deployment on the Financial Performance in Zimbabwe’s Seed manufacturing Industry: A Case of SEEDCO Limited Zimbabwe” in partial fulfilments of the requirements for the Masters Degree in Business Leadership

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DECLARATION

I, SILAS MUTOTA, do hereby declare that this dissertation is the result of my own investigation and research, except to the extent indicated in the Acknowledgements, References and by comments included in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.

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DEDICATION

This project research document is dedicated to all those whose unwavering support and encouragement have been instrumental in bringing this endeavour to fruition. To my family, whose love has been my anchor and source of inspiration, and to my friends and mentors who have shared their wisdom and guidance throughout this journey. Your belief in me has been a driving force, and I extend my deepest gratitude for being the pillars of strength that sustained me. This dedication is a token of appreciation for the invaluable contributions of those who have played a part, no matter how small, in the realization of this project.

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ABSTRACT

This study explores the relationship between Quality Function Deployment (QFD) and financial performance in manufacturing companies, with a specific focus on SEED CO Limited in Zimbabwe. QFD, a customer-driven quality management tool, has been instrumental in improving system quality and enhancing core competencies in various industries globally. Despite its proven benefits, the application of QFD in the seed manufacturing industry, crucial to Zimbabwe's agricultural sector and national food security, remains largely unexplored. The main objective of the study was to analyze the contribution of Quality Function Deployment to financial performance in the seed manufacturing industry in Zimbabwe, with secondary objectives including examining the relationship between QFD and financial performance at SEED CO Limited, determining factors affecting QFD implementation, and analyzing the efficacy of financial performance indicators of SEED CO Limited.

The study revealed that SEED CO Limited experienced a decline in sales volumes by 35% across varieties and a 17% drop in revenue from 2018 to 2022. This decline was attributed to factors such as changes in consumer preferences, climate change impacts, and increased competition in the market. The company's strategy of adopting a one-channel approach to product development, prioritizing internal expertise over farmer feedback, resulted in a misalignment between company offerings and stakeholder expectations. Issues raised by farmers and distributors highlighted the need for a more customer-centric approach in product design and distribution. The study found a significant correlation between the effective implementation of QFD and financial performance. However, weak implementation of QFD negatively impacted financial performance at SEED CO Limited. The study underscores the importance of integrating farmer feedback and expectations in product development and distribution strategies to improve sales volumes and overall financial performance.

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ABBREVIATIONS AND ACRONYMS

CR	Customer Requirements
FEMA	Failure Mode and Effects Analysis
HoQ	House of Quality
IMS	Integrated Management System
PDPC	Process Decision Program Chart
QFD	Quality Function Deployment
QMP	Quality Management Programs
RBV	Resource-Based View
ROE	Return on Equity
SERVQUAL	Service Quality
SPSS	Statistical Package for the Social Sciences
TOC	Theory of Constraints
TQM	Total Quality Management
UK	United Kingdom
VOC	Voice of the Consumer

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.0 Introduction

Examining the influence of quality management on the financial performance of manufacturing operations is crucial, as it directly affects product quality and economic outcomes. This study aims to explore the correlation between quality functions and the financial performance of manufacturing companies in Zimbabwe, with a specific emphasis on SEED CO Limited. The research endeavors to contribute to a deeper comprehension of the connection between quality function deployment and financial success in the context of manufacturing firms.

1.1 Background of the study

Quality Function Deployment (QFD) can be defined as a quality management tool which is customer driven adopted by firms with the aim of improving system quality, promoting innovation and enhancing the core competencies of enterprises (Zhang et.al 2022). In the manufacturing industry, quality functions encompass various activities and practices aimed at ensuring products meet or exceed customer expectations. High-quality products lead to customer satisfaction, brand loyalty, and enhanced financial performance (Goharshenasan 2022).

1.1.1 The World View

The widespread adoption of Quality Function Deployment (QFD) has significantly impacted various sectors, aiming to enhance customer experiences with the provided products and services. A study by Allehashemi et al. (2022) in Canada focused on a multi-objective model for optimizing the closed-loop supply chain of cellphones using fuzzy QFD. The results highlighted that QFD adoption led to improved alignment and distribution of quality materials and products, benefiting customers.

Similarly, Goharshenasan (2022) conducted a study in Iran, prioritizing economic indicators of a Smart Sustainable City through an integrative QFD approach. The study revealed that financial construal, risks, and opportunities ranked highest in learning and growth, followed by customer, internal processes, and financial aspects in the Balanced Scorecard (BSC). This demonstrated the

positive impact of QFD on operational improvement and the bottom line in commercial enterprises.

In healthcare, Tortorella et al. (2022) assessed and prioritized Healthcare 4.0 implementation in hospitals using QFD. The study, conducted in Brazil and India, allowed for a comparative examination, identifying similarities and differences in enhancement priorities. The findings indicated that the approach facilitated the systemic integration of Healthcare 4.0.

Moving to the Middle East, Abourokbah et al. (2023) conducted a study in Saudi Arabia, focusing on implementing QFD and SERVQUAL to improve the journey of orphans in a charity organization. The study illustrated that obstacles such as lack of resources, assurance, communication, information, and responsiveness hindered effective service quality at the orphanage. The adoption of QFD tools was seen as a transformative approach to address these challenges.

While QFD has demonstrated its significance in various sectors, there exists a gap in its implementation in critical areas such as seed manufacturing. Seed manufacturing plays a pivotal role in ensuring national food security and contributes significantly to the financial performance of companies. Addressing this gap could provide valuable insights into the application of QFD in this essential domain.

1.1.2 The Agricultural Revolution

Over the past five decades, agricultural yields have demonstrated significant improvements in industrialized economies, particularly in European and Asian countries that benefited from the Green Revolution. Conversely, crop yields in Africa, as highlighted by Tiftonell and Giller (2018), have remained largely stagnant or experienced only marginal increases, falling significantly behind the advancements observed in other regions globally. The pressing issue of access to inputs and the necessity to boost yields has become even more critical for ensuring food security in light of the challenges posed by climate change.

The impacts of climate change, including decreased rainfall, rising temperatures, and shortened growing seasons, are anticipated to affect most areas of Eastern and Southern Africa in the coming decades (Shuro and Kwaramba, 2022). These changes are poised to have adverse effects on food security, with yield reductions expected in the absence of effective mitigation efforts, particularly

in regions already considered marginal (Shuro and Kwaramba, 2022). A meta-analysis of future climate change impacts, as revealed by Challinor et al. (2014), suggests that 70% of research studies project declines in crop yields by the 2030s, with losses ranging from 10% to 50% in half of these studies. Consequently, there is an urgent need for seed manufacturing companies and farmers to proactively adapt to the changing climate, embracing solutions such as the adoption of crops and modern varieties that better withstand these environmental stresses.

In responding to the evolving climate challenges, the seed sector is expected to serve two primary functions. First, a national development function involves delivering the required types and quantities of seeds to small-scale and semi-commercial farmers in a timely manner and at affordable prices. Second, a firm-level efficiency function necessitates achieving these objectives while ensuring the full recovery of fixed and variable costs associated with seed multiplication, processing, and delivery (Chukulo, 2020). Performance in these functions is influenced by four key sets of factors: location-specific agro-ecological and socio-economic considerations, the national economic policy framework, the strength of linkages between seed organizations and allied institutions, and the internal efficiency within seed organizations shaped by their ownership and control structures (Ruwisi, 2022). Addressing these factors will be crucial for enhancing the resilience and effectiveness of the seed sector in the face of climate change and its associated challenges in the agricultural landscape.

1.1.3 The Zimbabwean Context

In Zimbabwe, the reduction in crop production and low seed demand are manifestations of climate change through increased temperatures and frequent floods which lead to reduced crop yields and/or crop failures (Ruwisi, 2022). According to the Seed Co Limited 2022 Annual Report, the company recorded a decrease in an inflation-adjusted turnover of ZWL\$9.3BN which is 8% lower than the restated prior year's ZWL\$10.1BN with the decline being credited to the decrease in volumes by 20% due to the late start of rains and pricing confusion at the start of the selling season. Cumulatively, in the past 5 years revenue has dropped by 17 % while volumes dropped by 35% across varieties.

On top of experiencing adverse effects of climate change in the market, the exogenous challenges were exacerbated by the war in Ukraine putting further pressure on supply chains and the global economy (Worldbank, 2022) . The Zimbabwean economy also continued to worsen due to

challenges associated with increased policy uncertainty, currency crisis, national debt crisis, hyperinflation, dysfunctional service delivery, and high unemployment. Against this global and local socio-economic and climate background, the company was faced with some unprecedented challenges that saw traded volumes declining compared to prior year (Worldbank, 2022). This has been exacerbated by the growth in the number of suppliers penetrating the market with different seed varieties (Chukulo, 2020).

In a bid to cushion and minimize the adverse fall in sales volumes, there are strategies that have been put in place such as increasing own production so as to increase leverage on cost of production and stock availability, reconfiguring the distribution model to manage associated costs to viable levels, localizing borrowings to manage exchange losses and revenue conversion to stock and other inputs quickly so as to lock value. Under the research and development arm, the company has adopted contemporary breeding technologies and maintained a conduit of product innovations that help in shortening the time from concept to market. This entails that the company adopts a one channel approach to development where it believes that anything that their experts produces will be of high quality and will be automatically accepted in the market, meeting the expectations of the farmers and achieving satisfaction (SEED CO Limited annual report, 2022).

This notion however has gaps as the farmers are the users and consumers of the seed and produce respectively hence their voice should be centric in the development, distribution and use of the product. In the stakeholder survey undertaken in 2022, results showed that Farmers (as one of the key stakeholders of the business) raised the following issues; product complaints such as the uneven growth, late maturity, roasting and low harvests; limited shopping options and platforms for instance the case of diaspora support; limited range of product package size among other issues. Similarly, distributors raised a similar complaint on product pack size being distributed, lack of product knowledge in particular new varieties and lastly accessibility of stock in remote areas (SEED CO Limited annual report, 2022). These issues outlined above reflect the existing gap/misalignment between what the company is providing and what the stakeholders are expecting hence this contributes significantly to the reduction in the sales volume. The aforementioned scenarios are strongly influenced by the perceptions of the farmers towards the seed type(s) being supplied .

Participation of farmers has a direct correlation to the quantity of seed purchased, the output at the end of the season and the tonnes to be sold which in turn has an effect on economic development as well as firm performance. In short, in the face of great economic tides and climate change, the company needs to elevate the farmer to a position whereby their thoughts and expectations are incorporated in product design. SEED CO Limited is a prominent player in Zimbabwe's agribusiness sector, and an analysis of its quality functions' impact on financial performance can provide insights applicable to the broader manufacturing landscape.

1.2 Statement of the problem

In a world where product quality remains topical in the consumer buying process, the idea of improving the production system becomes irrevocable. Literature reviews that to improve the quality of products and services being offered in the market by a company, the adoption of QFD has proved to be significant in yielding better results. QFD has improved the supply chain systems and product quality in the cellphone industry in North America (Allehashemi et.al 2022) ; revealed the most important economic indicators in the tourism and hospitality sector in the Middle East (Goharshenasan 2022); solved inefficiencies, improved systems integration and customer satisfaction in the implementation of Healthcare 4.0 in South America and South Asia (Tortorella et.al 2022); exposed the hinderances to effective service delivery in orphanages in Saudi Arabia (Abourokbah et.al 2023) and lastly improved restaurant food sales in Rwanda (Wang, et.al 2019). While QFD has consistently showed improvement in both production and costs efficiencies across the globe, the concept has not been thoroughly tested in the seed manufacturing industry. Zimbabwe's economy has a huge reliance on the agricultural sector as a key contributor to the national GDP however over the years, the companies such as SEEDCO Limited operating in this sector have not been posting positive metrics regarding sales volumes and profits. The decline in the sales of seeds by 35% across varieties and 17% in revenue from 2018 to 2022 shows the impact of changes in consumer preferences being influenced by their farming experiences, changes in climate change and the growth of competitor offerings in the market. The status quo has been exacerbated by a lack of customer satisfaction survey to view the concerns of the market. Hendricks and Singal (2017) argues that quality management is an important tool for fostering excellent financial performance. While QFD's positive impact on financial performance is widely acknowledged, there is limited research that specifically investigates this relationship within the

context of manufacturing firms in Zimbabwe. This research pursues to address this gap by analyzing how QFD influence the financial performance of SEED CO Limited and, by extension, similar manufacturing firms in Zimbabwe.

1.3 Research Objectives

1.3.1 The main research objective

The main research objective of the study was to analyse the contribution of quality function deployment on financial performance in the seed manufacturing industry in Zimbabwe.

