

UNIVERSITY OF KWAZULU -NATAL

**Evaluating the implementation of Quality management system ISO 9000 in the
manufacturing industry- Case study Royal Swaziland Sugar Corporation**

By

Dumsile Ophelia Mabila

Student Number: 203504592

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Supervisor: Dr Emmanuel Mutambara

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Name: Dumsile Ophelia Mabila	No: 203504592	
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ABSTRACT

Several academic studies have been done on quality managements systems including ISO 9000 to evaluate the systems effectiveness to improve organizational performances, which can lead to overall organizational profitability. Royal Swaziland Sugar Corporation (RSSC) is ISO 9000 certified and has implemented the system for the past 12 years, due to customers' requirements. The aim of this study was to evaluate if RSSC attained the ISO systems perceived benefits; which includes customers' satisfaction and enhanced performance which leads to increase in organizational profitability. For this study a quantitative approach was used and the primary data was gathered through a survey method. Secondary data was obtained from archived Cane and Mill data (A Business intelligent systems) to relate the organization performance prior and after ISO certification. Simple random sampling technique was used with a sample size of 278 participants out of a population of 1000 people. The research instrument was online closed structured questionnaires and the respond rate was 69.78 %. The major findings showed that RSSC has implemented all the ISO standards principles as per the regulation, including the key generic critical factors. However, RSSC has not achieved organizational performance improvements because the management has not established quality culture which was in context of RSSC working environment. The performance indicators were below the set targets and these shows a great deviation from the systems principles. Although the documentation for monitoring the process were in place, this proofs the high level of bureaucracy that employees were not motivated and they simple follow the standard operations without becoming innovative. The results also show a high staff turnover because majority of the employees, 33% have been in the organization less than 5 years meaning internal customers were not satisfied. Furthermore, there was no significant increments on the level of external customer satisfaction from the longitudinal survey. The study recommended that RSSC management ought to enhance understanding of the quality ISO system as well as improving the internal aspects through continuous dialogue with the employees. Thereafter a new relevant quality culture can be developed and the organization can achieve the perceived enhancement in the overall performance which would led to increase in market shares, resulting in increasing profitability.

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LIST OF ACRONYMS

EXT	Extraction
ICUMSA	International Commission for Uniform Methods of Sugar Analysis
RSSC	Royal Swaziland Sugar Corporation
SSA	Swaziland Sugar Association
QMS	Quality management systems
SPSS	Statistical Package for the Social Sciences
TQM	Total quality management systems
ISO 9000/9001	Quality Systems - Model for Quality Assurance In Design, Development, Production, Installation and Servicing

CHAPTER ONE

INTRODUCTION

1.1 Introduction

ISO 9000 quality management certification has spread to more than 170 countries worldwide in 2006 (Sampaio, Saraiva, Guimarães and Rodrigues, 2011) and with more than a million certification. Companies implement quality management systems (QMS) to differentiate themselves internally and externally as evidence of efforts towards establishment of quality management. The main cause of diffusion of the ISO 9000 implementation in the majority of companies was from customer demands, since European countries required their suppliers to be ISO certified and to stay relevant in the European market. Royal Swaziland Sugar Corporation (RSSC) sells most of its products (sugar and Ethanol) to the European market.

Therefore, this study evaluates the effectiveness of ISO 9000 quality management system that was implemented in the manufacturing industry in Swaziland. Royal Swaziland Sugar Corporation Company was the case study. This study contends that by implementation of the ISO 9000 quality systems, the organizational performance in terms of profitability could increase.

Chapter one of the study presents the background to the study, the problem statement, motivation for the study objectives, questions, significance of the study and the overall chapter layout.

1.2 Background

The marketing wing of RSSC, Swaziland Sugar Association (SSA) which sells sugar locally and internationally implemented ISO 9000 to comply with the customers' requirements. To enhance quality, the factories, Simunye in 2002 and Mhlume in 2003 adopted the ISO 9000 certification. In 2011 a joint ISO 9000 certification was acquired by both factories. Although ISO 9000 quality management system was implemented 14 years, Royal Swaziland Sugar Corporation has not achieved both internal and external benefits which in the view of management was a huge challenge and drawback. The internal benefits include process efficiencies and reduction in down time which both factories have not achieved. There was also high staff turnover which was a contribution factor to employee dissatisfaction. Employee job satisfaction can

be achieved by employee empowerment and involvement (Robbins, Judge, Odendaal and Roodt, 2009;71). The organization has critical skills shortages.

The external benefits include customer satisfaction, but the organization lost market share both local and globally for Sugar and Ethanol. The customers were price driven and this proves that the level of customer satisfaction was low. These customers were not loyal to the organization, although customer complain has declined in the past years. The effectiveness of the ISO 9000 certification has raised various opinions on different countries, both in the developing and developed countries. Several researches have showed that in developing countries there were several challenges and barriers that militant against the quality system implementation. The study was conducted in developed countries and mainly focused on the key successful implementation factors (Gorkem, Copuroglu, Fening and Osei, 2012).

Globalization has led to unstable business environment all over the world, due to rapidly changing caused by customer demands increasing and competitiveness pressure among buyers and suppliers (Wecken-mann, Akkasogluand and Werner, 2015). Hence this led organizations to change their management quality systems in the firms. In response to business dynamics, organization started to implement systems to enhance customer satisfaction which leads to customer loyalty by delivering high services and goods at a competitive price. The quality system would ensure improvements in operational performance to reduce costs through less rework and customers complains which can lead to increasing factory efficiencies thereafter also increasing the organizational profits.

The purpose of this study was to seek a focused structure, apply and use an analysis approach to examine these issues. Therefore, the enquiry was raised; “How quality management ISO 9000 system was contributing to RSSC organizational profitability?”

1.3 Problem Statement

RSSC has local and international markets that sells most of its products globally. Swaziland is a developing country and RSSC competes for market share in the international markets, with USA distilleries (second distillery in Swaziland) and other developing countries like South Africa, India, and Brazil. Currently Brazil is the global leader in sugar and ethanol, therefore produces 75% of cane sugar in the world, and holds 57% of the international market share. Brazil’s competitive advantage lies in its

new technology that's enhances quality management systems implemented. This facility them to sell quality products at competitive prices (https://www.iisd.org/pdf/2014/ssi_2014_chapter_13.pdf).

Presently RSSC has a challenge of the market share in both Ethanol and sugar market due to competitive pressure. The organization had implemented the world known quality management system, ISO 9000 certification, expecting to enhance and also creating a trusted quality orientation performance between them and their customers. Moturi and Mbithi (2015), argued that the ISO management quality system enhances both internal and external customers in the business environment. For example studies conducted at the University of Kenya, showed that satisfaction index increased in the work environment including students and staff by about 30% ; in 2010 at 66.00% to 95.98% in 2014. Additional findings showed customer (students) satisfaction increasing by 14.19%; in 2010 at 76.98% to 2014 at 91, 17% and internal customers (employee) satisfaction index by 15.53%; in 2010 at 63.60% to 79.13% in 2014 (Moturi and Mbithi (2015)).

Additionally, Ochieng et al. (2015), emphasized the requirements of organizations to implement a quality certification to demonstrate and proof their quality management efforts to customers. This would also provide them a competing tool and strategy because the ISO 9000 standard principle embraces the total quality management (TQM) systems, which merges organizational concerns with customer satisfaction, process efficiency, employee well-being and shareholder satisfaction (Lakhal, 2014).

Ming ong, Kathaamla and Sawalha (2015) cited in (Pan, Lin, and Tai ,2009), concurred with the authors that ISO 9000 certification has become a commercial obligation and organizations do not have choices but to comply. Due to the fact that the standard specifies minimum requirements to establish and maintain QMS documentation which instil confidence in customers that the firm was quality conscious. Globalization has allowed customers to have a variety and ISO 9000 certification was a prerequisite during supplier selection process and hence perceived as a passport to enter into trade with some countries, especially European countries.

Furthermore, Psomas and Kafetzopoulos (2014) emphasized the need for Managers to further evaluate the benefits of ISO certification implementation in a broader perspective, to identify other activities which would improve the financial gains of their

companies. Hence the identified gap in this study makes the researcher to assess the ISO 9000 effectiveness in RSSC because there has not visible increase on the organization return of investment after the certification. This would further address the perceptions about the quality standards in terms of increasing profitability due to improved organizational performance resulting in increasing market share and performance.

1.4 Motivation for the study

Several authors; naming few Magd and Nabulsi (2012),Mark (2015),Naveh et al. (2007) and, Pina and Sellés (2008) assessed the impact of the ISO 9000 quality management system in various countries, including developing countries (Kenya and Mexico) and developed countries (including Switzerland and Italy). Studies of this nature were never done in Swaziland, therefore there was a need to conduct one. The gap identified by the author provides a new insight on the system implemented by RSSC based on the findings, after information gathering and analysing it. The findings were presented in a narrative analysis and recommendations were detailed to ensure RSSC benefits from this strategic tool which can increases the customer satisfaction both internal and external; which can lead to increase performance thereafter also contributing to customer retention and loyalty. This would result in increasing market share and sales revenue leading to high organizational profitability. The purpose of the research was to assess the ISO 9000 quality management certification influence in terms of enhancing performance parameters leading to organizational enhancements which can contribute to RSSC profits

1.5 Research Objectives

This study was guided by the following objectives;

- a) To establish the benefits of quality management ISO 9000 at Royal Swaziland Sugar Corporation
- b) To identify the factors that affect successful implementation of Quality management ISO 9000 at Royal Swaziland Sugar Corporation
- c) To establish the extent to which implementation of quality management ISO 9000 at Royal Swaziland Sugar Corporation would improve customer satisfaction

- d) To recommend to senior management appropriate implementation practises for quality management ISO 9000 at Royal Swaziland Sugar Corporation

1.6 Research questions

The following research questions were raised to achieve the objectives;

- a) What is the benefit of quality management ISO 9000?
- b) What are the factors that affect successful implementation of ISO 90000 quality system?
- c) What is the extent to which implementation of ISO 9000 certification at Royal Swaziland Sugar Corporation would improve customer satisfaction?
- d) What recommendation would be made to improve the quality ISO 9000 at Royal Swaziland Sugar Corporation?

1.7 Significance of the study

Recommendations from this study will help improve the implementation of ISO 9000 at RSSC if implemented by management. This would also enhance the organizational performance ultimately increasing organisational profitability. If RSSC improve its performance, the economy of Swaziland will definitely gain in several ways such as employment creation and overall increase in the gross domestic product all because of successful implementation of ISO 9000. The study also contributes to existing knowledge on ISO 9000 implementation and its effect on organisational performance.

1.8 Delineation of the study

The study was based on two factories of RSSC namely Simunye and Mhlume despite having markets throughout the globe. The two factories were selected because they adopted the ISO 9000 which saw the two firms effectively acquiring the ISO 900 certification. The study does not cover branches and depots throughout and outside Swaziland.

1.9 Chapter layout

The study has been layout as

✓ **Chapter one: Introduction**

Chapter one presents the overview of the research study and includes the research background, the problem statement, objectives, research questions, motivation and significant of this study. Thereafter a brief overview summary of the chapter.

✓ **Chapter two: Literature Review**

Chapter two discusses the literature review relevant to the study and was obtained from the public domain available from secondary sources and this includes journals and books. The ISO 9000 standard definition systems and its framework was research thoroughly. The emphasis was placed on the advantages and disadvantages of the system after analysing the ISO 9000 system approach, key critical factors that affect the successful implement of the system and extend that affects customer's satisfaction.

✓ **Chapter three: Research Design and Methodology**

This chapter presents the research methodology of this study, due to the nature of the study a quantitative research approach was used. This chapter details on data collection strategy and instruments used.

✓ **Chapter four: Presentation of Results**

Chapter four presents the data gathered in the study and the statistical software packaged, Statistical Product and Service Solutions (SPSS) and Ms Excel was used to analyse the data. The data was presented in forms of tables, graphs and inferential statistics.

✓ **Chapter five: Discussions of Results**

Chapter five is the discussion of the results. The data was interpreted and discussed.

✓ **Chapter Six: Conclusion and recommendations**

The final chapter of the study, presented the conclusions and recommendations. It also recommends further possible research directions based on this study.

1.10 Conclusion

Chapter one, briefly outlines the overview of the research challenges on the quality management system ISO 9000 implemented at Royal Swaziland Sugar Corporation. This chapter links the customer satisfaction with quality management system implementation, which influences the market share. This chapter outlines the direction that this study has followed and the problem statement was formulated followed by the research objectives. The following chapter presents literature related to the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The previous chapter introduced the study by giving the background to the study, problem statement, research questions, aims, significance and the overall study format. This chapter reviews literature aligned to objectives of the study as stated in chapter one. Specifically, the chapter provides the context of the research topic, using the existing literature review on the ISO 9000 certification which was implemented at RSSC. Various aspect of the quality management ISO 9000 frame work system approach was discussed and analysed in detail. The concepts underpinning the study were defined first.

2.2 Definition of Quality Management

Al-Rawahi and Bashir (2011) cited in Davis and Groesch (2005), defined quality management system, as a system that comprises all organization's plans, policies, procedures, resources, process, demarcation of responsibility and as well as authority. The purpose was to achieve high level quality product and service that were consistently satisfying customers and also achieving the objectives of the organization. ISO 9000 quality management system also defines how an organization should work to manage quality.

Intakhan (2014), cited in (Larson and Kerr, 2007) additionally defined ISO 9000 quality system model as a basic principle that involves five stages which are; process mapping, documentation, performance, audit, and corrective action. Also defined quality system as sets of management day to day activities that improves the organization efficiency through critical factors which include quality improvement and cost reduction.

Quality can be defined differently by several authors according to Ivanović and Majstorović (2006) cited in (Majstorovic ´ 2000): who investigated different literatures definitions. The definitions for quality were; quality as consumer's satisfaction or suitability for usage by author Juran, compatibility with requirements by author Crosby and Faigenbaum described quality as the best requirements for consumers including both usage and complimentary product's price. For the purpose of this study, quality

would be viewed as the degree towards achieving a set of essential characteristics to fulfil requirements.

2.3 History of ISO 9000 quality system

Original ISO certification was developed by the International Organization for Standardization in 1987 and had two guidelines (ISO 9000 and ISO 9004) and three standards ISO 9001, 9002, 9003). The ISO standard system was integrated to a new series edition, that changed the focus from correction to prevention and that guarantee both quality products and services were consistently delivered. The European Committee for Standardization adopted the system in 1989 and used in the European community as the quality management system, (Al-Rawahi and Bashir (2011) cited in Abraham et al. (2000) and Wayhan et al.,(2002)).

Furthermore, according to Sampaio et al. (2009), the ISO 90001 certification was mainly adopted by European companies who forced their global suppliers to also implement in order to remain relevant in the market place. This was due to the perceived threat of the certification that it would become a trading barrier in the international markets, therefore all the suppliers were forced to use the certification as a protection instrument. This led to suppliers within their countries to spread ISO certification due to competition reasons, customer demands and also due to global supply chains. Also companies supplying services and goods to other regions, imported their management practices from their original countries to other countries.

Valmohammadi and Kalantari (2015), furthermore stated that in 1987 the ISO 9001 system was formed to improve the delivery of quality goods, work process and workmanship factory's challenges. The standard promotes quality management systems' practices that facilitates the international trading of goods and services, also adopts cooperation among technological, intellectual and economic activities.

Chatzoglou et al. (2015), cited in Singels et al. (2001), Zhu and Scheuermann (1999), similarly said that ISO 9000 series can be referred as a minimum standard that requires a company to meet and to be certified; this would ensure consistency of process approach and which would results in consistency of the products and services. Companies have to manage and achieve consistently outstanding possible results for the certification to be quality and accepted without any doubts. The standard

is not technical in nature, meaning that it is not specific for any particular firm or product and can be implemented in any company.

Nabavi et al. (2014), equally argues that the quality system was important for organizational excellence and has become a norm for firms in the current changing world, to ensure consistent and desired quality products and services. The adoption was applicable to every firm and does not depend on the size or what goods or services they offer. The author also stressed on the improvements like internal relations, defect reduction, errors and waste reduction, opportunity to become world class and influence new markets, hence leading to customer satisfaction and also increasing the market share.

The ISO standards can be designed as a control quality system to suit the requirements and particular conditions of each company. According to Ivanović and Majstorović (2006) cited in Geraedts,(2001) and Irani, et al., (2004), further described ISO system as a quality tool that was suitable for pursuing continuous improvement activities which include innovation principle. Therefore, the system was perceived as a successful exploitation of new ideas that results in continuous improvements, for example there were many quality tools that support the philosophy and practice of this system like Process Failure Mode and effects.

Naveh et al. (2007), cited in Corbett and Kirsch (1998), Anderson, et al. (1999), Cole (1999), likewise agreed that the ISO certification enables a feedback loop system that management first identify the customers' demands, sets strategic goals and objectives to meet them timely. Thereafter guarantees ability by satisfy them consistently through obtaining the appropriate skills and training needs. By using policies and procedure in the business process that provide accurate and reliable information for the supply chain, including both suppliers and customers. This results in flexibility and faster product delivery. The continuous improvement system was maintained through documentation procedures system from internal and external audits to assure compliance, and also corrective action.

2.4 History RSSC Sugar Industry

In Swaziland there are three sugar factories namely Big Bend which is under ILLOVO and RSSC which consists of both Simunye and Mhlume Sugar Mills. Royal Swaziland Sugar Corporation is the biggest sugar company in Swaziland with over 3 500

permanent employees. The company produces two thirds of the country's sugar. RSSC has two sugar mills, distillery and the agriculture section.

The agriculture section manages above 15,607 hectares of cane fields which is irrigated sugar cane and also provides services to third parties by managing an additional 5 018 hectares on their behalf. Agriculture produces above 2.3 million tonnes of cane per season to supply the Simunye and Mhlume sugar mills. The Simunye mill produces above 120 000 tonnes of VHP sugar, the distillery above 32 million litres of alcohol per season and Mhlume mill produces refined sugar (white sugar) about 170 000 tonnes per season (<http://www.rssc.co.sz/>).

2.5 ISO 9000 quality management system approach methodology

The International Standard organizational manual stated that for effectiveness implementation of ISO systems in an organization, the standard follows a system process approach which comprises the PDCA in every process, which means:

- Plan – the organization mission and vision to adhere to the customers' requirements by establishing organizational objectives and also documenting every process involved,
- Do- means the implementation of the documentation process
- Check – is the daily monitoring and checking the quality process implemented systems.
- Act – involves improvements of the processes performance.