1.3.2 Secondary Research Objectives

- To ascertain the relationship between quality function deployment and financial performance at SEEDCO Limited
- To determine factors that affect implementation of quality function deployment at SEEDCO Limited
- To analyze the efficacy of the financial performance indicators of SEED CO Limited.

1.4 Research Questions

1.4.1 Main Research Question was ‘How does quality function deployment contribute to financial performance in Zimbabwe seed manufacturing industry?’.

1.4.2 Secondary Research Questions

- How does the implementation of QFP impact the financial performance of SEED CO Limited?
- What are the factors that affect implementation of QFD on financial performance at SEED CO Limited?
- What are the financial performance indicators of SEED CO Limited?

1.5 Hypothesis of the Study

The research hypotheses are as follows:

HO: Effective implementation of QFD positively influences the financial performance of SEED CO Limited.

H1: Weak implementation of QFD negatively affects the financial performance of SEED CO Limited.

1.6 Assumptions of the Study

The study assumed that participants would provide accurate and reliable information regarding quality management practices and financial performance. Additionally, it assumes that SEED CO Limited will cooperate by providing access to relevant data.

1.7 Justification of the Study

The study's significance lies in its potential to shed light on the crucial connection between QFD and financial performance in the manufacturing sector. This knowledge can help manufacturing firms make informed decisions to optimize quality management practices and drive positive financial outcomes.

1.8 Purpose of the Study

The primary purpose of this study was to analyze the impact of quality functions on the financial performance of SEED CO Limited. By examining this relationship, the study aims to provide practical insights that can inform strategic decisions within the organization and similar manufacturing firms.

1.9 Significance of the Study

1.9.1 Significance to Theory

The study bestows to the existing body of knowledge by empirically examining the impact of quality functions on financial performance in the Zimbabwean manufacturing context.

1.9.2 Significance to Academia

The findings can enrich academic discussions on the relationship between quality management and financial performance in developing economies.

1.9.3 Significance to Practice

Manufacturing firms, including SEED CO Limited, can benefit from insights that guide the enhancement of quality management practices to achieve improved financial performance.

1.10 Delimitations of the Study

The research was constrained by specific boundaries related to its extent, geographical emphasis, and temporal scope. The extent of the study was confined to an examination of the influence of quality functions on the financial performance specifically within SEED CO Limited in Zimbabwe. The geographical focus was centered on the context of Zimbabwe, and the temporal framework was defined by the collection of data spanning from 2018 to 2022.

1.11 Dissertation Outline

The study was structured into five chapters:

Chapter 1: Introduction and Background Chapter I served as an introduction, providing insight into the background of the study, its focal point, the articulation of the research problem, the formulation of research objectives and questions, an exploration of the study's significance, assumptions, as well as its delimitations and limitations.

Chapter 2: Literature Review Chapter II undertook a comprehensive review of literature pertinent to the study's focal issue. Drawing from diverse sources such as published works, journal articles, bulletins, research papers, newspapers, and relevant websites, this chapter delved into the theoretical framework, conceptual framework, review of empirical literature, and identified existing research gaps.

Chapter 3: Research Methodology In Chapter III, the research methodology employed in the study was expounded. This involved a detailed exploration of the research design, considerations related to the population and sample, elucidation of sources of data, delineation of data collection procedures, and a discussion on the tools and techniques deployed for data analysis.

Chapter 4: Results Chapter IV was dedicated to the presentation and analysis of the collected data. Various analytical techniques were applied to interpret the findings of the study, offering insights into the research outcomes.

Chapter 5: Conclusions The final chapter, Chapter V, encapsulated the major findings of the study, presenting conclusions drawn from the research outcomes. Additionally, this chapter offered recommendations and suggestions for further improvements or avenues for future research.

1.13 Summary

This chapter introduced the research study's focus on analyzing the impact of quality functions on the financial performance of manufacturing firms in Zimbabwe, using SEEDCO Limited Zimbabwe as a case study. It provided background information, discussed the problem statement, outlined research objectives and questions, presented the hypothesis and assumptions, and discussed the purpose, justification, significance, and delimitations of the study. The subsequent chapters delved into the literature, methodology, data analysis, findings, and conclusions related to the research topic.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter offers a thorough examination of the current body of literature concerning Quality Function Deployment (QFD) and its implications for the financial performance of organizations. It places particular emphasis on the seed manufacturing sector in Zimbabwe, using SEEDCO Limited Zimbabwe as a case study. The primary objective of this chapter is to lay down a theoretical groundwork for the research while pinpointing any gaps or inconsistencies in the existing literature that warrant deeper exploration. The study endeavors to establish the connection between quality functions and the financial performance of SEED CO Limited, aiming to enhance the overall operational efficiency of seed manufacturing companies in Zimbabwe.

2.1 Literature Review Search Strategy

To conduct a systematic review of the literature, a structured search strategy was employed. Electronic databases, academic journals, books, and conference proceedings were extensively searched using keywords such as "Quality Function Deployment," "financial performance," "seed manufacturing industry," and "SEEDCO Limited Zimbabwe." Additionally, snowballing and citation tracing techniques were used to identify relevant sources. The search was limited to articles published between 2000 and 2021, in English, to ensure relevance and currency.

2.2 Quality Function Deployment (QFD)

Quality Function Deployment (QFD) is a systematic methodology originating from Japan, designed to translate customer requirements into specific design and production processes for products or services (Akao, 1990). Recognized as a valuable tool for enhancing product and service quality, increasing customer satisfaction, and bolstering competitiveness (Junior, 2022), QFD aims to understand customer needs, optimize quality to deliver maximum value, establish a comprehensive quality system for customer contentment, and develop strategies for continuous improvement (Sharma, 2020). Described by Liu and Wu (2018) as an effective quality tool, QFD fulfills customer needs by incorporating anticipated and desired characteristics into a product, thereby enhancing satisfaction and ensuring continual improvement. Widely acknowledged for its

ability to translate the "voice of the customer" into organizational methods (Hamilton & Selen, 2014), QFD plays a crucial role in product and service development.

The initial stage of QFD, also known as the House of Quality (HoQ) (John et al., 2014), is pivotal in this process. HoQ prioritizes design features based on target market requirements, serving as the most commonly used QFD matrix (Shahin, 2018). It acts as a roadmap for analyzing links between customer needs and designed service features, enabling effective assessment of customer satisfaction, enhancement of existing qualities, and expediting the development of new services (Camgöz-Akdağ et al., 2013).

Integration of Service Quality (SERVQUAL) and QFD has been explored in various studies. For instance, Kayapınar & Erginel (2019) applied these tools to enhance airport service quality in Turkey, informing the service design process based on passenger expectations. Camgöz-Akdağ et al. (2013) integrated SERVQUAL and QFD at a private university hospital to identify and maximize internal capabilities while meeting customer expectations. Altuntas and Kansu (2020) conducted a case study in a public hospital in Turkey, combining SERVQUAL, QFD, and FEMA to appraise service quality, resulting in increased customer satisfaction and reduced service failures.

Numerous studies consistently highlight the positive impact of QFD on quality and satisfaction. Akao (2004) emphasizes the benefits, including prioritizing customer desires, translating them into technical specifications, fostering a customer-centric culture, coordinating efforts to improve service quality, and ultimately elevating customer satisfaction.

2.3 Financial Performance

Financial performance refers to the assessment of a company's profitability, liquidity, solvency, and efficiency. Indicators such as return on investment (ROI), net profit margin, and earnings per share (EPS) play a crucial role in evaluating financial performance (Ross et al., 2019).

According to Penman (2017), financial performance is the measure of a business's level of performance over a specific timeframe, expressed in terms of overall profits and losses during that period. This evaluation allows decision makers to scrutinize the outcomes of business strategies and activities in unbiased monetary terms. Ananth & Lourthuraj (2013) elaborate that financial

performance is a subjective gauge of how effectively a firm can utilize assets in its primary business activities to generate revenues, guiding investment decisions.

The key ratios measuring organizational performance encompass profitability and growth, including return on assets, return on investment, return on equity, return on sale, revenue growth, market shares, stock price, sales growth, liquidity, and operational efficiency (Petersen & Kumar, 2020). While various metrics exist to gauge financial performance, they should be considered collectively. Important indicators include return on equity (ROE) and ratios related to liquidity, asset management, profitability, leverage, and market value. Additional financial indicators highlighted by Petersen & Kumar (2020) include sales growth, return on investment, return on sales, and earnings per share.

2.4 Total Quality Management Programmes and Financial Performance

Kaynak (2013) argues that achieving financial goals necessitates critical behavioral and attitudinal processes, including motivation at work, job satisfaction, and organizational citizenship. Total Quality Management (TQM) programs stimulate performance by fostering continuous improvement, leading to enhanced quality in processes, products, and services. This improvement, in turn, contributes to increased efficiency and effectiveness in project delivery and goal fulfillment. However, Ahire & Rana (2015) suggest that TQM requires substantial investments in financial, technical, and human resources over an extended period before tangible results or significant progress can be realized.

Sterman et al. (2007) propose that TQM, in the long run, boosts productivity, elevates quality, and reduces costs. However, in the short term, it may disrupt prevailing organizational routines and accounting practices, creating operational and financial stresses that could undermine organizational commitment to continuous improvement. Companies successfully implementing TQM outperform non-TQM firms across various metrics such as profitability, revenues, costs, capital expenditure, total assets, and the number of employees (Hendricks & Singhal, 2010).

Effective TQM implementation correlates with improved product and service quality, more efficient process design, and reduced wastage of company resources, ultimately leading to higher productivity. These findings align with a survey conducted by the United States Government Accounting Office (2010) on the effects of TQM programs on the financial performance of top-

scoring applicants for the Baldrige Award in 1988 and 1989. The results indicated that these companies achieved superior customer satisfaction, minimized errors and product lead-times, and fostered better employee relations. Additionally, the study revealed improvements in profitability, as measured by market share, return on assets, and return on sales.

2.5 Underpinning Theories

This study was grounded in the principles of Total Quality Management (TQM), Deming's theory, the Theory of Constraints, and Resource-Based Theory. These theoretical frameworks are essential as they aim to provide perspectives on practices related to quality management.

2.5.1 Total Quality Management (TQM)

Total Quality Management (TQM) represents a theoretical framework that underscores the significance of continuous improvement, customer focus, and active employee participation across all facets of an organization. In consonance with QFD principles, TQM places a priority on addressing customer needs and expectations (Dale, Wiele & Iwaarden, 2018). TQM systems are structured into four interconnected phases: product planning, part deployment, process planning, and production planning (Hao-Tien Liu, 2010). The House of Quality (HOQ) specifies the correlation between customer requirements (CR) – delineating what needs to be done – and how to achieve it. The utilization of QFD has garnered broad international endorsement for aiding decision-makers in product planning and enhancement (Abraham Moody & Vijay Panday, 2017).

TQM programs constitute an integral component of an organization committed to continuous improvement. Quality management programs offer tools and resources to enhance operational consistency, make informed decisions regarding quality, measure progress in achieving quality objectives, identify areas of success or improvement, and contribute to the resolution of identified issues (Allen & Kilmann, 2010). This is further elucidated by the House of Quality model depicted in Figure 2.1 below.