(Adopted from International Standard, reference number ISO 9001: 2008)

Although ISO certification over the decades has been viewed as a vital quality program to address and improve quality products and services. Thus many firms have struggled to adopt the system and transforming it into an effective tool, and also achieving improved organizational performance (Kim, Kumar et al. 2011). This was attributed to;

- Organizations not understanding the internal and external motivation drives of the system. These organizations do not understand their motives for implementation and do not have a clear objectives and establishment plans for the system.
- The organization has not identified its critical success factors within their organizational context and do not concentrate on these. The ISO requirements

need to be aligned to the organizational goals and vision and also strategies. These leads to incompatibility and employee resistance

2.5.1 The framework of ISO 9001 Quality Management system



Figure 2.1: Illustrates the systems model of ISO 9001 quality system
(sourced from; <https://www.bing.com/images>)

The ISO 9000 standard framework provides guidelines and also address the relationship between different features that impact on the system efficiency and effectiveness. The implementation of this different features would determine the short and long achievements. These are;

2.5.1.1 Quality management system

The organization responsibility includes the implementation and controlling of documentation, to ensure customer focus by using relevant information and analysis to improve operations. The documentation includes quality manual which have the process description, standard operation procedures with trouble shooting guides and process operating parameters.

Tzelepis et al. (2006), concurred that simultaneously business environmental driving forces which were being applied by third forces, have resulted in many complexes of pull and push process. This led organizations to embrace quality assurance scheme in respond to these dynamic forces cause by third parties which includes intermediate customers and the other business partners in the supply chain system; final customers

and the internal agents like management. They also claimed that ISO certification can reduce management inefficiencies if adopted in a firm that was labour intensive due to knowledge transfer and if the firm major depends on capital assets, it increases management inefficiency. The performance can improve due to reengineering the firm operation and by implementing a different input mix.

Additionally, Yaya et al. (2014), stated that ISO standards requires an organization to establish a specific quality management system that has the ability to deliver goods and services consistently, or product which meets customer requirements and also using regulatory requirements as applicable. It was aimed to implement an effective system which includes continual improvement to improve customer satisfaction as per the standards requirements (ISO, 2008).

2.5.1.2 Management responsibility

The senior management responsibilities include driving the organizational efforts by participation, ensuring customers' needs were achieved through planning, quality policy communication to every employee, promoting employees' involvement, and also using the feedback loop to review every inputs and outputs. Top management have to develop strategic systems and methods (like customer focus strategy with high expectation) to stimulate innovation, build knowledge and capabilities on the team to ensure the organization stability.

Dowlatshahi (2011), cited in Junk et al. (2006), furthermore said that top management commitment was crucial and can be mediated by providing relevant training courses to employees for empowering them and promoting teamwork significantly. Hence the success of quality teams and employee success depends on the employee training level.

2.5.1.3 Resource management

The organization Human resource management responsibilities includes to ensure the organization have competitive and skilled labour to deliver goods and services as per the customer requirements. This involves the selection, recruitment, training and skills transfers and also retention within the organization.

Additionally, Weckenmann et al. (2015), indicated that in order for an organization to sustain exceptional high quality levels, it would require the entire organization combined best work force talents and abilities. By using a consistency and aligned

human resources strategy the organization can benefit in the long run. This creates satisfaction partnership between employee and employer, because the organization has attributed to the employees' success by providing opportunities for acquiring new skills and practise them, also allowing personal development.

2.5.1.4 Product realization

The organization would have to plan, develop and implement process that were required for product realization as per the quality standards.

Kotler and Keller (2012) also emphasized that value adding model like quality service and goods was very important for companies to adopt, hence promoting differentiate of their products and services from their competitors. The dimensions of quality included durability, reliability, aesthetic properties, operational characteristics (performance), compatibility with standards, correct service and perception on advertising.

2.5.1.5 Measurement, analysis, and improvement

The organization has to implement strategic system which would enable the monitoring and evaluation of the organizational quality management process that were derived from their requirements. The requirements should be derived from the organization needs and strategies in the key processes; including knowledge concerning service and product performance, benchmarking of operations, market and competitive performance, human related issues, suppliers and customers. All these process relate to quality information and data to sustain quality excellence, customer focus and improving the operation performance. Correction plan should be implemented when the desired results are not achieved.

Additional, Vilkas and Vaitkevicius (2013), stated that a third party or auditors have to evaluate the organizational compliance with the quality management requirements practises prior to the issuing of the certification. Therefore an organization requires to get ISO certified, has to adopt the standards requirements and internalize into the management practises, to comply.

2.6 The motivation for companies to implementing ISO 9000

Weckenmann et al. (2015) , detailed that quality management systems was considered as a strategic tool for effectiveness and efficiency to enhance organizations performances, and also can be implemented in any organization to improve the service and product quality. To address the current quality management global trend, the competitive environment requires a paradigm shift in the quality systems. This should encompass the new identified perceived quality trends which includes human focused intelligence quality management. In contrast, Kafetzopoulos et al. (2014), findings was that the ISO 9001 quality management system main aim of implementing in Food companies was to stay competitive in the market by adopting a modern quality practise which enhance the quality and safety of their products.

Vilkas and Vaitkevicius (2013), contended that companies adopt ISO certification due to institutional motivation (includes the organization image and prestige, also to export goods to foreign countries) and functional motivations (includes consistency supply of quality product and service, meet customer's demands and sustain competitive advantage). Their finds suggest that companies implement due to the institutional motives because they were able to form partnerships

Additional, according to Rusjan and Alič (2010), (Alič 2014), also suggests that certification was not a requirement of the standard itself, although organizations still prefer to be certified by an external board or an independent confirmation due to the perception that it adds value to the conformity. Organizations can still implement quality management systems without certification that can assist organizations to achieve their objectives and also meeting the customers' requirements. Hence achievable if the management would be committed, leading to the internal control of the quality management would remain strong and stable.

To sustain, enhancing and achieving competitiveness in this globally competitive business environment, organizations depend on producing high quality goods and services at low cost and minimum time. This has lead organizations to pursue different management philosophies and strategies which include quality management structures. These different management approaches can performance a vital role by raising awareness standards of quality, safety, reliability, efficiency, productivity, work satisfaction and also cost reduction (Denton and Maatgi (2015)).

Several researches have been published on the motivations why companies preferred to be ISO 9000 certified and according to Boiral (2012), cited in Tsiotras and Gotzamani (1996), explained that companies would implement cost and total quality system because of four major principles; these include enhancing the organization's reputation and image abroad, adhering to overseas market pressures and demands, procedures enabling and streamlining to acquire contracts agreements with the customers, eventually growing organization productivity and gain internal control of the implemented quality management systems within the company.

2.6.1 Motivation for implementation of ISO 9000

The motivation for implementing ISO 9000 quality system differs by organization and hence it can be defined as internal or external motivation.

2.6.1.1 Internal motivation

The internal motives can be defined as an organization implements the ISO 9000 system because it has internal drive to be certified and it mainly focuses on the structure approach of the system which includes monitoring of documentation which includes standard work procedures, error reduction through using non-conformance documentation, improved operation efficiency and traceability, quality awareness, effective communication internal and external, including after sales service, improve employee morale, clear personnel obligations and responsibilities, decrease in customers complains (Willar et al. (2015).

Allur et al. (2014), conducted a longitudinal survey studies and their finding showed a positive relationship between internal motivation to adopt ISO 9000 and improvement to the firm's profitability. The contributing factors were improved quality products and services, firm productivity, leading to sales growth which improves the capacity of export in terms of growth and sales margin, improvements in training staff which incorporation of qualified staff and also impacts in external image improvements. The authors also emphasized that internal drive results in continuously improvement of the system rather than minimal maintenance to comply with the standard because the firm members were knowledgeable of the QMS objectives and principles. The main technique and impact tool for ISO standard quality training for manager to gain higher level of internalization, was by using improvement teams like quality circle team to

derive the greatest benefits. These assists to manage the daily activities and practices according to the standard requirements.

Additionally, according to Beck and Walgenbach (2009), the internal benefits were that employees gain a better understanding of working processes by management providing support and participation. And also giving them responsibilities by increasing the quality- improvement culture awareness through teamwork and better optimization of resources. Furthermore, Boiral (2012), cited in (Boiral and Amara, 2009), has highlighted that managerial and internal motivation to implement and adopting ISO 9000 has proven positive results because of the highly effectiveness configuration performance achieved by certified organization. The Beck and Walgenbach (2009), cited in Terziovski and Samson (1997), further stated sometimes there was no or little impact on the organization performance but the major contribution can be achieved through creating a climate change in the organization. The performance predictors can be categorized as quality leadership and information, development of human resources, people management and customer focus which attributes to customer satisfaction and overall business performance.

2.6.2 External motivation

The external motivation can be defined as an organization implements the ISO 9000 certification to fulfil the customers' expectation and also to enhance the quality reputation of the company. This can lead to increase the market share, sales revenue and improving marketing efficiency, access to new markets opportunities, improve corporate image and customer relationship. The main motive for the certification would be the reaction to the pressure from external factors which includes customers demand, government policies and marketing benefits.