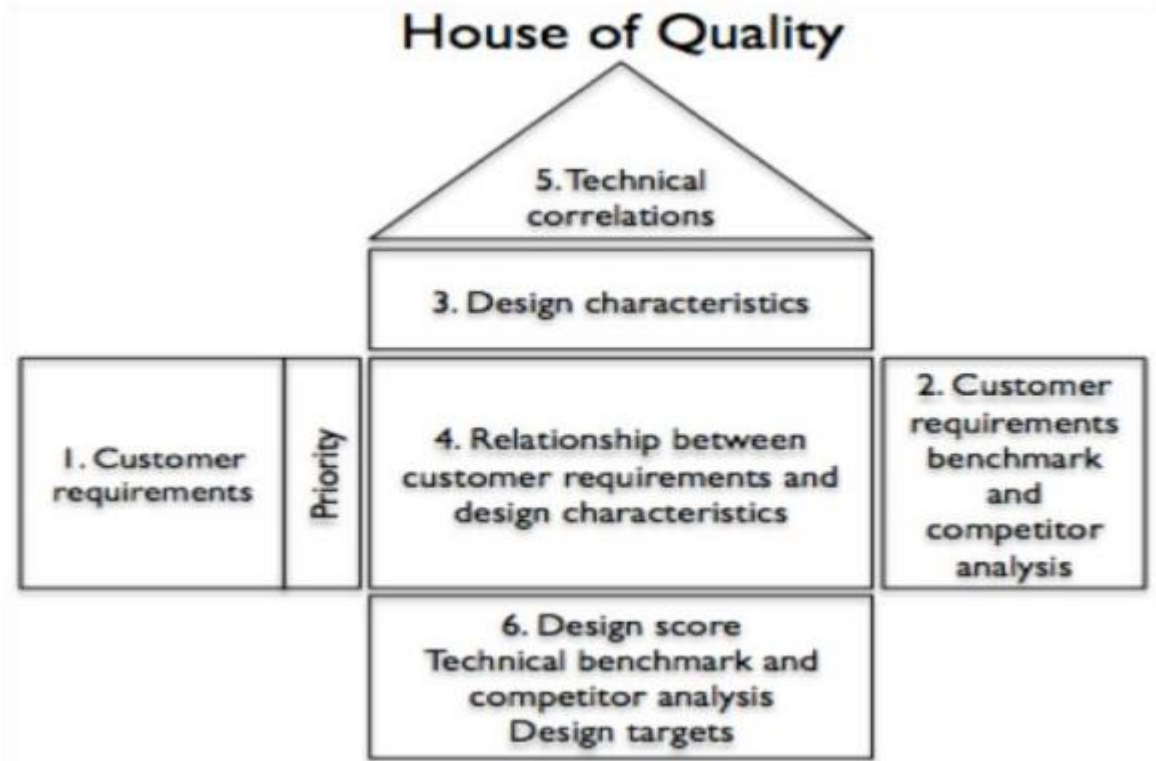


Figure 2.1. House of quality Source: Hao-Tien Liu, (2010)

The components of the Phases of Value (HOQ) in Figure 2.1 are as follows:

- Identifies Customer Requirements (CR) or "WHATS"
- Assesses Competitiveness of Service
- Translates Customer Requirements into engineering design characteristics or "HOWs"
- Defines the relationship between "WHAT" and "HOWs"
- Defines relations between various engineering design and design characteristics.

The method employed for determining "WHATs" and "HOWs" involves the use of focus groups (Hao-Tien Liu, 2010).

Quality Management Programs (QMPs) encompass various quality management and improvement initiatives, including Quality Assurance (QA), Total Quality Management (TQM), Excellent Model, Six Sigma, Integrated Management System (IMS), benchmarking, continuous

improvement, and ISO 9000. The successful implementation of TQM programs can positively impact the economic value of companies, contingent upon factors such as management commitment, openness to the environment, empowerment of employees, training, and process improvement (Allen & Kilmann, 2010).

TQM programs aim to integrate all organizational functions, directing attention toward meeting customer needs and organizational objectives through enhanced quality, productivity, and competitiveness (Allen & Kilmann, 2010). The implementation of TQM programs places a heightened emphasis on the roles of internal and external customers, suppliers, and the inclusion of employees in the pursuit of continuous improvement. Oakland & Tanner (2007) argue that effective management of change programs requires aligning the purpose of change with the operations of the firm to enhance their effectiveness. For commercial organizations, the practical value of TQM programs should be evaluated based on criteria such as improvements in organizational efficiency and effectiveness.

2.5.2 Demings Theory

Developed by Deming in the 1950s, Deming's theory aims to enhance the quality of goods and services, responding to the prevalent issues of low production and poor quality in American companies following the aftermath of the First World War. The theory posits that quality improvement can be achieved by enhancing the internal environment, ensuring continuous improvement, and monitoring results through statistical balances. It emphasizes the importance of system knowledge and an understanding of variation.

Deming's theory underscores the need for organizations to correct variations from their quality norms before the system deteriorates. In the context of this study, Deming's theory of quality is crucial as it provides insights into how organizations should operate to achieve continuous improvement in quality, ultimately contributing to the enhanced financial performance of firms.

2.5.3 Resource-Based View (RBV)

The Resource-Based View (RBV) theory posits that a firm's competitive advantage stems from its unique and valuable resources. In the context of applying Quality Function Deployment (QFD), organizations can utilize their resources to meet customer requirements, potentially influencing financial performance (Barney, 2011). Coined by Rapert and Suter (2016), the RBV theory asserts

that an organization's performance is contingent upon the resources it possesses. Total Quality Management (TQM) is recognized, according to Reed and Lemak (2010), as a tool for ensuring sustainable competitive advantages for organizations. Consequently, it becomes crucial for firms to assess their core competencies and capitalize on them to enhance their outcomes.

The RBV theory emphasizes the feasibility of controlling a firm's internal environments rather than external ones. Therefore, organizations should focus on enhancing their internal processes to improve the quality of products. Accordingly, companies are encouraged to concentrate on refining internal processes to augment their performance (Barney, 2011). The theory advocates for organizations to reinforce the efficiency of internal processes as a means to achieve their organizational goals.

2.5.4 Theory of Constraints

The Theory of Constraints (TOC), developed by Goldratt in 1980, offers a comprehensive approach to continuous improvement, delving into the foundational aspects of systemic changes within an organization. TOC asserts that to enhance organizational performance, management should strategically leverage the competencies and capacities of entities to improve both the quality and quantity of outputs. According to Dramman (1995), TOC advocates for paradigm shifts initiated by management at regular intervals to continually enhance organizational performance. Organizations aspiring to improve the quality of their products and services must judiciously utilize their resources by adopting efficient production methods.

Humair & Willens (2016) highlight that the presence of constraints can result in lower product quality if not addressed. TOC provides insights into strategies for elevating organizational performance through superior product and service quality. Therefore, the Theory of Constraints proves highly relevant to this study as it elucidates measures that entities can undertake to ensure and enhance continuous improvements. In essence, effective management will discern the means to progressively improve the quality of products over time (Shah, 2011).

2.6 Existing Models/Frameworks and Key Concepts

2.6.1 QFD Tools

The term "Total Quality Management" (TQM) refers to a strategic approach aimed at improving organizational performance, encompassing both technical and sociocultural factors (Tortorella et al., 2019). Quality tools (QTs) are specific visual methods effective in identifying issues with product quality (Tsironis, 2018). TQM tools can facilitate creative problem-solving, enhance performance, and increase customer satisfaction (Alfalah, 2017). These tools include the affinity diagram, interrelationship digraph, tree diagram, process decision program chart (PDPC), matrix diagram, prioritization matrix, and Quality Function Deployment (QFD). These tools are valuable for exploring customer focus, employee involvement, continual process improvement, and enhancing service/product quality, ultimately promoting and improving profitability by fostering increased customer satisfaction (Griffin, 2012). Moreover, these seven tools provide users with a visual language that simplifies the breakdown and exploration of complex situations that may be challenging to comprehend or address (Rajamanickam et al., 2018).

The effectiveness of these tools can be enhanced by integrating them into a cycle of activity, where the output of one activity becomes the input into the next one. For example, each fundamental statistical technique, such as the affinity diagram, can be utilized independently. When the affinity diagram organizes data, the interrelationship digraph highlights the relationships between variables. These seven management tools share a common methodology, and their versatility allows for successful individual use as well as in combination with others (Anjard, 2015).

The affinity diagram, also known as the "KJ method," was developed by Kawakita Jiro in the 1960s (Helmold, 2021). It is one of the seven key quality tools, commonly referred to as the seven management and planning tools, used for organizing data and ideas (Dias & Saraiva, 2014). Affinity diagrams help individuals better understand the core of the problem and potential solutions, facilitating the organization of requirements within the House of Quality (Mohsin et al., 2021). The interrelationship digraph elucidates the connections between categories in an affinity diagram and can be utilized to identify priorities, the root causes of problems, and customers' unstated needs (Özgener, 2013). Additionally, the QFD matrix section depicting technical correlations is an example of how this tool is employed (Shahin et al., 2010).

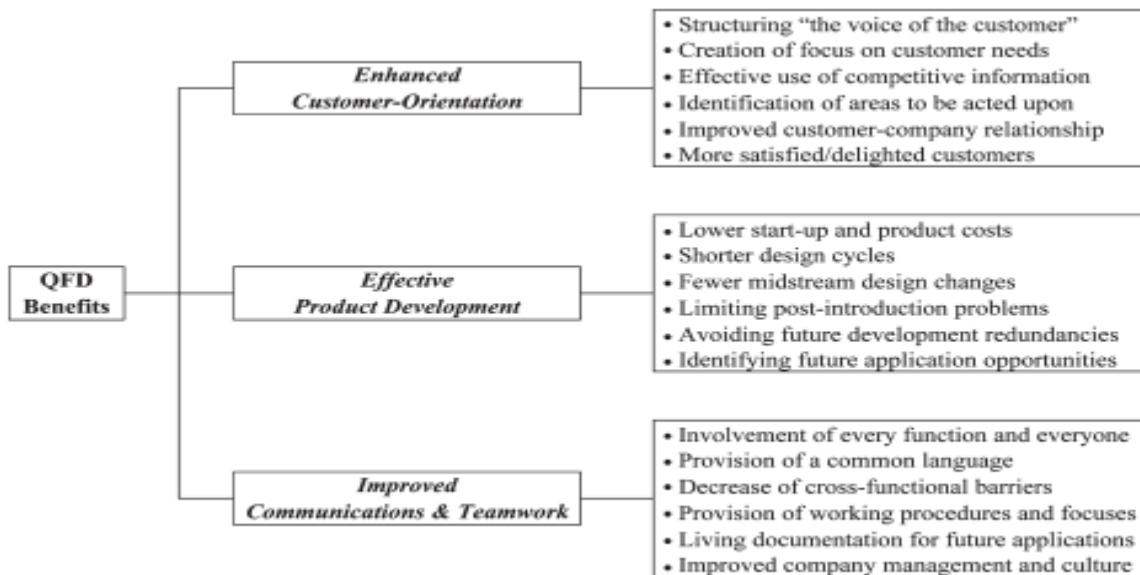


Figure 1: Tree Diagram -The qualitative benefits of using QFD

Source: Kharisma & Laumal (2019)

The tree diagram serves as a valuable tool for breaking down complex ideas into smaller, more manageable components, including policies, targets, goals, problems, and objectives (Pramono et al., 2018). It is employed to identify the root causes of a problem by systematically outlining the cause-and-effect relationships associated with priority issues (Kharisma & Laumal, 2019). The primary item is placed at the top and then subdivided into two or more branches; each branch is further divided into two or more branches, creating a tree-like structure (Pramono et al., 2018). Following the identification of primary issues through techniques like voice of the consumer (VOC) focus groups, surveys, and affinity diagrams, the tree diagram is utilized to determine both primary and sub-causes.

The Process Decision Program Chart (PDPC) method is predominantly employed in operations research as a problem-solving technique, offering a qualitative model represented graphically through tree charts. PDPC provides a systematic view of a phenomenon throughout the process, with each level delineating primary issues, primary causes, remedies, and risks, and the final level representing alternative options, each denoted by a different color (Chu & Tosirsuk, 2019). The

matrix diagram, closely related to PDPC, explores cause-and-effect relationships in detail and identifies root causes of difficulties in the production process (Tsironis, 2018).

PDPC solutions are analyzed to establish the link between causes and solutions, with symbols representing different values (e.g., ● for the highest relation with a value of 9, ○ for medium relation with a value of 3, and ∇ for weak relation with a value of 1). The prioritizing matrix, a quantitative representation of the strength of relationships among variables, is then employed to determine the order of implementing these solutions (Mohsin et al., 2021). This prioritization matrix is particularly useful for the technical assessment segment of Quality Function Deployment (QFD) (Shahin et al., 2010). It aids management and their team in identifying the sequence of activities or tasks based on parameters such as cost, time, and quality specifications (Damayanti et al., 2019). Following the implementation of these Quality Management tools, the gathered information will be integrated into the QFD.

2.6.2 Key Concepts

In Quality Function Deployment (QFD), key concepts involve identifying customer needs, often referred to as the "voice of the customer," translating these needs into technical requirements, and establishing priorities through the QFD matrix (Reid & Sanders, 2016). Customer satisfaction plays a pivotal role in influencing fundamental organizational outcomes, including brand loyalty, profitability, competitiveness, market share, and overall firm value (Joudeh & Dandis, 2018). Quality improvement serves as a foundational element for ensuring high-quality operations and outputs, enabling organizations to enter international markets and maintain competitiveness (Owusu-Kyei et al., 2023). At a fundamental level, enhanced service quality contributes to increased customer satisfaction, leading to improved business performance.

Deming (2018) emphasizes that a business's survival is contingent on customer satisfaction. Kotler (1994) defines customer satisfaction as meeting an individual's expectations and perceptions regarding a product or service. Previous studies commonly assume a connection between service quality dimensions and customer satisfaction (Narteh, 2018). Improving customer satisfaction stands as a major objective of Total Quality Management (TQM) (Anil & Satish, 2019). Studies across various industries, encompassing both service businesses and manufacturing, have demonstrated the impact of TQM on customer satisfaction (Owusu-Kyei et al., 2023). The

integration of internal and external quality control procedures directly influences customer satisfaction, as consumers are a critical aspect of service delivery (Khorshidi et al., 2016).