The implementation of ISO 9000 certification makes customers to beliefs or can be used as proof that a company was capable of producing high quality service and goods. Hence this leads firm to adopt the certification to comply with the requirements of the business environment and does not implement as a long-term commitment towards quality management. Al-Rawahi and Bashir (2011), conducted a study in New Zealand where they compared the reason for implementation of the ISO 9000 between the smaller and bigger companies, their findings showed that most of the time smaller companies implement due to external factors and large ones due to internal factors.

Beck and Walgenbach (2009), also added that mostly external motivated organizations adopt the system for the sake of legitimacy, meaning to appear to demanding customers that they are keeping up with their competitors. This results in over – expectations from the system, low employee motivation due to not being involved as part of the team and the organizational performance was negative affected.

2.7 Advantages of implementing quality management system ISO 9000

2.7.1 Product quality and realization

The product quality and realization would be achieved through the development of product design and plan, also continuous improvement. The organization had to implement and maintain the records of daily production of the products and services to ensure it meets customer's satisfaction. The documentation includes daily or weekly deliveries and post-deliveries activities; these includes delivery lead time, communication with the customer and customer response after receiving the product. The input products (raw material) would also be purchased from suppliers who had a quality system in place or that conform to quality standards. The traceability has to be in place in case the need arises (Salah (2006)).

2.7.2 Process measure, analysis and enhancement

The organization has to document the checking, monitoring, measuring, analysing and improvements in the processes to demonstrate product conformity requirements. Kim et al. (2011), asserted the ISO 9000 quality management framework, as the study that synthesizes several aspect of the implementations and realization of the framework performance. The authors found that the positive influences were realised if the system was implemented due to internal drive than external. To achieve short and long term performances, it was vital for organizations to put more efforts to focus on the key critical factors.

2.7.3 Improvement internal and external customer satisfaction

The employees would be satisfied through job empowerment and full involvement which would result in customers' satisfaction. The employees have to be able to follow work standard procedures to minimise the error and this would result in superior quality products. Nair and Prajogo (2009), also added that internal satisfaction can be

achieved by actively implementing daily practices that emphasize by the ISO system to change behaviour and improve decision making.

2.7.4 Improvement in organization performance

Ochieng (2015), stated that ISO 9000 certified organizations has a positive impact on the organizational performance, this was the authors' findings on their study. They conducted the study by comparing companies which were ISO certified versus none; and analysis showed that there were no significances in term of the revenue or net profit of the organizations. This was because the financial performance of an organization is affected by various external factors which firms cannot control. Other analysis showed an increase in terms of the organizations' net assets which was a great significant difference, henceforth showing improvements on the ISO certified organizations performance. This encouraged organisations to get certified with the perceived benefits that they would get directly or indirectly improved business performance (Joubert, 1998).

2.7.5 Business performance improvements

Various studies have demonstrated that there was a strong correlation between ISO certified organization and market share due to operations execution and quality awareness. Sampaio et al. (2012), also supported the notion that the ISO certification was used as a marketing tool and depends on the type of the organization. For example, a developing company, would adopt the quality management system believing that they would achieve internal benefits from the system. Hence non developing organizations would adopt the quality system to obtain the certification only. The ISO 9000 certification improves operational performance which improves market performance because of the customer's perception of quality in certified firm which enhance the market performance. Increase in market share due to improvements in operation performance leads to competitive advantage for an organization, hence this has a direct impact on the business performance which leads to organizational profits.

2.8 Disadvantages of implementing ISO 9000 quality management system

Bergman and Klefjo (2007), contend that organizational that mainly focuses on quality improvement more often, does not always get positively results on productivity of the firm through measures such as reducing in employee absenteeism and turnover or

reduced sick leave by employees. Although an organization can fully commit to quality systems, there was also the possibility of experiencing a long term rippling effect on the production cost and the delivery time. Hence these results might be the opposite in the short term. Zeng et al. (2007), also concurred with the above author that the effectiveness of the standard was questionable due to high paperwork, poor compatibility and flexibility with other management systems, adverse increase in operation costs and reduce product quality.

2.8.1 Organizational culture dependent

Willar et al. (2015), furthermore stated that the success of implementation of the ISO quality system depends on the organization culture. The senior management have to develop a corporate strong quality culture to drive the implementation and sustainability of the ISO quality system, through commitment. A study was conducted in Indonesia and the results demonstrated a significant gap between the management practices of many certified companies and their requirements with essential goals of ISO 9001. This was in relation to sizeable construction performance results and the infrastructure projects in Indonesia

Saad and Asaad (2015), concurred that conflict can result due to the established organizational culture that hinders the implementation of ISO 9000 requirements and results from ignoring the culture factors. Ming ong, Kathaamla and Sawalha (2009) also emphasized that the organizational culture is vital because the implementation process and maintenance of the ISO registration would be a success or failure depending on the individuals' beliefs and perceptions, whether they find the quality system useful in the first place. These would affect the success implementation if the organizational culture does not have a good communication channels and employee involvement. The documentation can be implemented like work instructions, policies and procedures, but would not be effective if the organization attitude does not change into developing and applying them. Therefore, the establishment and implementation of the quality system would fail.

2.8.2 Poor implementation plan

Poor implementation of the system can occur if management do not understand their roles and the standard itself. Because this can result in superficial integration of the standard leading to possible consequences such has lack of mobilization and

increasing bureaucracy when the motivation was purely perceived as marketing advantages. For example, the bureaucracy in terms of high volume of documentation for collecting data, which includes hourly filling the form and filing, hence disturbing the normal working pattern. Also managers have to endure the change by following new guidelines and regulation of the system, and drive the implementation at the same time. Other negative impacts include lack of commitment, extra work, prohibitive costs and also lacking the integration of the system with the company requirements. Thereafter the firm would not improve both the internal or external practises and results into an effective QMS adoption instead of continuously improving tool (Alič, 2014).

For example, Beshah et al. (2013), conducted a study in Ethiopia on the two ISO certified manufacturing companies namely Harar Brewery share and Ethiopian plastic shares. Their fifteen years' performances were analysed before and after implementation of ISO certification at macro and micro level. The macro level performance of Harar including profit, sales volume, capacity utilization, training, defects, down time and promotion were examined based on the company's seven years' annual report. At micro level, process variability of key performance indicators was evaluated based on the classical statistical quality control tools. Although Harar Brewery Share Company (HBSC) got Ethiopian Quality Award in 2009 under manufacturing industry category, the empirical examination showed no strong correlation among the company performances to ISO 9000 implementation.

Both HBSC and Plastic data shows that the process parameters are not statistically controlled hence no significant improved organization performance from ISO 9000 certified companies. The strong correlation was at macro level in terms of decrease in downtime and bottle breakage and sales was not conclusive since the company had incurred high advertising costs. Therefore, the author concluded that the financial growth can be attributed to high promotion and marketing through high advertising costs incurred.

Furthermore, Chiarini (2015), study was mainly focused on the impact of reduction on cost in terms of rework due to poor quality, recalled and rejected of products, mechanical factory stoppages, by firms which have implemented the ISO system. His findings conducted on six different sectors demonstrated that there was a cost

reduction which was less than 27 %, hence this implies that there are other several factors that influence cost reduction in firms. The pharmaceutical, steel and food industry conclusions from the study proved that quality system was not sufficient to reduce costs by reducing mistakes, and also the Research and Development process did not find the system useful. In contrary only the mechanical sector which the results showed that the non-conformity process, as per the ISO system can reduce all costs related to poor quality.

2.8.3 High Implementation costs

Several authors argued that the ISO 9000 benefits decrease over time when a company has reached its maturity level in the quality systems, although the quality system adds high costs and burdensome documentation which does not provide any competitive advantage. The process cycle according to the principles of the standard require operating costs for hiring new qualified staff, purchasing of measuring equipment and time consuming meetings to convince top management to increase expenditure costs.

This high implementation and maintenance costs are contributed by; high audit costs caused by unknowledgeable auditors on the firm specification and also different standards interpretation among the auditors ; for example certification bodies ethical issues, excessive paperwork from auditors, (Sampaio et al. (2009)). Hence Small and Medium enterprises (SME) do not implement due to human, financial and material resources.

Likewise, Alič (2014), also stated that especially for micro and small business the implementation costs can be very high due to infrastructure implementation, training and process modification. The company reputation can be negatively impacted if the organization decided not to renew the certification and loses it. The implementation costs and the cancellation impacts can result in huge expenses because loyal and potential customers can have abandoned the business which results in low revenue. For example, the case study of Sloven companies that cancelled their certification and within a year 40.9% of these companies' revenue decreased by 36.4% and only 13.6% of these companies showed both increase on income and growth.

Most small companies do not implement the system because were concerned with the implementation costs, including time and that were also relevant higher than the

expected revenue. Management did not have internal pressure to follow quality system and can be only implement due to customer demand. Contrary large companies implement due to internal decision which was relevantly low to implementation costs since they can recover their costs through, cost reduction due to increase in production efficiency resulting in less waste. (Chatzoglou et al. (2015),).

For example, the study done in China and Hong Kong by Mark et al (2015) on the travelling agents companies, findings suggested that China travelling agents were not keen to implement ISO 9000 because their main concerns were; qualifications of the auditors remain ambiguous for travelling agency management, confidential technology and process information can leak out, excessive time consuming and also the requirement for knowledge and expertise. Hong Kong concerns was the increase in workload due to process documentation which result in increasing pressure on the team members, high costs for annual auditing and too many routines on documentation which leads to no creativity.

Additionally, Lafuente et al. (2010) said that it was not cost effective for companies with high seasonal or casual labour to implement ISO 9000 due to high frequency employment of new employee which would be required to be trained. Therefore, this leads to high training costs. The authors further stated that firms with high labour cost as part of the total manufacturing might not adopt the system due to high costs and those firms with high automation would be more cost effective. Their findings illustrated that non certified companies were still competitive in the market place and hence concluded that the ISO certificate cannot longer be used as a marketing tool.

2.8.4 Lack of competitive advantage

Several researches have shown growth stagnation in ISO 9001 certification globally and these can be due to companies avoiding implementation or quitting the certification due to negatives effects lower marketing attractiveness and improper implementation (Boiral, 2012; Sampaio et al., 2009). For example Yaya et al. (2011), conducted the study to evaluate the customer loyalty in e-banking system by comparing e-banks service quality with and without ISO 9000 certified. The results showed that there was no difference or no benefits for the ISO certified e-banks

because the customers have no interaction with the banking employee or premises, the online banking gives the customer almost all the control of their accounts.

Therefore, the proven external benefits as per interpersonal service setting were diminishing hence reducing the attractiveness of the marketing advantage. The study showed that customers were satisfied with the e-service due to positive attitude towards online services and also the privacy and system availability. This shows that e-banks offer high standard service because these were well organized, hence quality management does no longer provide distinct competitive advantage and external benefits (Yaya et al. (2011), cited in (Casadesus and Karapetrovic, 2003).

Furthermore, Alič (2014) cited in (Sampaio et al., 2009) also observed that recently global decrease of ISO implementation in some countries was due to numerous certified companies in that country, and these countries have reached their maturity or market saturation level of ISO 9000 standard. This caused organizations to shift from getting ISO certified to techniques and core values of quality management. Hence being ISO certified has lost its meaning which was no longer attractive to remaining companies, therefore no new registration. Mark (2015), also concurred that ISO 9000 was not required for doing business in order to maintain and sustain competitive advantage because as soon as the counterparts get the certification it does not add any differentiated value to customers. Similarly Sampaio et al. (2011), studies show that the ISO certificate has reached its saturation stage in some countries and this effect can be deduced because the certification process was no longer a distinction element. Hence it has become less attractive and lost its differentiation characteristics for the remaining firms.

2.8.5 Heterogeneous performance indicators measured

Although several different studies have been conducted on the benefits of ISO-certified companies and most were showing reducing errors in production and reducing maintenance costs, leading to minimal customer complaints and increasing sales. On the contrary, these firms' market position remains the same after the ISO system implementation. The performance indicators measured on each case study were heterogeneous and hence difficult to replicate the study on the impacts of ISO 9000. This makes the studies incomparable and also the contextual specifications of the studies which include country, organizational size, and type of responded and activity

type. Thus making it difficult to conduct a sophisticated and reliable data analysis based collected data from various different sources (Boiral, 2012).

2.8.6 Hinders innovation

The working environment became scientific because everything was documented on how to operate and troubleshoot. This hinders innovation because workers were no longer creative. Thuo (2013) opined that the certification generated undesirable workload related to document preparation and pushed staff members to work according to prescribed procedures at the cost of limited creativity and critical thinking. Similarly, Boiral (2012) found that the ISO 9000 can also hinder opportunities and further improvement in the service sector due to complexity of the innovation in this sector.

2.9 Benefits of Quality Management ISO 9000 system

According to Boiral (2012), the benefits of organizational achievement from the ISO 9000 was expected to motivate managers to renew certification and encourage other organizations to adopt the standards due to; some literature perspective which goes beyond the ISO 9000 scope and measuring certain benefits like job satisfaction, financial aspects and good working climate. For organization to achieve benefits of ISO 9000 it depends on contingency factors, for example employee commitment, organization motivation for certification and managerial leadership. As per recommendation of the ISO objectives, certified organizations were expected to continuously improve their operational benefits.

Pina and Sellés (2008), argued that for an organization to benefit fully from the ISO system, the ideal way would require the organization to observe the requirements guide lines to initiate a quality culture establishment first. The organization requires to have internal authentic motivation for transformation to establish an adequate quality standardised system. Hence this would lead to a more efficient management in the organization leading to competitive sustainability. For example in the Greek manufacturing firms, during the economic down turn and financial crisis business environment, ISO certified companies were able to operate (Psomas and Kafetzopoulos, 2014).

The adoption of the ISO system results in managerial inefficiency reduction rather than a new product factor due to influences of the marketing reasons. The firm was able to

retained and acquired customers, accessed to new markets due to low unsatisfied customers. ISO can be used by management as a commercial tool and hence minimize its internal impact (Boiral and Roy, 2007).

The standards by itself cannot improve effectiveness, but rather the way in which it was implemented inside organizations and the context of the certification process. The benefits were also not homogenous, for example two manufacturing factories using different quality control management system on their daily operations can implement and get certified with the ISO system. Although some organizations do not adopt the system since they still perceive it as a set of complex standard that they require to implement.

To realise the ISO 9000 benefits the organizations require not to implement the system as an attribution of the standard, as a first priority to demonstrate its capability to meet the customer demand. Instead it should adopt the system either due to internal or external motivation to realise short and long-term benefits. For example Kuo et al. (2009), stated that service organizations were most of the time motivated by external forces because these require to improve their relations with communities and authorities, to improve the marketing and customers' requirements and also the corporate image. Globally pressures had subjected manufacturing firms to more coercive forces than the service firms, they can also benefit more in terms of cost reduction if they have internal drive for the ISO adoption.

The benefits are reviewed as following:

2.9.1 Internal aspects

The internal impact of the system was related to operation management improvements, which includes cost reduction, operational efficiencies, productivity, quality control through non-conformance management. These were achieved through communicating quality awareness importance in the business products which encourages troubleshooting to identify the problem in the company. Thereafter modifying process or procedures to improving the product quality. Also organizational effectiveness which includes quality-related leadership, internal control and resources management includes communication and training.

2.9.1.1 Operational performance

The implementation of ISO9001 standards requires the daily monitoring of the documentation and process and this includes standard working procedures which act as a guide for the operators. This leads to improvement in the documentation system and quality awareness, hence leads the operational performance to improve because the operation becomes consistent.

Chatzoglou et al. (2015), conducted a quantitative study to determine the relationship between the operational performance of an organization and the adopting the ISO 9000 system. The outcomes proved benefits of the system for the organizations and the shareholders because the empirical analysis showed a 71% variance, which is significant. This shows a directly affect with operations execution, quality culture awareness, customer satisfaction, market share, sales and revenue. The authors stated that although the implementation of ISO may not increase production but would enhance the quality of produced goods, hence increase in operation efficiency might lead to increase in marketing efficiency. This was due to the structured and quality documentation system which improved operational performance.

2.9.1.2 Reduction in operation downtime

Intakhan (2014), stated that quality management ISO 9000 can improve planning efficient in terms of production activities efficiency, handling of material, quicker delivery time and waste reduction.

Likewise, Kim et al (2011), also stated that the benefits of ISO 9000 system outputs can be defined as operational performance which includes reduced cost, fast delivery, enhance employee satisfaction, improved productivity and enhanced flexibility, were achievable if organization puts efforts into the system. The several empirical studies supported the argument and the result showed a positive correlation relationship among the two (e.g. Feng et al., 2008; Magd, 2006); organizational efforts includes implementation of the techniques and principles of the ISO 9000system that includes business aspects in terms of customers and suppliers.

2.9.1.3 Innovation

Mangiarotti and Cesare (2014), argued that the ISO standard and Innovation can be perceived as antithetic because ISO 9000 promotes exploitation at the expense of exploration and enhances creativity projects. Their studies conducted in 12

unspecified Australian industries showed positive results on process innovation and negative in product innovation. To avoid biasness, the study did not consider technological innovation alone to avoid penalize firms which were active in markets and logical methods.

The benefits of external auditing as per the certification process increases the organization performance because it has to implement initiatives that ensures the organization meets the standard requirements. The executive or senior management understand the complexity of the organizational structure and they can enhance management control by implementing different initiatives like restructuring or reengineering the process. The company structure can also be reviewed to measure performance quantitatively in different divisions and the changes can be implemented in a modest way to be more receptive to the employee. This would improve internal communication which can lead to increase in employees' commitment to accountability and quality, hence they would be more innovative in improving the processes in the firm.

This suggests that the quality management systems also enhance product quality which includes conformance, design and durability gained from technology innovation and quality improvement resulting in financial. Sampaio et al. (2012), also concurred that there was a significant improvement in reliability of the performance and production process, quality control and external quality performances after ISO 9000 adoption. This was attribution of using many quality tools like just enough, customer management system which enhance the quality performance of firms.

2.9.2 External aspects

The external impacts of the system incline to enhance service to customer by creation of supplier to customer relationship involving raw quality (input), competitive pricing, and goods inspection and also trust between the two parts, reduction in customer complains, customer satisfaction. Market share improves through organization reputation and product quality which leads to increase in sales and company image.