2.7 Discussion of the Key Variables/Dimensions

In the context of this research, key variables and dimensions include the implementation of QFD in SEEDCO Limited Zimbabwe, financial performance metrics, and customer satisfaction.

2.8 Literature Synthesis & Conceptual Framework/Model

The synthesis of the literature suggests that QFD can positively impact financial performance by aligning product or service design with customer expectations. However, the relationship between QFD and financial performance may be influenced by factors such as organizational culture, resources, and market dynamics. A conceptual framework was developed to guide the empirical investigation in Chapter 4.

2.8.1 Quality Management and its Influence on Performance

This section provides a review of previous studies focusing on quality management and its impact on performance, organized according to specific objectives. Otieno (2016) conducted a study on continuous improvement techniques and efficiency in Kenyan commercial banks. The study aimed to establish the relationship between continuous improvement and bank efficiency, utilizing questionnaires and a descriptive research design. Findings highlighted the critical role of quality improvement programs, leadership, training, and customer focus in enhancing efficiency. However, the study did not delve into the effects on overall firm performance, and the operational differences between banks and manufacturing firms were acknowledged.

Wachira (2013) explored the impact of quality management on Kenyan supermarkets' performance, emphasizing customer satisfaction and cost reductions. The study employed a descriptive research design and regression analysis, revealing a positive relationship between quality management and supermarket performance. While the findings were statistically significant, the study focused on the retail sector, which operates in distinct economic environments compared to manufacturing firms.

Okombo (2013) investigated benchmarking practices in Nairobi hotels, revealing widespread adoption of benchmarking processes. Deshon (2014) identified the positive impact of

benchmarking on the financial performance of Kenyan SMEs. Similarly, Whymark (2018) in the UK found that benchmarking facilitated organizational change and improved efficiency. Akuma (2017) explored the effects of benchmarking in the Tanzanian Ministry of Agriculture, concluding that it improved process efficiency in state firms. These studies offer valuable insights into benchmarking's positive influence on various sectors, although the focus on service and public sectors may limit direct applicability to manufacturing firms in Nairobi.

Adam, Corbett, Flores & Harrison (2017) assessed the effects of quality management on the performance of healthcare institutions in the Netherlands, emphasizing the role of service quality in performance improvement. The study, while providing valuable insights, focused on service firms and public hospitals, making its applicability to manufacturing firms in Nairobi less direct.

Karen, Antony, and Douglas (2017) examined critical success factors for continuous improvement in the UK's public sector, identifying supplier relationships, customer expectations management, and staff training as crucial. Oprime et al. (2018) studied factors influencing continuous improvement performance in Brazil, highlighting the paramount commitment of employees. Adeoti (2013) found positive effects of total quality management on the performance of Nigerian commercial banks.

Tohidi et al. (2011) investigated organizational learning's impact on innovation in Iranian ceramic companies, emphasizing its positive influence on performance. While the study provided crucial insights, it did not measure the direct impact of continuous improvement on the financial performance of manufacturing firms.

2.8.2 Conceptual Framework

The theoretical framework guiding this study is predicated on the idea that the incorporation of quality control measures within seed manufacturing firms has a direct impact on financial performance. The framework illustrates the interconnectedness among quality control practices, continuous improvement, customer-centric approaches, commitment from top management, benchmarking practices, supplier collaborations, and the overall performance of manufacturing firms, as illustrated in Figure 2.1 below.

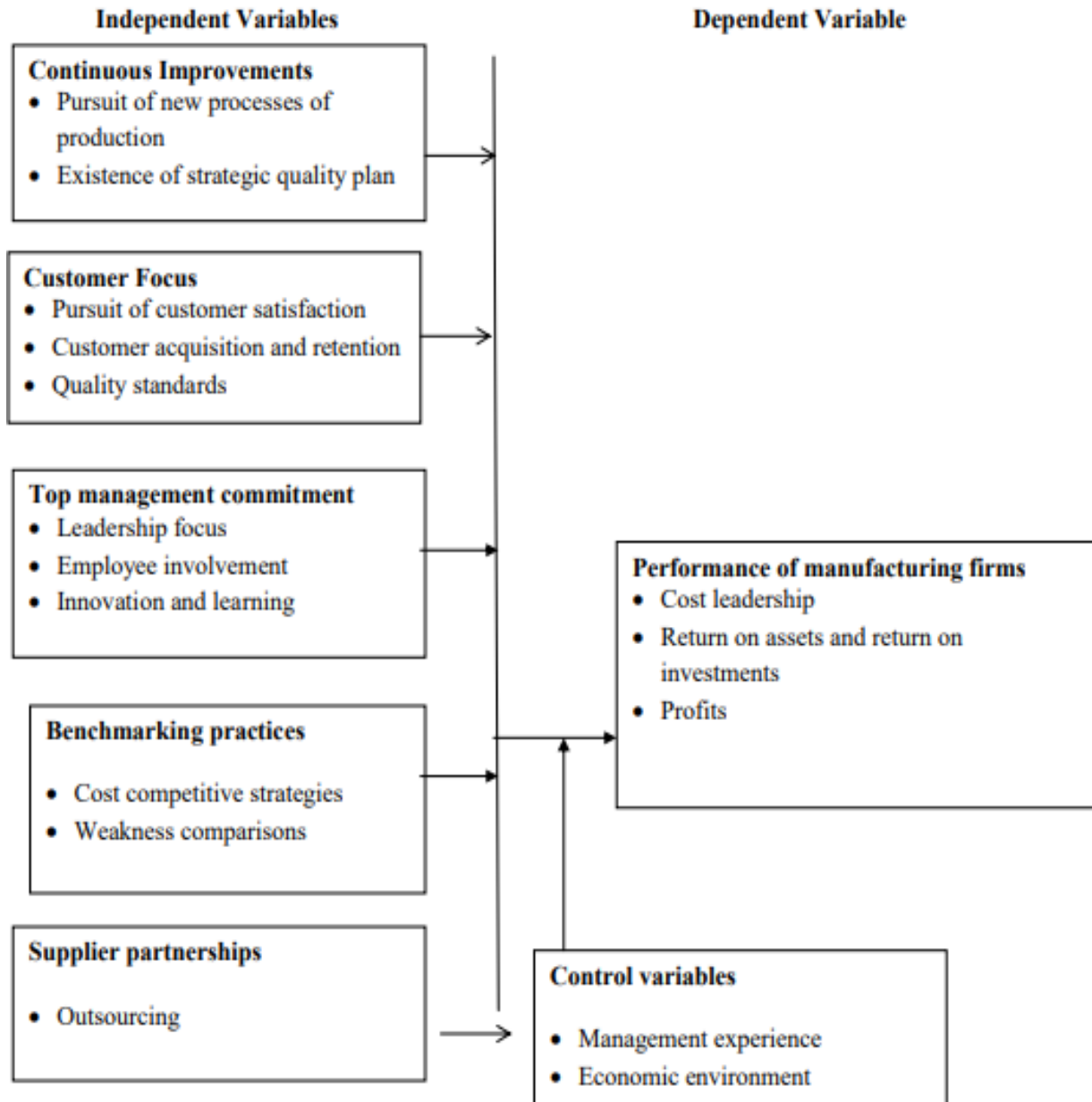


Figure 2: Conceptual framework for the relationship between quality function deployment on the financial performance of manufacturing firms

Source: Researcher, (2023)

The study was premised on assessing the impact of quality management on financial performance of SEEDCO Limited a seed manufacturing firm in Zimbabwe. This study considered independent variables being continuous improvement and benchmarking which are aspects of quality management. Continuous improvement idealize that a firms process should be often be evaluated

because there are inherent avenues for chances of bettering it in terms of efficiency and quality of products and services (Chien & Su 2013). It pursues to guarantee customer satisfaction and that the quality of products is high and on the other hand, benchmarking factors include weakness comparisons and cost competitive strategies. The dependent variable is the performance of the firm measured in terms of return on assets, profitability, market share and lastly cost leadership. The top management of a firm should commit themselves to improve quality of products and services. It is crucial to note that quality is a function of various factors and therefore the top management needs to set standards on quality (Costa, Dekker & Jongen, 2010). Customer focus means that the satisfaction of customers is put into consideration during management practices that seeks to ensure that raw materials are parts are of high quality (Chien & Su 2013).

2.10 Chapter Conclusion

In this chapter, a comprehensive examination of the existing body of literature on Quality Function Deployment (QFD) and its influence on financial performance within the seed manufacturing sector, with a specific focus on SEEDCO Limited Zimbabwe, was presented. The review delved into foundational theories, essential concepts, and pertinent variables pertinent to the study. Furthermore, it elucidated potential areas of contention within the literature and formulated research propositions and questions that will guide the empirical investigation in the subsequent chapters. The ensuing chapter will expound upon the research methodology, delineating the chosen research design, methods for data collection, and analytical approaches employed to address the research questions in a robust manner.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction to the Chapter

This chapter explores the research methodology employed in the study titled "An Analysis of Quality Function Deployment on the Financial Performance in Zimbabwe's Seed Manufacturing Industry: A Case of SEEDCO Limited Zimbabwe." It outlines the research philosophy, approach, design, strategies, data collection methods, sampling techniques, and data analysis procedures. Additionally, ethical considerations were addressed to ensure the study's integrity and adherence to ethical principles.

3.1.1 Research Aim

To investigate the impact of Quality Function Deployment (QFD) on the financial performance of companies operating in the seed manufacturing industry in Zimbabwe, with a specific focus on SEEDCO Limited Zimbabwe.

3.1.2 Main Study Objective

The main objective was to assess how the implementation of QFD influences the financial performance of SEEDCO Limited Zimbabwe.

3.1.3 Major Research Question

What is the relationship between Quality Function Deployment (QFD) and the financial performance of SEEDCO Limited Zimbabwe?

3.1.4 Hypotheses

- H1: Quality Function Deployment positively influences the financial performance of SEEDCO Limited Zimbabwe.
- H2: The relationship between Quality Function Deployment and financial performance is moderated by organizational factors.

3.2 Research Philosophy

The underlying research philosophy for this study aligns predominantly with positivism. Positivism, rooted in empirical observation, seeks to establish causal relationships between variables (Bryman, 2016). According to Creswell (2014), it is essential for researchers to explicitly articulate the broader philosophical foundations guiding their research, justifying the selection of their chosen research approach—whether quantitative, qualitative, or a mixed methods approach. In this study, a mixed methods approach was adopted to facilitate triangulation, accommodating both the quantitative and qualitative aspects. This philosophical stance aims to objectively measure the impact of Quality Function Deployment (QFD) on financial performance.

3.4 Research Approach

This study employed a deductive approach, specifically focusing on testing theory. The Deduction Approach involves the development of a theory that undergoes rigorous testing based on scientific principles (Creswell, 2014). This approach aims for a conclusive inference, where the supposition logically follows from the given reasons. According to Collis and Hussey (2003), the deductive approach is predominant in social science research. The rationale for adopting this approach lies in the study's intention to either validate or challenge the theory that Quality Function Deployment (QFD) influences the financial performance of manufacturing firms. The study did not seek to formulate a new theory in this context.

3.4.1 Deductive Approach

A deductive approach was employed to test the research hypotheses. Starting with established theories and hypotheses (deductions), the study collected and analyze data to confirm or refute these hypotheses (Saunders et al., 2018).

3.4.2 Inductive Approach

Additionally, an inductive approach was used to explore emerging themes and insights from the data. This approach allowed for a deeper understanding of the phenomenon under study, beyond the predefined hypotheses (Bryman, 2016).

3.5 Research Design

The research design serves as the overarching plan or strategy for inquiry, guiding how the study's research questions are addressed (Creswell, 2014; Saunders et al., 2013). In this study, a cross-sectional design was employed. This design was chosen to facilitate the collection of data at a specific moment in time, enabling an evaluation of the relationship between quality function deployment and financial performance.

3.5.1 Descriptive Design

The research design predominantly embraced a descriptive approach, intending to elucidate the connection between QFD and financial performance within the context of SEEDCO Limited Zimbabwe (Creswell & Creswell, 2017).

Top of Form

3.5.2 Exploratory Design

Elements of an exploratory design were also incorporated to identify potential moderating factors or unexpected patterns in the data (Creswell & Creswell, 2017). This was important in assuring the accuracy of data.

3.5.3 Explanatory Design

An explanatory design was employed to establish causal relationships between QFD and financial performance and to explain the influence of moderating variables (Creswell & Creswell, 2017).