2.9.2.1 Increasing Market Share

Alič (2014), concurred that the ISO 9000 certification was a formal indication for implementation of quality management system and was used as a marketing tool, because it shows that the organization was responsible and conforms to business

common rules. This leads to benefits; increasing market share because customers perceive better quality and services which leads to new customers, orders and also opportunities of entering into a new Market or expanding the business. The firm can become a market leader because there would be less customer complains attributed to less mistake in every department due to the quality insurance structure. For example Lafuente et al. (2010), findings show that certified firms had 42% international markets share compared to the non at 30% which was measured statistically as the ratio of foreign sales to total sales. This shows increase in the firm export capacity, especial to the EU market.

2.9.2.2 Business opportunities local and global

Trade barriers were removed which stimulated free imports of goods and services which has recently increased globalization trends due to international trade opportunities between developing and developed countries. Hence intensified competition has resulted from their counterparts in developed and developing economies. RSSC has also took the opportunity to export its products to the international markets like the European Union markets, USA, Millennium Cities Initiatives without or with little duty and have obtained a trade quota. The business environment has become dynamic and organizations were forced to review their strategic tools which includes quality management. The ISO system provides a tool to communicate with local and global customers and making it easier to market the products.

Furthermore, Magd and Nabulsi (2012), concurred that ISO 9000, was a recognized worldwide dominant initiatives that was developed in 1980s by the quality movement. In our modern world, this system was frequently implemented as a strategy that focuses mainly on quality by numerous organizations worldwide.

2.10 Factors that influence successful implementation of Quality Management system ISO 9000

For successfully implementation of ISO certification organization had to overcome many obstacles which includes changing the organizational attitudes and culture. Because the ISO system would require changes as per the standard requirements and the firm old operations practices would change which may result in employee resistance. According to Magd and Nabulsi (2012) top management need to be very

supportive and committed to create a quality awareness culture and also provide a good rewarding system because the supervisory level or first line management were mostly involved people in the implementation and maintenance of the system. These were the key drives of the system while the operators follow instructions for the successful implementation and maintenance.

Furthermore, as Psomas and Kafetzopoulos (2014), stated cited in Goncharuk and Monat (2009), and also in Marin and Ruiz-Olalla, (2011), that managers should evaluate ISO system broadly to identify global and critical vision results that were claimed and also measure and monitoring of key performance indicators in every division and process. This was to correct or prevent any problematic area and improve the performance. The generic key performance indicators parameters may include the production rate of new product, percentage on-time shipment, measurements of productivity either total or partial, profit and revenue growth and also customer satisfaction index.

The quality management system ISO 9000 can be successfully implement by identifying the organizational key critical factors according to the standards which embraces; management/leadership, factual approach to decision making, a systematic approach to management, major focus on customer quality oriented culture, people involvement , training, good communication skills, ensuring a process centred approach, internal and external quality audits, also promotes mutually beneficial supplier relationships and continuous improvement. For example Psomas and Fotopoulos (2010), findings showed a positive strong correlation among business performance and quality practices in terms of product quality, durability, effective time delivery, reliability and also Research and Development(R & D) performance in terms of competency and cost, less error in design and R&D time. This was observed in the service sector and can be attributed to the implementation of all the key critical successful factors in the business.

Saad and Asaad (2015), findings showed that organizational culture was a vital aspect for any system implementation, because it was the major obstacle to the relationship between soft factors and organizational performance. For a firm to have a healthy organizational culture it needs to improve continuously the relationship between employee and management by encouraging teamwork and providing training

programmes, also encourage employee to attain academic qualifications. The authors further elaborate as cited in Hutchins (2007), that the major obstacle was the willingness to change more especially if the organization was unionized. The ISO9000 soft factors include human resources and management responsibility, which include team-building and employee empowerment that were difficult to achieve.

According to Saad and Asaad (2015) cited in Mahal (2009), and also cited in Asaad and Yusuff (2013), that employee motivation can be increased by good labour management which result in less staff turnover. The challenge of employee empowerment was that employees had to be given more power over their job and then means that management power has to decrease, even though management still has to follow up and exhibit a clear logic of responsibilities and authority to ensure consistence in the work results. Employee's motivation can also be increased through encouraging brainstorm sessions or making them participate in generating of new ideas for operational and business matters.

Kim et al. (2011), findings showed that various framework have postulated that it was crucial to base the key factors on the organization specific context, because several empirical studies demonstrated a positive correlation among the organizational performance and motivation factors. The firms require to appreciate, identify and focus on the critical motivation aspects according to their organization context to yield favourable performance, as the practitioners develop the framework. Hence motivation and critical successful factors would reassure that the practitioners were reducing resource waste and increasing performance. Several studies had shown that by implementing the ISO 9000 without identifying successful factors it did not ensure positive effects.

Additionally, according to Ismyrlis et al. (2015) , views on key success factors or motivational aspects, they emphasized the crucially for the organizations to put extra effort into these aspects especial during the initial implementation stage. The priority critical factor was identified as management commitment because to drive the process successfully, good communication and employee empowering was required. The main drivers and contributors to the critical factors can be explained by:

2.10.1 Management commitment

Management commitment was a crucial factor for the organization to realise the maximum benefits because the organizational culture change was driven by the key critical successful factors. For example, this ensures adherence on daily basis on quality meta-standards which was instituted by facilitating training and recording daily activities. The systematic process approach enhances internal communication and eliminates non-conformance. These internal benefits offset external benefits because cannot be utilized as an international marketing tool.

Magd and Nabulsi (2012), suggested that the ISO standards implementation was intended to concentrate mainly on the internal improvements of an organization. The senior management can show commitment by including all employee involvement in the implementation stage to increase employee awareness, educating and training of employees and internal auditors, coordinate inter-department meetings to foster a transparent working environment.

Intakhan (2014), also concurred that the management commitment was crucial since the documented systems control, ensures efficiently production cycles which reduces rework and poor quality products. This leads to high operational standards and maintenance cost, and also producing higher quality products and services; resulting in high customer's quality confidence in the firm. The authors findings showed that Thailand business who were ISO certified have customers' global for example Europe and United State of America.

2.10.2 Employee satisfaction

On the other hand, various authors argue that the ISO implementation leads to production process benefits, marketing benefits, higher customer and employee motivation, thus leading to an increase in the market share. Consequently, also in the improvement of the long-term financial performance of a company which has implemented quality awareness and quality employee service quality.

Employees' job satisfaction and commitment can be increased through instilling a strong customer orientation because they would have internal drive to deliver quality service and goods, address customers query and also develop a personal relationship which encourages them to identify the customer needs (Kotler and Keller, 2013). The training, management support and employee involvement provides employees with

skill and also the recognition of employee would retain talent, hence reduce critical skills shortage.

People involvement was one of the basic requirement of the ISO principles which can results in highly staff motivation because of the opportunities provided actively in all levels to enhance their knowledge, performance and experience. This would lead to high quality employer service to customer through responsiveness, availability, timeliness, completeness and pleasantness. Because the empowered employee can think strategically in their job and also taking accountability to deliver better results. Therefore, organization success was achieved through people ability not through the use of systems

2.11 Extent to which ISO 9000 quality management system improves customer's satisfaction

According to Yaya et al. (2013) cited in Yang and Peterson,(2004), the conceptualizing of customer satisfaction can fall into two perspectives; transaction-specific perspectives can be described as when a customer evaluates a distinct experience through a service or product, and cumulative perspectives (overall satisfaction) was described as when a customer evaluates accumulative by summing all the satisfaction factors associated to a specific service or product including the firm. Cumulative customers' satisfaction is used in this study to evaluate the extent to which ISO 9000 quality management system increase customers' satisfaction, because the standard first priority is to meet the customers' requirements and secondly the ISO certified organization interact in many different ways with their customer. For example, the way a service company interacts with their customers was differently from the manufacturing.

Kotler and keller (2012:150) defined customer satisfaction (or dissatisfaction), as a feeling of pleasure resulting from comparing a service or product's performance benchmarking against her/ his previous perceived performance. A firm can be able to achieve customers' perceived expectation if the firm puts every effort in place and also understands the consumers' requirements. ISO 9000 certified firms were perceived by customers as producing high quality products and services which acts as the firm marketing strategy tool. It can encourage recurrence sales and also can builds brand loyalty. This was an advantage to a firm because the level of satisfaction increases

and also increase the level of loyalty which leads to a trusting relationships to pay prime prices and cross-buying.

This also prevents customers to consider the perceptions about a potential alternative supplier which might be selling the same goods at a lower price or using substitute goods. For example Moturi and Mbithi (2015), coincided with Magd and Nabulsi (2012) , that ISO 9000 implementation can increase customer satisfaction; in their case study of the quality standard adoption in the University of Kenya showed positive benefits that were gained for short and long term benefits. Customer satisfaction, both external and internal index was raised by 15% in short period of 4 years. The rippled long term benefits was the customer loyalty and the image of the university.

According to Yaya et al. (2011), whose definition of customer satisfaction as an extremely commitment to consistently repetitively repurchase or re-patronize the same brand or preferred goods although circumstances have influenced marketing variety and the customer has potential to change the brand product or service. The authors also defined customer loyalty as cited in (Kim et al., 2006), as the approach that involves affective feelings including behavioural and attitudinal; these were psychological involvement, sense of good would and notion of favouritism towards a certain product or service. Therefore, loyal customers tend to be less price sensitive and resists as well from competitors. And in the future they prefer reuse or repurchase the same product and revisit the same service provider. They also likely to influence potential customers by word of mouth, recommending the product or service to other consumers hence advertising and generating a good company reputation.

Although Yaya et al. (2011), contend that in the online environment, the ISO 9000 quality system does not improve either customer satisfaction or loyalty. Customer satisfaction and loyalty are increased by the availability of the e-service and the quality of the service which encourages customers to use the same site. The certification of the site does not have any impact on the customer's perceptions. Cristobal et al. (2007), studies showed a direct link or strong correlation between loyalty and satisfaction in various kinds of e-services.

Psomas and Kafetzopoulos (2014), emphasized the need to establish a continuous improvement organizational culture to produce goods and services effectively and efficiently to meet the customer's satisfaction. Creation of quality organisational culture

was vital to achieve business excellence through meeting customer's needs. Customer satisfaction was the long term tool to organizational success through retention and loyalty. Customer's perspective about the ISO certification in manufacturing firms, creates the sentiment which promotes long-term customer support, loyalty and satisfaction.

Organizations objectives includes increase profitability by maximizing the return in every capital investments and this includes the adoption and implementation of ISO quality management systems. In the quality literature, market performance and financial relationship to quality managements systems has been identified. For instant during elasticity demand; organization that have constantly attained good reputation of on time delivery of high quality products and services, would be able to retain customers. Meaning there were possibilities that the customer would switch to another supplier due to high prices. Moreover, the firm has an added advantage of making profit even though the prices has increased. The factors considered are;

2.11.1 Product and service quality

Mark (2015), concurred that by adopting and implementing ISO 9000, service agents like traveling agents can also improve their process and products through preventative and corrective measures. The benefits that can be realised in terms of customer confidence and retention, that includes quality service, cost reduction through coordination with external stakeholders including suppliers and customers, and competitive advantage achievement. According to Kotler and Keller (2013:398) the value perception increases with quality products and quality service and hence decreases with price.

2.11.2 Service deliver

Excellent service delivery was crucial for the business to survive due to the positive effects of long term opportunities for growth and profitability. Service delivery includes the customers' perceived value, total customer costs and total customers benefit and where defined by Kotler and Keller (2013:395), as; customers' perceived value as the difference amongst the customers' perceived alternatives and the potential customers' evaluation of all the paybacks and costs of the offer. Total customer benefits from a given market offer is monetary perceived value of the package including the functional, psychological and economic benefit expected from the service, product and the firm

reputation. Total customer costs were the total perceived costs for a given market offer that consumers supposed to incur while assessing, procuring, using and disposing, which includes, time, monetary, energy and psychological costs.

When customers were dissatisfied with the service they would change their service provider and this can be contributed due to pricing which are high, unfair or deceptive, service encounter failures with the company employees; unknowledgeable, unresponsive, impolite, core service failure; billing error and service mistakes, competition found better service, response to customer complains; no response, negative or reluctant response and ethical problems. (Kotler and Keller,(2013:399))

Additionally, Oliver (2010), stated that customers would discuss their bad service delivery experience with ten other customers and share good experiences with only five customers. Hence it's critical to provide and maintain effective service delivery to increase market share through customer satisfaction and loyalty. This results significantly contributes to the organization's revenue, profitability and growth (Boshoff, 2005; Parasuraman et al., 2005; Heskett et al., 2008). Studies had shown 5 percent profit increase for firms with customer retention that range from 25-85%. (Herington and Weaven, 2009). This includes;

2.11.2.1 Ordering and delivery process

Customers prefer companies that were able to deliver timely and also accurate billing documentation. Firms using advanced technology systems had improved the speed, efficiency and accurate to enhance their services from order to payment cycle. (Kotler and Keller 2013:375)

Lafuente et al. (2010), also indicated that the retention and acquiring of customer shows the customers perception that the firm can fulfil their requirements. The ISO quality management system aims at meeting customers' needs by increasing durability and reliability and also marketing route of on time delivery of quality goods and services. This was due to the availability of data sharing and process manual available to everyone.

2.11.2.2 Client communication

The certification would stabilize the expected quality of products and services which would result in less customers complains. Several studies have shown a positive increase in customer satisfaction index in firms which are ISO certified. Sanja (2010),

findings also showed great customer satisfaction by firms providing direct relationship between customers and technical experts' team, who are able to respond to technical questions and provide reliable advice.

2.11.2.3 Responsiveness to enquires

Thai Hoang et al. (2006) emphasized on a service culture in the organizational culture to encourage employees at all levels, the importance and purpose providing excellent service to customers which involves, reliable offers, responsiveness, empathetic customer service all these leads to quality service as perceived from the consumers' point of view.

Furthermore, Nabavi et al. (2014), cited in (Karapetrivic et al., 2010) also concurred that the improvement of faster response to customers' demands and enquires was due to the implementation of ISO 9001. The quality system requirements include training of department staff and also providing clear guidelines in form of standard operating procedure for service providers as how to answer the phone, availability of clear price lists, samples of products as per customer requirements. Employees empowered to be full accountable and also present all products details to the customer as per ISO 9001 quality requirements.

2.11.2.4 After sales support

After sales support was crucial to monitor the customers' satisfaction after the sales of goods because this ensures retaining of customers. For example, some companies call their customers to make follow up after service or goods deliveries.

2.11.5 Handling of enquires and complains

The ISO system provides a guiding process to handle customer complaints and this as can enhance customer satisfaction. The process promotes customer feedback by monitoring customers' complaints and addressing them through non- conformity reports. These offers opportunities to retain and also enhance customer loyalty, which leads reputable corporate image that promotes a company to compete both domestic and international.

Authors like Motwani and Kumar (1997), and also Carlsson and Carlsson (1996), also proved that by implementing the ISO quality system, the firms would be able to achieve shorter delivery times, deliver quality service and goods leading to less customer complains.

2.11.2.6 Organization image

Kuo et al. (2009), explained that the same standards can be applied to any organization although it was originally developed for manufacturing industries. This management system can assist the organization reputation by achieving quality requirements through compliance with the ISO standards. This would satisfy customer's quality requirements because the employee's quality awareness would be high and the regular quality audits which encourages continuously improvements.

2.12 Conclusion

Several authors have proven a strong positive correlation between ISO 9000 implementation due to internal motives than external motives, which impact on the financial performance; operation efficiency and increasing in sales. Organization with internal motives achieve their targets like process and product improvements in a short time after certification. Organizations with external motives like maximizing profits or using as a marketing tool might not benefit at all or in the long term depending on the level of saturation of the certification in the market. Although some authors also contended that there were no significant benefits achieved through the ISO standards because they found no significant correlation with the process controlled parameters and also increase on revenue were related to high advertising costs. Most of the studies were conducted on manufacturing sector and hence gives opportunity to evaluate the system further at RSSC organization since it is also a sugar manufacturing company. The following chapter presents methodology for the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

The previous chapter presented the literature related to the study. The aim of this chapter was to detail the research methodology and design that was used in this study. This chapter also outlines the rationale for the research design selected according to the objectives stated in chapter one. The main sections covered include the research philosophy, design, strategy, population targeted, data collection and analysis, validation and reliability.

3.2 Aim and Objectives

The aim of the study was to evaluate the quality management system ISO 9000 in the manufacturing industry in Swaziland. Psomas and Kafetzopoulos (2014), further confirm the need for organizations to evaluate the benefits of ISO certification implementation in a comprehensive perspective to identify activities that can promote organizational profitability. The researcher believes that the identified a gap in the research was significant and hence warrants further investigation. This study was guided by the following objectives;

- To establish the benefits of quality management ISO 9000 at Royal Swaziland Sugar Corporation
- To identify the factors that affect successful implementation of Quality management ISO 9000 at Royal Swaziland Sugar Corporation
- To establish the extent to which implementation of quality management ISO 9000 at Royal Swaziland Sugar Corporation would improve customer satisfaction
- To recommend to senior management appropriate implementation practises for quality management ISO 9000 at Royal Swaziland Sugar Corporation

3.3 Participants and Locations of the study

The study focuses on evaluating the quality management system ISO 9000 which was implemented in the Sugar Factory in Swaziland and therefore the population sample was the gross population of Royal Swaziland Sugar Corporation. RSSC has five main departments which includes Agriculture (includes Garage and fields management),

Manufacturing (include two factories and Distillery), Human Resources (includes clinics and all supporting services relating to Human resources issues), Finance (including property section) and Commercial (includes Marketing and stores). This study was focused only on the Manufacturing department, due to time and resources constrains. Simple random sampling technique was used that every participant was chosen through manufacturing groups in the RSSC emailing system (intranet). The population size was 1000 RSSC manufacturing employees who have intranet emailing system. The sample size was 278 as illustrated in table 3.1.

3.4 Research design and methods

According to Welman, Kruger and Mitchell (2007), research designs refers to the blue print that details the entire research process. Therefore, it is crucial for the researcher to select a method that would address the objectives of the research.

Furthermore, Sekaran and Bougie, (2013: 95) stated that research design was the overall research process based on the research question of the study, which includes data collection, measurements and analysing .There are three types of research design which includes;

- **Exploratory study**

This research is conducted if there was no much information available at hand about a similar research or related problem that have been sorted in the past. Extensive preliminary work has to be done to understand and assess the magnitude of the problem and also familiarise with the phenomena in the situation. Thereafter the decision would be taken if the research requires further comprehensive investigation based on the preliminary work conducted. (Sekaran and Bougie, (2013: 96)).