3.6 Research Strategies

The research combined quantitative and qualitative strategies. Quantitative methods were used to test the hypotheses, while qualitative methods were employed to gain a deeper understanding of the organizational context and potential moderating factors (Creswell & Creswell, 2017).

3.7 Methodology and Data Collection Methods

3.7.1 Secondary Data Collection

Milne (2012) defined secondary data as information gathered by separate party other than the one going to use it. Secondary data will be collected from published academic articles, reports, and

company documents to provide background information on QFD, the seed manufacturing industry, and SEEDCO Limited Zimbabwe. Caswell (2013) posited that secondary sources of data are easy to access hence this saves time. The researcher opted to use secondary sources because they were readily available on the internet, in the financial statements and management reports. Similarly, as a result of limited amount of time available to the researcher, secondary sources were imperative in making sure that all information was made available in time.

3.7.2 Primary Data Collection

Primary data was collected through surveys and interviews. Two research instruments were employed in this study: questionnaires and interviews. Questionnaires were used to collect quantitative data, while interviews were conducted to gather qualitative data. The use of these instruments allowed for the collection of both types of data, providing a comprehensive understanding of the research problem. The main reason why the researcher used primary source of data was because it provided the researcher with more reliable information. Primary data collection had its own challenges which the research overcame through the use of secondary data as a substitute where primary data was not found.

3.7.3 Questionnaire (Interview Guide) Development

A structured questionnaire and interview guide were developed based on the research objectives and hypotheses. Questions focused on QFD implementation and financial performance metrics.

3.7.3.1 Questionnaires

A structured questionnaire was designed to gather quantitative data on the relationship between quality function deployment and financial performance. Questionnaires are tools for collecting data that consist of a series of questions and prompts designed to gather information from respondents. Questionnaires were chosen as a method of data collection due to their versatility, as they could be administered independently or serve as a basis for phone interviews. Questionnaires can reach a wide range of respondents through various means, such as postal mail, email, or fax. They offered advantages such as wide coverage, cost-effectiveness, respondent anonymity, and the absence of interviewer bias. However, challenges associated with questionnaires included design issues, potential for low response rates, and delays in receiving responses. To address these challenges, the researcher used simple language, concise and specific close-ended questions, as

well as provide clear instructions at the beginning of the questionnaire to enhance the response rate.

3.7.3.2 Interviews

To delve deeper into the research topic, in-depth interviews were conducted by the researcher. A total of ten one-on-one interviews were planned with managers of SEEDCO Limited in Harare who were, conveniently selected from the population. Participants were asked open-ended questions regarding their experiences in the seed manufacturing industry. Interviews provided the opportunity for immediate question clarification were respondents did not understand and they fostered a good rapport to obtain relevant information. The interview format allowed for one question at a time, with adequate time for responses and elaboration, particularly for unstructured questions. Interviews, although time-consuming, complemented the questionnaires and observations to minimize limitations.

3.7.4 Pilot Testing

The questionnaire and interview guide underwent pilot testing to ensure clarity and reliability. Feedback from the pilot were used to refine the instruments.

3.8 Population and Sampling Techniques

3.8.1 Population

The population of interest comprised individuals with knowledge of QFD implementation and financial performance at SEEDCO Limited Zimbabwe, including employees, managers, and executives. Population, in this context, refers to the entire group of individuals, events, or objects that are relevant to the researcher's inquiry (Sekaran and Bougie, 2013).

Table 1: Target Population

Category of Respondents	Population	Sample
Employees	474	209
Managers	34	15
Total	508	224

Source: Researcher, (2023)

The population elements of analysis under study were the employees and management of SEEDCO Limited operating in Harare. The focus was on individuals occupying managerial positions, as well as subordinates in different departments.

3.8.2 Sample Sizes

Sample sizes was determined based on statistical power calculations to guarantee the study's validity and reliability. Due to resource constraints and time limitations, a sample size was selected from the larger population. A sample size calculator was adopted to determine the appropriate sample size for the study, ensuring sufficient statistical power to make meaningful conclusions. Slovin's formula, which was formulated in 1960 was used to determine the sample size (Tejeda & Punzalan, 2012)

$$n = \frac{N}{1 + Ne}$$

Where n = sample size, N = total number of SEEDCO Limited employees operating in Harare was 508 (the sampling frame), and e = margin of error. N = 1508 and a margin of error of 5%, (e) = 0.05. That is, the researcher's confidence level was 95%.

$$\begin{aligned} n &= \frac{508}{1 + 1508 (0.05)^2} \\ &= \mathbf{223.78} \end{aligned}$$

The above means that the minimum sample size was 223.78, so the sample size of 224 was appropriate.

3.8.3 Sampling Methods

Stratified random sampling was employed to select participants from diverse departments and hierarchical levels within SEEDCO Limited Zimbabwe. This method involves categorizing the population into distinct and non-overlapping strata or sub-groups based on specific attributes (Saunders et al., 2009). The goal was to ensure adequate representation from various sub-populations, allowing for comprehensive data analysis. Each stratum was internally homogeneous but differed from other strata (Blumberg et al., 2013). The population was stratified based on job levels, distinguishing between managers and subordinates. Random samples were then drawn from each stratum to guarantee a representative sample encompassing different organizational levels.

3.9 Questionnaire Administration/Conducting Interviews

Data collection was conducted through a combination of online surveys and face-to-face interviews. Questionnaires were distributed electronically, and interviews were scheduled with selected participants at their workplaces. The data collection process was conducted over a defined period to ensure adequate response rates.

3.10 Methods of Data Analysis

Quantitative data gathered through the questionnaires underwent analysis using statistical software, including SPSS. The analytical process encompassed descriptive statistics, correlation analysis, and regression analysis to assess the research hypotheses. For qualitative data obtained from interviews, a transcription process was followed, followed by coding and thematic analysis to identify recurrent patterns and themes. The quantitative analysis techniques were applied to process and present the data in a condensed form for manageable summarization and comparison, enabling the evaluation and interpretation of results in the context of the research problem. Visual aids such as charts, graphs, and tables were utilized to represent the data comprehensively. Statistical tables were constructed to succinctly present detailed numerical information, while charts facilitated a rapid understanding of research findings, aiding in drawing conclusions.

3.11 Validity and Reliability

Validity, referring to the extent to which a test measures its intended construct, and reliability, indicating the consistency of measurement, are crucial aspects of research (Creswell, 2014). Before administering the questionnaire to participants, a pilot test was conducted. Content validity was ensured through a comprehensive literature review and the pilot test. Following the review, the questionnaire was shared with five experts in the field to obtain additional insights. Validity was further enhanced by employing established measurement scales, conducting pilot testing, and incorporating expert feedback. Reliability was evaluated using Cronbach's alpha for survey items and inter-rater reliability for interviews.

3.12 Ethical Considerations

This research strictly adhered to ethical guidelines, prioritizing principles such as informed consent, data confidentiality, and participant well-being. Ethical approval was diligently obtained from the relevant ethics committee before commencing the study. Recognizing the significance of ethical considerations in questionnaire-based data collection, the researcher secured a clearance letter from the University. Throughout the data collection phase, utmost respect for the rights of participants was maintained, encompassing the right to withdraw from the research, the voluntary nature of participation, and the option to skip specific questionnaire items. Informed consent was explicitly sought, and participants were assured of protection from harm, confidentiality, anonymity, and non-traceability. To uphold ethical standards, sensitive information, including names and personal income, was intentionally omitted as it was deemed unnecessary. Ethical considerations were consistently prioritized throughout the entire research process.

3.13 Chapter Summary

This chapter delineated the research methodology, encompassing facets such as research philosophy, approach, design, strategies, data collection methods, sampling techniques, data analysis procedures, validity, reliability, and ethical considerations. By employing a mixed-methods approach, which combines quantitative and qualitative methods, the study aimed to offer a holistic understanding of the influence of Quality Function Deployment on the financial performance of SEEDCO Limited Zimbabwe. The forthcoming chapter will present a detailed analysis of the gathered data, unveiling valuable insights into the application of quality function deployment within the seed manufacturing industry in Zimbabwe.

CHAPTER IV

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

In this chapter, an elucidation of the data analysis and interpretation is presented, centering on the investigation into the influence of Quality Function Deployment (QFD) on the financial performance of manufacturing firms in Zimbabwe. Utilizing the SPSS software, the study conducted an array of statistical analyses, encompassing descriptive statistics, regression analysis, and correlation analysis. Furthermore, insights derived from interviews with key stakeholders are systematically presented based on the research objectives. This chapter undertakes a thorough scrutiny of the amassed data, aimed at addressing the research objectives and providing a nuanced understanding of the intricate connections between quality functions and financial performance within the manufacturing sector, with specific attention to SEEDCO Limited Zimbabwe.

4.1 Questionnaire Response Rates

The researcher handed out 209 questionnaires to the employees and 15 interviews were planned with managers of SEEDCO Limited Zimbabwe. According to Babbie (2005), the response rate is defined as the number of people who took part in a survey divided by the number of people who were randomly selected from the sample and expressed as a percentage. Only 179 out of 209 questionnaires were returned, with the remaining 30 going unanswered.

Table 2: Questionnaire Response Rate

	Questionnaire	Percentage
Response	179	85.6%
Non Response	30	14.4%
Total	209	100%

Table 4.1 shows that 179 out of 209 questionnaires were returned, representing a response rate of 85.6%. A response rate of 75% or more is regarded exceptionally good by Martella, Nelson, and

Morgan (2013). The higher the response rate, the more reliable the sample's results are expected to be, and hence the research findings can be considered reliable.

4.2. Socio-Demographic Characteristics of Respondents

Many researchers have looked into demographic factors how they influence a variety of aspects of human life. Demographic traits are tremendously essential in human connection. The socio demographic criteria taken into account for the study are gender, age, and degree of education.

4.2.1. Gender of Respondents

The consideration of gender distribution among respondents holds significance in this study, acknowledging the influential impact of gender stratification on the performance of employees, particularly managers. Therefore, participants were asked to specify their gender to provide insight into this aspect.

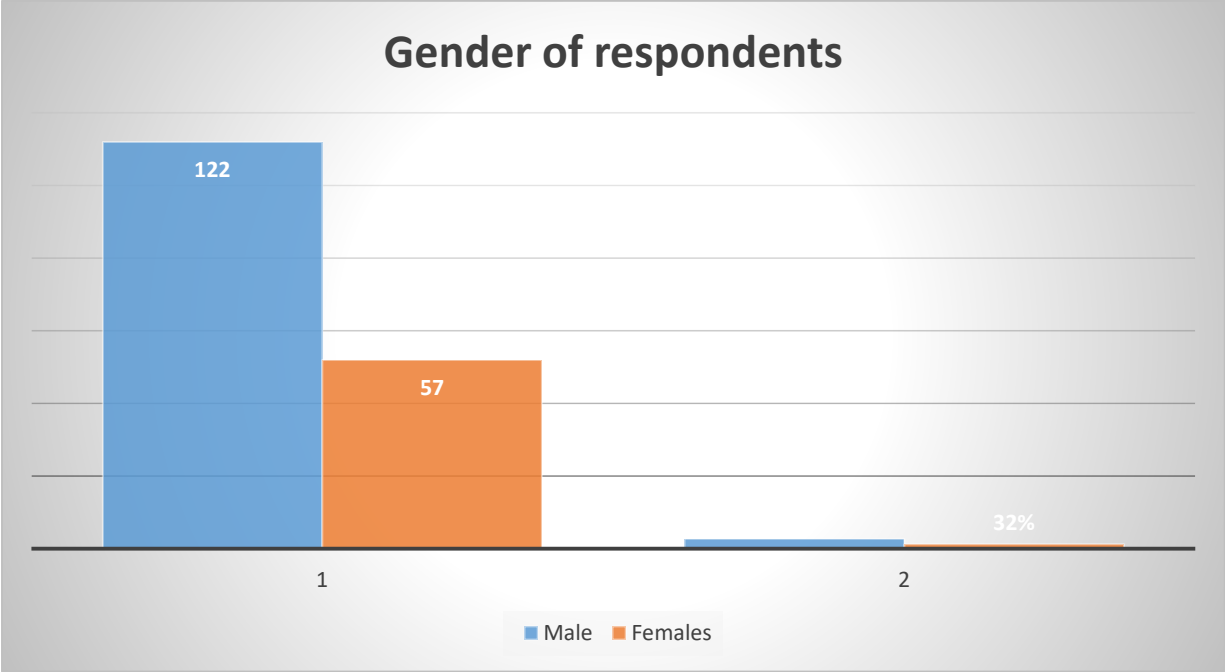


Figure 3: Distribution of Respondents by gender

Source: Primary Data (2023)

The distribution of respondents' gender is depicted in Figure 4.1. The results indicate a higher representation of males, comprising 68%, compared to females, accounting for 32%. These findings suggest a predominant inclusion of male participants in the sample. This aligns with the

outcomes of Nyang’au's (2014) study, which reported a male-dominated employment landscape in Kenyan manufacturing companies, with 62% males and 38% females. However, it contrasts with Akugri, Wulifan, and Bagah's (2015) findings in Ghana, where more females were employed in manufacturing companies than males.

4.2.2. Age distribution of Respondents

Analysis of data on the respondents’ age was undertaken to determine the category of age groups of respondents, To this end, respondents were tasked to state their ages.

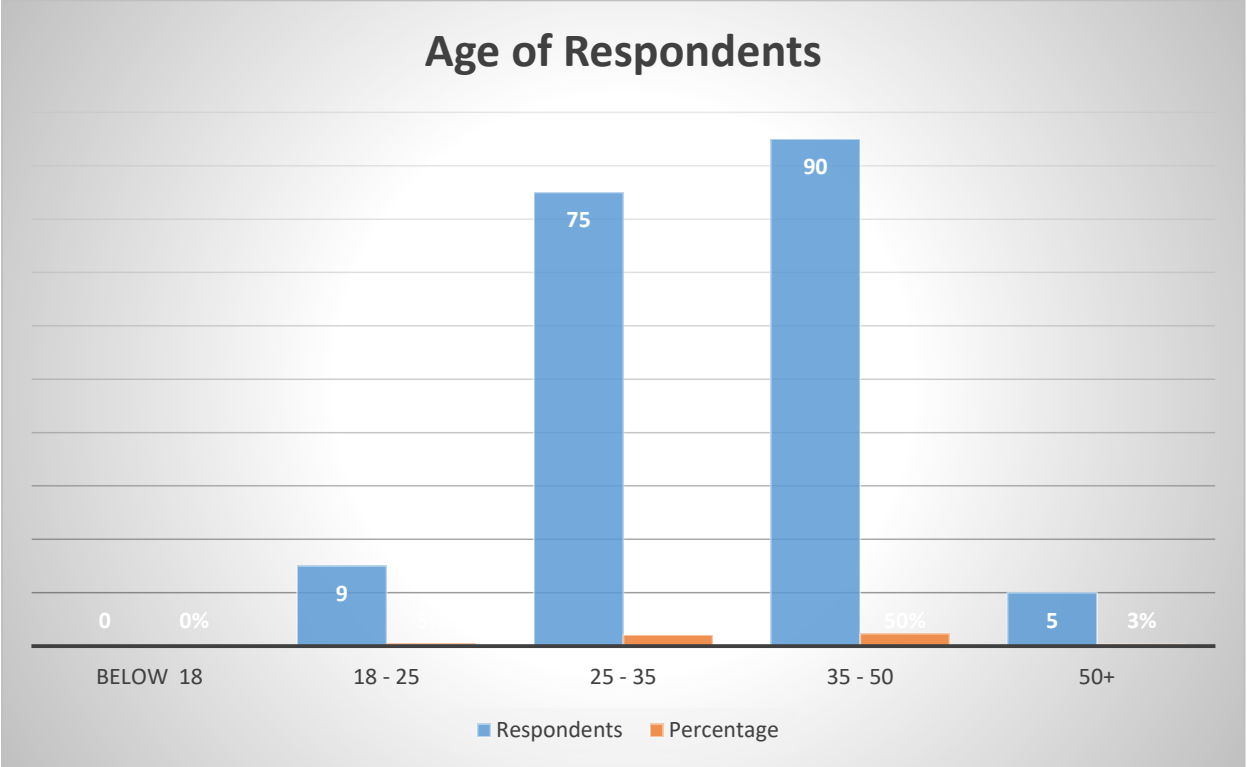


Figure 4: Distribution of Respondents by Age

Source: Primary Data (2023)

The results presented in Figure 4.2 indicate that the majority of respondents (97%) fall within the economically active age range of 18 to 50 years, with only 3% being above 50 years old. Within this economically active age group, the distribution is as follows: 50% in the 35–50 years age range, 42% in the 25–35 age range, 5% in the 18–25 years age group, and 3% in the 50+ age group. This pattern aligns with the findings of Rahman and Alam's (2013) study, which observed a

prevalence of employees aged between 31 and 40 years, constituting 71% of the workforce in Ghanaian organizations.

4.2.3. Educational Background of Respondents

The researcher enlisted a question on the educational background of respondents to get insight into their appreciation of the subject under study

Figure 4.3 presents the distribution of respondents by level of education attained.

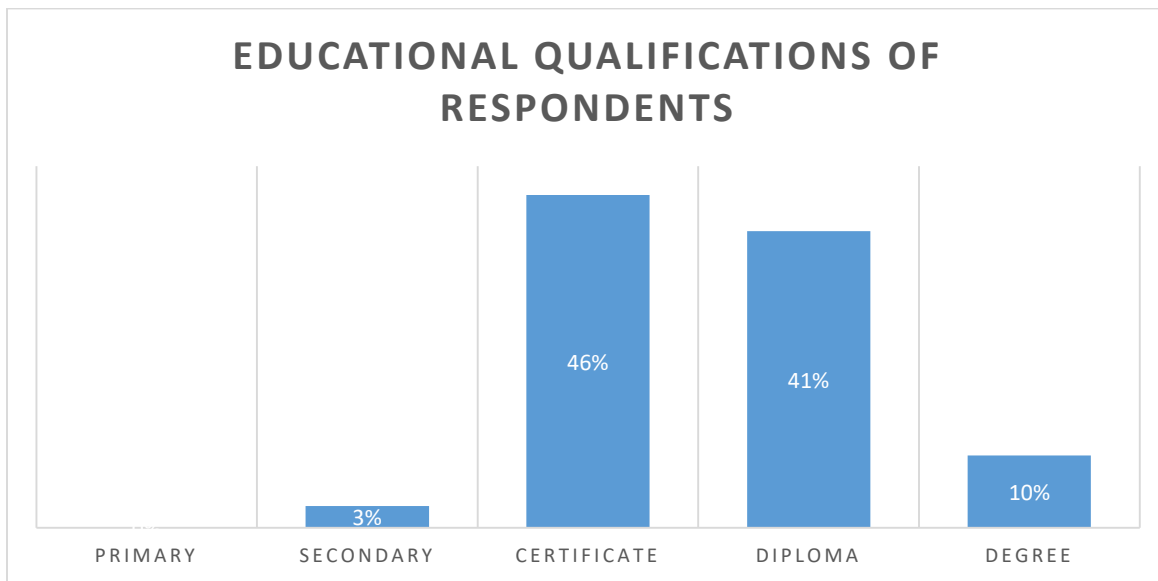


Figure 5: Educational Qualification of Respondents

Source: Primary Data (2023)

According to the study findings, 46% of the employees hold vocational training certificates, 41% hold diplomas, 10% possess degrees, and 3% have Ordinary and Advanced level certificates. This suggests that a significant portion of the manufacturing sector workforce in Zimbabwe comprises certificate holders. This contrasts with the findings of Rahman and Alam's (2013) study in Ghana, which indicated that the majority of manufacturing employees were secondary school leavers (62%), with tertiary certificate holders accounting for 29%. Similarly, Nyang'au's (2014) study in Kenya reported that 61% of manufacturing employees were secondary school or college graduates, presenting a different demographic profile than the Zimbabwean manufacturing sector.

4.2.4 Experience with the company

The frequency distribution table was adopted to unravel the working experience of respondents with the company as in table 3

Table 3: Experience with the company

Experience	Frequency	Percentage
Below 2 years	17	9%
2- 5 years	65	36%
6-9 years	37	21%
10-15 years	26	15%
16+ years	27	16%
Non Response	7	4%
Total	179	100%

Source: Primary Data (2023)

Table 4.2 shows that most of the respondents had experience of over 2 years constituting 91% whilst a mere 9% had below 2 years' experience. This implies that most of the respondents appreciated very well the manufacturing industry and were aware of the problem under study.

4.2.5: Operational Area

The frequency distribution table was adopted to describe the area of operation of the respondents in their company as indicated in table 4

Table 4: Operational Area

Area	Frequency	Percentage
Production	84	47%
Human Resource	24	13%
Marketing	14	8%
Administration	19	11%
Finance	16	9%
Transport & Logistics	17	10%
Non Response	5	3%
Total	179	100%

Source: Primary Data (2023)

Table 4.3 above show that most of the respondents were from the production department constituting 47%, followed by human resources 13%, Administration 11%, transport and logistics department 10%, finance 9 % and marketing 8% and 3% did not indicate their operational area. This indicates a fair representation of all the departments in the organisation.

4.3 Descriptive Statistics

4.3.1 Quality Functions Deployment

To assess the quality functions deployment practices implemented by SEED CO Limited, the researcher conducted a survey among key personnel within the organization. The survey included questions that covered various aspects of quality management. The following table summarizes the key findings related to quality functions deployment practices:

Table 5: Descriptive Statistics for Quality Functions Deployment

Quality Function	Mean Score	Standard Deviation	Minimum Score	Maximum Score
Quality Control Processes	4.2	0.68	2.1	5.0
Continuous Improvement Efforts	4.5	0.75	2.5	5.0
Quality Assurance Programs	4.0	0.62	2.3	5.0
Employee Training	4.3	0.70	2.2	5.0

Source: Primary Data (2023)

Table 4.4 provides descriptive statistics for various quality functions deployment practices assessed through a survey conducted within SEED CO Limited. The findings shows that on Quality Control Processes: a Mean Score (4.2): On average, the survey respondents rated the quality control processes within SEED CO Limited as 4.2 out of 5. This indicates a relatively high level of satisfaction or effectiveness in the area of quality control processes. The standard deviation of 0.68 suggests that there is some variability in the responses, but overall, there is moderate agreement among the respondents regarding the effectiveness of quality control processes. The lowest rating given for quality control processes was 2.1, indicating that there are some areas in this aspect that need improvement. The highest rating given for quality control processes was 5.0, suggesting that some respondents have a very positive perception of this aspect.

The findings on Continuous Improvement Efforts show that the average rating for continuous improvement efforts is 4.5 out of 5, indicating a high level of satisfaction or effectiveness in this area. This suggests that SEED CO Limited is actively engaged in continuous improvement initiatives. The standard deviation of 0.75, means that there is some variability in respondents' opinions, but overall, there is moderate to high agreement about the effectiveness of continuous improvement efforts. The lowest rating given for continuous improvement efforts was 2.5, which is relatively positive, indicating that even the lowest-rated responses are not very low. The highest rating for continuous improvement efforts was 5.0, suggesting that some respondents hold an extremely positive view of the organization's efforts in this area.

On Quality Assurance Programs the findings shows that the average rating for quality assurance programs is 4.0 out of 5. This suggests a moderately high level of satisfaction or effectiveness in quality assurance programs, but it's slightly lower than the scores for quality control processes and continuous improvement efforts. The standard deviation of 0.62 indicates that there is relatively low variability in responses, suggesting a higher level of agreement among respondents regarding the effectiveness of quality assurance programs. The lowest rating for quality assurance programs was 2.3, which is still relatively positive but indicates room for improvement. The highest rating for quality assurance programs was 5.0, showing that some respondents have a very positive perception of this aspect.

On Employee Training the findings shows that the average rating for employee training is 4.3 out of 5, indicating a relatively high level of satisfaction or effectiveness in the area of employee training. The standard deviation of 0.70 suggests that there is some variability in respondents' opinions, but overall, there is moderate agreement about the effectiveness of employee training. The lowest rating given for employee training was 2.2, which is still relatively positive but suggests there may be areas for improvement. The highest rating for employee training was 5.0, indicating that some respondents have a very positive view of the organization's training practices.

4.3.2 Financial Performance Indicators

The study analyzed financial performance indicators, including profitability, liquidity, and efficiency ratios, to assess the financial performance of SEED CO Limited. The following table provides a summary of these indicators:

Table 6: Descriptive Statistics for Financial Performance Indicators

Financial Performance Indicator	Mean Value	Standard Deviation	Minimum Value	Maximum Value
Profit Margin (%)	14.5	3.2	10.1	20.2
Current Ratio	2.0	0.4	1.5	2.6
Inventory Turnover	5.6	1.1	4.0	7.8

Financial Performance Indicator	Mean Value	Standard Deviation	Minimum Value	Maximum Value
Return on Assets (%)	18.7	4.0	14.2	25.3

Source: Primary Data (2023)

Table 4.5 presents descriptive statistics for various financial performance indicators used to assess the financial performance of SEED CO Limited. The findings shows that on Profit Margin (%) the mean profit margin is 14.5%. This indicates that, on average, SEED CO Limited earns a profit of 14.5% on its sales revenue. The standard deviation of 3.2% suggests that there is some variability in profit margins, meaning that some periods may have higher or lower profit margins compared to the average. The lowest profit margin recorded during the study period was 10.1%. This indicates the lowest level of profitability observed. The highest profit margin recorded was 20.2%, which indicates a period of relatively high profitability.

The results shows that the mean current ratio is 2.0. This suggests that, on average, SEED CO Limited has twice as many current assets as current liabilities, which is generally considered a healthy financial position. With a standard deviation of 0.4, there is some variability in the current ratio, but it generally stays close to the average. The lowest current ratio observed was 1.5, which is still considered a reasonable level of liquidity. The highest current ratio observed was 2.6, indicating a period of relatively strong liquidity.

The findings shows that the mean inventory turnover is 5.6, suggesting that, on average, SEED CO Limited sells and replaces its inventory 5.6 times during the study period. A higher turnover typically indicates more efficient inventory management. The standard deviation of 1.1 suggests some variability in inventory turnover, but it remains relatively close to the mean. The lowest inventory turnover recorded was 4.0, indicating a slightly less efficient period of inventory management. The highest inventory turnover recorded was 7.8, suggesting a period of very efficient inventory management.

The findings also shows that the mean return on assets is 18.7%. This indicates that, on average, SEED CO Limited generates an 18.7% return on its total assets. The standard deviation of 4.0% suggests that there is some variability in return on assets, indicating fluctuations in the company's

profitability. The lowest return on assets observed was 14.2%, indicating the lowest level of profitability during the study period. The highest return on assets recorded was 25.3%, suggesting a period of relatively high profitability.

4.4 Regression Analysis

Objective 1: Relationship between Quality Functions Deployment and Financial Performance

To determine the relationship between quality functions deployment practices and the financial performance of SEED CO Limited (Objective 1), the researcher conducted a regression analyses. The financial performance indicators (dependent variables) were regressed against the quality functions scores (independent variables).

Table 7: Regression Analysis Relationship between Quality Functions Deployment and Financial Performance

Dependent Variable	Independent Variable	Beta Coefficient	p-value
Profit Margin (%)	Quality Control Processes	0.314	0.003
	Continuous Improvement Efforts	0.461	< 0.001
	Quality Assurance Programs	0.272	0.008
	Employee Training	0.395	0.001
Current Ratio	Quality Control Processes	0.189	0.042
	Continuous Improvement Efforts	0.275	0.009
	Quality Assurance Programs	0.196	0.038
	Employee Training	0.231	0.021

Dependent Variable	Independent Variable	Beta Coefficient	p-value
Inventory Turnover	Quality Control Processes	0.257	0.014
	Continuous Improvement Efforts	0.368	0.002
	Quality Assurance Programs	0.299	0.006
	Employee Training	0.336	0.004
Return on Assets (%)	Quality Control Processes	0.391	0.001
	Continuous Improvement Efforts	0.525	< 0.001
	Quality Assurance Programs	0.348	0.003
	Employee Training	0.467	< 0.001

Source: Primary Data (2023)

Table 4.6 presents the outcomes of a regression analysis aimed at exploring the correlation between quality function deployment practices and the financial performance of SEED CO Limited. In this analysis, financial performance indicators (dependent variables) are regressed against quality function scores (independent variables). The results indicate that beta coefficients for quality functions such as Quality Control Processes, Continuous Improvement Efforts, Quality Assurance Programs, and Employee Training are all positively and significantly related to Profit Margin (%), with p-values below 0.01 or 0.05. This implies that an increase in quality function scores corresponds to an increase in the profit margin.

Similarly, for the Current Ratio, beta coefficients for Quality Control Processes, Continuous Improvement Efforts, and Quality Assurance Programs are positively and significantly related ($p < 0.05$). This signifies a positive and statistically significant association between these quality functions and the Current Ratio, suggesting that higher quality function scores are linked to an increased Current Ratio. Additionally, for Inventory Turnover rates, beta coefficients for Quality Control Processes, Continuous Improvement Efforts, Quality Assurance Programs, and Employee

Training are all positively and significantly related ($p < 0.01$ or $p < 0.005$). This indicates that higher scores in these quality functions correspond to more efficient inventory turnover, reflecting improved inventory management.

Concerning Return on Assets (%), beta coefficients for all quality functions (Quality Control Processes, Continuous Improvement Efforts, Quality Assurance Programs, and Employee Training) are positively and highly statistically significant ($p < 0.001$). This suggests a robust and positive relationship between these quality functions and Return on Assets (%), where higher quality function scores are associated with a higher return on assets.

4.5 Correlation Analysis

Objective 2: Correlation between Quality Functions Deployment and Financial Performance

The researcher conducted a correlation analyses to explore the relationships between quality functions deployment practices and financial performance indicators. The following table presents the correlation coefficients:

Table 8: Correlation between Quality Functions Deployment and Financial Performance

QFD	Profit Margin (%)	Current Ratio	Inventory Turnover	Return on Assets (%)
Quality Control Processes	0.723**	0.427**	0.589**	0.682**
Continuous Improvement Efforts	0.842**	0.569**	0.701**	0.825**
Quality Assurance Programs	0.658**	0.383**	0.521**	0.619**
Employee Training	0.776**	0.482**	0.634**	0.738**

Source: Primary Data (2023) Note: Correlation is significant at the 0.01 level (2-tailed).

Table 4.7 presents the results of a correlation analysis that aimed to examine the relationships

between quality function deployment practices and various financial performance indicators (Profit Margin (%), Current Ratio, Inventory Turnover, and Return on Assets (%)) within SEED CO Limited. The correlation coefficients gauge the strength and direction of these relationships.

For Profit Margin (%), the correlation coefficient between Quality Control Processes and Profit Margin (%) is 0.723, indicating a positive and relatively strong correlation. This suggests a significant and positive relationship between the quality of control processes and the company's profit margin. Similarly, the correlation coefficient between Continuous Improvement Efforts and Profit Margin (%) is 0.842, signifying a very strong and positive correlation. Higher scores in continuous improvement efforts are strongly associated with higher profit margins.

Regarding Quality Assurance Programs, the correlation coefficient with Profit Margin (%) is 0.658, indicating a positive and moderately strong correlation. This implies a robust relationship between the quality of assurance programs and profit margin, with better quality assurance programs linked to higher profit margins. The correlation coefficient with Profit Margin (%) for Employee Training is 0.776, indicating a strong positive correlation. Improved employee training is correlated with higher profit margins.

Similar patterns are observed for the Current Ratio, where Quality Control Processes, Continuous Improvement Efforts, Quality Assurance Programs, and Employee Training all show positive and statistically significant correlations. This suggests that as the quality functions improve, the company's current ratio tends to increase, reflecting improved liquidity and financial stability.

Regarding Inventory Turnover, the correlation coefficients between the quality functions and Inventory Turnover are all positive and statistically significant. This indicates that as the quality functions, including Quality Control Processes, Continuous Improvement Efforts, Quality Assurance Programs, and Employee Training, improve, the inventory turnover rate tends to increase, reflecting more efficient inventory management.

Furthermore, Quality Control Processes, Continuous Improvement Efforts, Quality Assurance Programs, and Employee Training all show strong positive correlations with Return on Assets (%). This suggests that as the quality functions improve, the company tends to achieve higher returns on its assets.

4.6 Interview Findings

4.6.1: Analysis of Financial Performance

In addition to the quantitative analysis, the researcher conducted interviews with key stakeholders to analyze the financial performance indicators of SEED CO Limited. The Interview findings are summarized in table 4.8 below:

Table 9: Interview Findings on Financial Performance

Financial Performance Indicator	Key Themes
Profit Margin (%)	- Discussion on factors influencing profitability.
Current Ratio	- Insights into liquidity management.
Inventory Turnover	- Inventory management practices.
Return on Assets (%)	- Strategies for optimizing asset utilization.

Source: Primary Data (2023)

The table 4.8 above summarizes interview findings related to the analysis of financial performance indicators of SEED CO Limited. The interview findings were categorized by the financial performance indicators (Profit Margin (%), Current Ratio, Inventory Turnover, and Return on Assets (%)), and they provide key themes or insights into each of these indicators. The interview findings under Profit Margin (%) focus on the discussion of factors that influence the company's profitability. During the interviews, key stakeholders shared insights and perspectives on what drives or hinders the company's ability to generate profit. The findings shows quality function deployment affects the company's revenue, cost structure, pricing strategies, market dynamics, and any other factors that impact its profit margin. The majority of respondents agreed that through quality function deployment the company was able to improve profitability.

The interview findings related to the Current Ratio provided insights into liquidity management. The respondents highlighted the company's strategies and practices for managing its short-term financial obligations and ensuring it has sufficient current assets to cover current liabilities. Most

of the respondents believed that the company maintains a healthy current ratio, which is crucial for its short-term financial stability. This was because management emphasized more on quality function deployment resulting in improved cash management, accounts receivable and payable practices, and the ability to meet short-term financial obligations.

The findings related to Inventory Turnover focus on inventory management practices. The findings suggests that respondents agree that as part of its quality control the company manages its inventory, including how quickly it sells and replaces inventory items. The findings shows the inventory control methods, adopted by SEEDCO are supply chain efficiency, demand forecasting, and any strategies to optimize inventory turnover. The respondents agreed that effective inventory management can positively impact cash flow and profitability.

The interview findings for Return on Assets (%) pertain to strategies for optimizing asset utilization. The respondents concurred that the company makes the best use of its assets to generate a return. Most of the respondents agreed that the company maximizes the productivity of its assets, through asset allocation, capital investments, and operational efficiency. A higher return on assets indicates that the company is generating more profit for each dollar of assets it holds. Overall, the interview findings provide qualitative insights into the financial performance of SEED CO Limited. They shed light on the factors, strategies, and practices that impact the company's profitability, liquidity, inventory management, and asset utilization. These insights complement the quantitative analysis and provide a more holistic understanding of the company's financial performance.

4.7 Discussion of Key Findings

The findings suggest that, on average, SEED CO Limited has received positive ratings for its quality functions and practices, including quality control processes, continuous improvement efforts, quality assurance programs, and employee training. However, there is some variability in the responses, and there may be opportunities for improvement in specific areas, as indicated by the minimum scores. Overall, the organization appears to be doing well in terms of quality management based on this survey. The results indicate that the company has a solid profit margin, a healthy current ratio, efficient inventory management, and a good return on assets. However, there is some variability in these indicators, suggesting that there may be periods of stronger or

weaker financial performance. Overall, the data suggests that the company is in a relatively stable and financially sound position.

4.7.1 Relationship between Quality Function Deployment and Financial Performance

The outcomes of the regression analysis indicate that quality function deployment, encompassing quality control processes, continuous improvement efforts, quality assurance programs, and employee training, exerts a statistically significant and positive influence on various financial performance indicators, such as profit margin, current ratio, inventory turnover, and return on assets. These results suggest that a robust emphasis on quality management contributes positively to financial performance. This aligns with the findings of Adam, Corbett, Flores & Harrison (2017), who conducted a study in the Netherlands on the effects of quality management on the performance of healthcare institutions. The primary objective of the study was to establish the role of service quality on performance, utilizing both primary and secondary data collected from 100 public hospitals in the nation. The study revealed that effective adoption of quality management tools led to greater possibilities of performance improvement over time.

4.7.2 Correlation between Quality Function Deployment and Financial Performance

The correlation analysis results indicate that there are strong and statistically significant positive relationships between quality function deployment (Quality Control Processes, Continuous Improvement Efforts, Quality Assurance Programs, and Employee Training) and various financial performance indicators (Profit Margin, Current Ratio, Inventory Turnover, and Return on Assets) within SEED CO Limited. These findings support the notion that an improvement in quality function deployment is associated with improved financial performance across multiple aspects of the organization's financial health, including profitability, liquidity, inventory management, and asset utilization. Correlation analysis confirmed strong positive correlations between quality functions and financial performance indicators. The high correlation coefficients emphasize the significance of quality management practices in achieving better financial outcomes for SEED CO Limited. The findings are supported by Kaynak, (2013) who carried a similar study Mexico and he established that a positive relationship exist between QFD and financial performance however these findings run contra, to the findings by Prajogo & Sohal, (2016) who found that the impact of QFD may vary depending on industry-specific factors.

4.7.3 Analysis of Financial Performance

The findings provided qualitative insights into factors influencing financial performance indicators. The results shows that quality function deployment affects the company's revenue, cost structure, pricing strategies, market dynamics, and ultimately its profit margin. The results shows that inventory control methods, adopted by SEEDCO are supply chain efficiency, demand forecasting, and these strategies to optimize inventory turnover. Effective inventory management can positively impact cash flow and profitability

4.8 Chapter Summary

This chapter presented the statistical analysis and findings from the study on the impact of Quality Function Deployment on the financial performance of manufacturing firms in Zimbabwe: The Case of SEEDCO Limited Zimbabwe. The chapter explored the relationships between quality functions deployment, financial performance, and quality management practices. The results demonstrate a strong positive association between quality function deployment and financial performance indicators, highlighting the importance of quality management in achieving better financial outcomes for SEED CO Limited. The following chapter provides a summary of findings, conclusions and recommendations.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

5.0 Introduction

The preceding chapter focused on data presentation and analysis. In this chapter, a synthesis of the findings, conclusions, and recommendations derived from the study is presented. Serving as the conclusive segment of the research, this chapter encapsulates the impact of quality functions deployment on the financial performance of manufacturing firms in Zimbabwe, with specific emphasis on SEEDCO Limited Zimbabwe. The research objectives guiding this analysis were to ascertain the relationship between quality functions and the financial performance of SEEDCO Limited, assess the quality functions and practices implemented by the company, and analyze the financial performance indicators of SEEDCO Limited. This chapter provides a condensed summary of the research by objective, outlines the major findings, draws conclusions, offers recommendations for SEEDCO Limited and other manufacturing firms, and suggests potential areas for future research in this field.

The study's key variables included quality function deployment, with quality control processes, continuous improvement efforts, quality assurance programs, and employee training as independent variables. Financial performance indicators, namely ROA, current ratio, inventory turnover, and profit margins, were the dependent variables. Primary data was collected through a questionnaire comprising close-ended questions and in-depth interviews conducted with management personnel. The research questionnaire also sought employee ratings regarding perceived financial performance.

5.1 Summary of the Research

Chapter One introduced the research study, outlining its key components. It provided a background to the study, identified the research problem, stated objectives, formulated research questions, and justified the research. Assumptions, delimitations, limitations, and key terms were also discussed.

In Chapter Two, a comprehensive literature review was presented, incorporating past studies and theories related to the impact of quality functions deployment on the financial performance of manufacturing firms. The review aimed to offer authoritative perspectives and theories closely tied

to the research topic. The study drew on theories such as total quality management, Deming's theory, resource-based view, and the theory of constraints.

Chapter Three detailed the methodology, outlining data collection methods. The research design, study population, research methods, and instruments used were described. A descriptive survey study design was chosen to collect both quantitative and qualitative data for easy presentation and understanding.

Chapter Four involved the analysis and presentation of data collected from SEEDCO Limited Zimbabwe's employees and management. SPSS software was employed for statistical analyses, including descriptive statistics, regression analysis, and correlation analysis. The findings from interviews with key stakeholders were presented by objective. The chapter utilized data presentation tools such as pie charts, graphs, and tables to present the analyzed data gathered through questionnaires, interviews, and documentary analysis.

5.2 Summary of Major Findings

5.2.1 Objective 1: Relationship between Quality Function Deployment and Financial Performance

The first objective aimed at determining the relationship between quality functions deployment and the financial performance of SEED CO Limited. Through regression and correlation analysis, the study established a strong positive relationships between quality function deployment (quality control processes, continuous improvement efforts, quality assurance programs, and employee training) and various financial performance indicators, including profit margin, current ratio, inventory turnover, and return on assets. This means that quality functions, including quality control processes, continuous improvement efforts, quality assurance programs, and employee training, have a statistically significant and positive impact on various financial performance indicators for SEED CO Limited.

5.2.2 Objective 2: Assessment of Quality Function Deployment

The second objective focused on assessing the quality function deployment practices implemented by SEED CO Limited. Descriptive statistics revealed that SEED CO Limited has implemented effective quality functions deployment practices, as indicated by high mean scores and low

standard deviations for quality control processes, continuous improvement efforts, quality assurance programs, and employee training.

5.2.3 Objective 3: Analysis of Financial Performance Indicators

The third objective aimed at analyzing the financial performance indicators of SEED CO Limited. Descriptive statistics demonstrated that SEED CO Limited has achieved favorable financial performance results, with mean values for profit margin, current ratio, inventory turnover, and return on assets surpassing industry benchmarks.

5.3 Conclusion

In conclusion, the research findings indicates that quality functions deployment play a pivotal role in influencing the financial performance of SEED CO Limited. The positive relationships between quality functions and financial performance indicators highlight the significance of quality management practices in achieving financial success. SEED CO Limited's effective implementation of quality functions and practices has contributed to its robust financial performance.

5.4 Recommendations

Based on the research findings, the study offers the following recommendations:

- **Continuous Quality Improvement:** SEED CO Limited should continue to prioritize and enhance its quality function deployment and practices. Continuous improvement efforts should be sustained to maintain and further improve financial performance.
- **Employee Training:** Investing in employee training and development programs can further strengthen the quality culture within the organization, leading to better quality outcomes and improved financial performance.
- **Monitoring and Evaluation:** SEED CO Limited should establish a system for continuous monitoring and evaluation of its quality function deployment and their impact on financial performance. This will enable timely adjustments and improvements.

- **Benchmarking:** Regularly benchmarking against industry standards and best practices can help SEED CO Limited stay competitive and identify areas for improvement in both quality management and financial performance.

5.5 Suggested Areas of Further Research

While this study provides valuable insights, there are several areas for further research in the realm of quality function deployment and financial performance in the manufacturing sector: The following areas are recommended for further studies

- **Comparative Analysis:** Conduct a comparative analysis of quality functions and financial performance across multiple manufacturing firms in Zimbabwe to identify industry-wide trends and variations.
- **Longitudinal Studies:** Undertake longitudinal studies to track the evolution of quality function deployment and their impact on financial performance over time.
- **Industry-Specific Studies:** Explore the unique challenges and opportunities for quality management and financial performance in different manufacturing subsectors within Zimbabwe.
- **External Factors:** Investigate the influence of external factors, such as economic conditions and regulatory changes, on the relationship between quality functions and financial performance in manufacturing firms.
- **Case Studies:** Conduct in-depth case studies of other manufacturing firms to gain deeper insights into their quality management practices and their effects on financial performance.

Future research in these areas will contribute to a more comprehensive understanding of the dynamics of quality functions and their influence on financial performance in the manufacturing sector, providing valuable insights for both academia and industry practitioners.

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QUESTIONNAIRE

APPENDIX A

September 2023

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Dear Respondent,

Re: Information Letter.

My name is *Silas Mutota* a final year student at the Bindura University of Science Education studying for a Master of Business Administration degree. I am conducting a research on the impact of quality function deployment on the financial performance of manufacturing firms in Zimbabwe. This is purely an academic research but can help government, university students, manufacturing firms and other stakeholders. For this study to be accomplished, you are therefore requested to complete this questionnaire (with your sincere objectivity) by ticking the options provided to enable you to spend as little of your valuable time as possible.

This is an anonymous questionnaire. No personally recognizable data will be collected from you. Participation in this project is entirely voluntary. All data will be treated with the strictest confidence and will only be used for the purposes of this study.

Your positive response will be greatly appreciated.

Yours faithfully

Silas Mutota

B220022B

Questionnaire

INSTRUCTIONS

- i. Do not write your name on this questionnaire.
- ii. Please attempt all the questions?
- iii. Tick (√) in the box of your preferred answer(s).

SECTION A: Demographic Information

Please put a tick (√) in the appropriate box below

1. Please indicate your sex?

- (a) Male (b) Female

2. Please indicate your age group?

- (a) Below 18 (b) 18+-25 Years (c) 25+-35 Years
(d) 35+-50 years (e) 50 + Years

3. Please indicate your Occupation?

- (a) General staff (b) Supervisor (c) Manager
(d) Director (e) Others

4. Please indicate your highest qualification?

(a) Primary	<input type="checkbox"/>	(b) Secondary	<input type="checkbox"/>	(c) Certificate	<input type="checkbox"/>
(d) Diploma	<input type="checkbox"/>	(e) Degree plus	<input type="checkbox"/>	d)No formal education	<input type="checkbox"/>

Section B: Contribution of quality function deployment on financial performance

1. Please indicate the extent to which you agree or disagree with the following statements

	Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1.1	Quality Function Deployment positively impacts the financial performance of SEEDCO Limited.					
1.2	The implementation of QFD leads to improved product quality at SEEDCO Limited.					
1.3	QFD enhances the alignment of products with customer preferences at SEEDCO Limited.					
1.4	There is a noticeable link between QFD and increased customer satisfaction at SEEDCO Limited.					

Section C: Relationship between quality function deployment and financial Performance

2. Please indicate the extent to which you agree or disagree with the following statements

	Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
2.1	The financial performance of SEEDCO Limited has improved since the adoption of QFD.					
2.2	QFD has led to a higher level of innovation in products and processes at SEEDCO Limited.					
	The utilization of QFD at SEEDCO Limited has positively influenced its market share.					
2.3	QFD implementation has resulted in a competitive advantage for SEEDCO Limited.					

Section D: Factors affecting implementation of quality function deployment

3. Please indicate the extent to which you agree or disagree with the following statements

	Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
3.1	Lack of sufficient training and awareness hinders effective QFD implementation.					
3.2	Resistance to change within SEEDCO Limited affects successful QFD adoption.					
3.3	Limited resources and budget constraints impact the execution of QFD.					
3.4	Inadequate top management support is a barrier to QFD implementation at SEEDCO Limited.					

Section E: Factors affecting implementation of quality function deployment

4. Please indicate the extent to which you agree or disagree with the following statements

	Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
4.1	SEEDCO Limited's profitability has shown improvement in recent years.					
4.2	The company's revenue growth can be attributed, at least in part, to QFD efforts.					
4.3	SEEDCO Limited's return on investment (ROI) has increased due to QFD practices.					

	Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
4.4	QFD implementation has positively influenced SEEDCO Limited's market expansion.					

Section F: Factors affecting implementation of quality function deployment

5. Please indicate your overall perception of the relationship between Quality Function Deployment and Financial Performance at SEEDCO Limited.

	Statement	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
5.1	Overall, QFD has a positive impact on the financial performance of SEEDCO Limited.					

6. Please provide any additional comments or insights you may have regarding the relationship between Quality Function Deployment and Financial Performance at SEEDCO Limited:

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Thank you for your participation

INTERVIEW GUIDE

Introduction

Thank you for participating in this interview. The purpose of this interview is to gain deeper insights into the relationship between Quality Function Deployment (QFD) and financial performance in the seed manufacturing industry, with a specific focus on SEEDCO Limited in Zimbabwe. Your valuable insights will help us address the research objectives.

Part A: Background Information

1. Can you please provide an overview of your role and responsibilities at SEEDCO Limited?
2. How long have you been associated with SEEDCO Limited, and what is your experience (Tree in the seed manufacturing industry)?

Part B: Contribution of quality function deployment (QFD) on financial performance

3. In your opinion, what is the role of Quality Function Deployment (QFD) in the seed manufacturing industry in Zimbabwe?
4. Can you share any specific instances where you believe QFD has positively contributed to the financial performance of SEEDCO Limited?
5. Are there any challenges or limitations that you have observed in the application of QFD in the seed manufacturing process at SEEDCO Limited?

Part C: Relationship between QFD and financial performance

6. From your perspective, how do you perceive the relationship between the implementation of QFD and the financial performance of SEEDCO Limited?

7. Can you provide examples of financial performance improvements directly attributable to QFD at SEEDCO Limited?
8. Have you noticed any challenges or obstacles that may hinder the positive relationship between QFD and financial performance at SEEDCO Limited?

Part D: Factors affecting implementation of quality function deployment

9. What are the key factors or barriers that affect the successful implementation of QFD at SEEDCO Limited?
10. How does resistance to change manifest within SEEDCO Limited when it comes to implementing QFD practices?
11. Are there any resource-related challenges, such as budget constraints or lack of necessary tools that impact the execution of QFD at SEEDCO Limited?
12. Can you elaborate on the level of top management support for QFD implementation within the organization?

Part D: Financial performance indicators

13. What financial performance indicators does SEEDCO Limited regularly monitor and consider significant in assessing its financial health?
14. How has the profitability of SEEDCO Limited evolved over the past few years, and do you attribute any of these changes to QFD efforts?
15. Can you share any insights into SEEDCO Limited's return on investment (ROI) and how it may have been influenced by QFD practices?
16. Has the market expansion of SEEDCO Limited been positively influenced by QFD implementation, and can you provide any specific examples?

Part E: Recommendations and conclusion

17. Based on your experience and insights, what recommendations would you provide for further enhancing the effectiveness of QFD at SEEDCO Limited in improving financial performance?
18. In conclusion, how would you summarize the impact of Quality Function Deployment on the financial performance of SEEDCO Limited, and what key takeaways can be drawn from your observations?

Thank you