- **Descriptive study**

The objective of this research is to describe the characteristics of events, people or situations by collecting data that is relevant. In nature this research is either qualitative or quantitative and also can also assist in simple specific decision making in a research topic. Since descriptive research is used to identify and classify elements and appropriate for quantitative approaches therefore was relevant to this study. The researcher interest was the impact of the ISO system effectiveness implemented at

RSSC had surveyed a sample of RSSC employees and also obtained secondary data on production performance on the mills, therefore descriptive research was more relevant to this study.

- **Casual study**

This research uses scientific approach to test and analyse dependency between two variable; by changing the independent variable, which is assumed as the casual factor, then should change the other dependent variable. This research rationalises and calculates relationships amongst the two variables without determining their causes.

3.4.1 Research philosophy

Saunders *et al.*, (2012:20) defines research philosophy as a term that relates the development of knowledge and the nature of that knowledge. There are two mainly views of philosophies namely, the positivism (quantitative) and phenomenological (qualitative) views.

3.4.1.1 Positivist (Quantitative research)

According to Creswell (2014: 4) "Positivism hold a deterministic philosophy in which causes determine effects or outcomes". It also reduces the research questions into variable which can be tested through empirical observation and data measurement. This approach raises the requirements to measure objectively, hypothesis predicting and testing and also controlling the human behaviour. It was embraced from the physical sciences, therefore proposes the deducing of hypothesis from the theory which was subjective to testing.

Saunders *et al.*, (2012:134) cited in (Gill & Johnson, 2010) also defined positivist approach as a research that depends on gathering of reality data from observing. The data can be measured and analysed to determine relationships that can be generalized to the population (Saunders *et al.*, 2012:163). For this study positivist approach was more relevant because quantitative approach is based on the measurement of quantity or amount (Kothari 2008). The study sought to assess through statistical quantitative using SPSS as the data analysis tool in order to measure the impact quality management system of ISO 9000 implementation in RSSC.

3.4.1.2 Phenomenological (Qualitative research)

The phenomenological approach conserves the views that the social world is complex and cannot be easily rationalized by using theories (Saunders *et al.*, 2012:135). The approach claims that there is a difference between the social sciences and natural sciences, and there is a need for human behaviour understanding and Saunders *et al.* (2012:135) maintain that the researcher should assume an empathetic position, to be able understand the social world from the perspective of the research subject. Qualitative approach, was based on examining the meaning of social phenomena (Feilzer, 2010) and is generated from open ended interviews questions. The data was gathered through observation and available information gained from various sources (Sekaran and Bougie 2013).

The qualitative was irrelevant to the study as the study sought to quantify the results through statistical means such as SPSS. Although using a mixed method which combines qualitative and quantitative approach in research design can increase the benefits (Saunders *et al.*, 2012:166), it was not suitable due to time, resources and cost constrains.

3.4.2 The theoretical framework

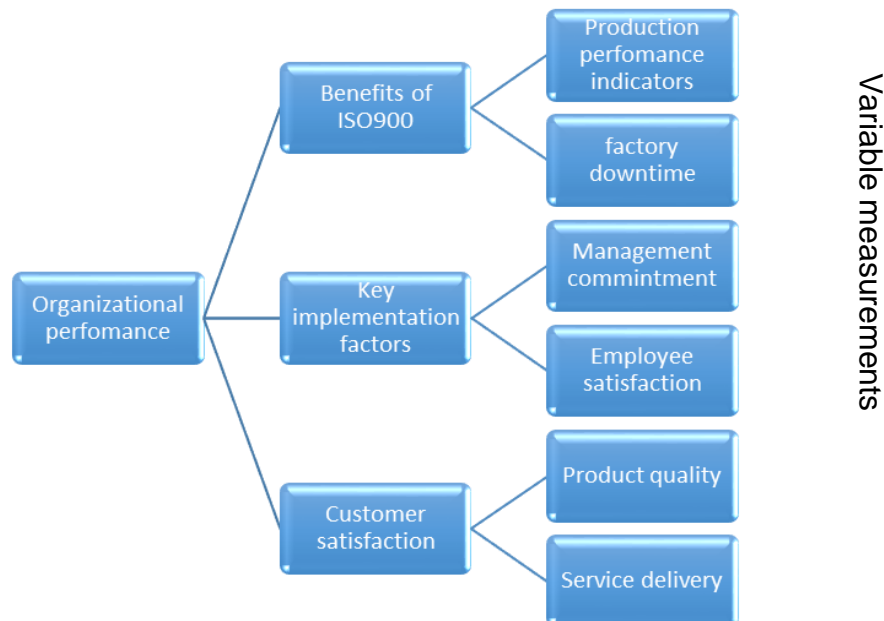


Figure 3.1: showing the depended factors and the variables of this study

The study adopted the approach used by the majority of the researches within similar fields of study by collecting primary data using structured questionnaires and secondary data from archived files. The depended factor would be organization performance and there were three main independent variables; benefits of the system ISO 900, critical key factors derived from the ISO 900 and customer satisfaction. Hence each variable would be evaluated independently using the measures as shown above to identify their impact on the organizational performance

3.4.3 Research Strategy

According to Saunders et al., (2012:173), research strategy is a planned action to answer the research objective questions which is chosen by the researcher and the strategies related to the positivist approach are archival research, grounded theory action research, experimental and survey methods.

According to Sekaran and Bougie, (2013:102) experimental research were related to deductive research and scientific or hypothetico-deductive approaches to research and were usually used to determine casual relationships. Additionally, Saunders et al. (2012:176) explained that this strategy was more relevant to the laboratory setting than a field study, therefore this study is irrelevant.

According to Sekaran and Bougie, (2013:102) Survey research involves the setting of objectives for data gathering about or from people to describing, comparing or explaining their knowledge, behaviour and attitudes. In business research this strategy was common because it allows the researcher to collect the data qualitatively or quantitatively and also involves the designing of the study, preparing reliable and valid survey instrument, administrating, analysing and reporting the results. This strategy was used for exploratory, descriptive and casual research. Therefore, this strategy was chosen for this study because it was relevant.

3.5 Data collection strategy

3.5.1 Target Population

Targeted population refers to the elements, people, persons, subjects upon which the study findings would be generalised (Sekaran and Bougie, 2013). An element can be defined as a single member or a unit of the population. In an organization case study scenario, the entire population of the firm was referred as a population and a representative number of the population was selected to participate in the study.

Saunders *et al.*, (2009:261) defined the representative selected number as a sample of the population and the study results would be inferred to the population despite non-participation. The population was made up of all 1000 skilled and semi- skilled RSSC employees from the Manufacturing department who have access to the RSSC intranet emailing system from April 20 to 15 June 2016.

3.5.2 Sampling strategy

The two main sampling techniques used are nonprobability or probability sampling methods for research studies. When the chosen element from the sample have a non-zero or known chance of being selected as a subject in, the sampling type is referred to as probability sampling; it can be restricted known as complex probability (including double and area sampling, cluster, stratified random and systematic) sample and unrestricted known as simple randomly sampling (Sekaran and Bougie 2013). Furthermore, Sekaran and Bougie (2013) define non-probability sampling as a process of choosing the elements of a population without predetermined chance of being selected as a subject of the sample and the results cannot be confidently generalized to the entire population.

Random sampling was the preferred method to choose a representative sample from the population because it gives a chance every element the equal opportunity of inclusion in the sample (Welman et al. 2007).

The advantages of probability sampling were that the researcher was able to employ statistical significance tests in a larger sample size that enables inferences to be drawn with greater accuracy. Every unit from the population has equivalence opportunity of being chosen unlike non probability sample which was not statistical represented and also has a higher chance of biasness. Random sampling technique was chosen for this study because it was the most appropriate method since every employee of RSSC being in the factories or distillery, Manufacturing departments had an equal opportunity to become a subject of the study.

Table 3.1: Sample sizes for different sizes of population at a 95% confidence level

Population	Margin of Error			
	5%	3%	2%	1%
50	44	48	49	50
100	79	91	96	99
150	108	132	141	148
200	132	168	185	196
250	151	203	267	244
300	168	234	267	291
400	196	291	343	384
500	217	340	414	475
7500	254	440	571	696
1000	278	516	706	906
2 000	322	696	1091	1655
5 000	357	876	1622	3288
10 000	370	964	1936	4899
1 000 000	384	1066	2395	9513

(Sourced from; table 7.1 page 218 from Saunders et al 2009, fifth edition, for Probability sample)

According to Saunders et al., (2012:219), the sample size in simple random probability is governed by; the confidence limit required, the tolerably margin of error, the statistical analysis and total targeted population of the study. Furthermore, the authors' stresses that the larger the sample size the smaller the error and researchers would normal work with 95 percent level of certainty of the sample size chosen. Therefore, for this study the sample size was 278 employees at 5% margin of 1000 population at 95 percent confidence level stated from table 1.

3.6 Research instrument

Bougie (2013) highlights that questionnaires are generally designed to collect large quantitative data and was less expensive and time consuming. Questioners can be personally administrated as mail or electronic questionnaires. For this study, structured electronic questionnaires with closed questions were used. Sekaran and Bougie (2013) argue that questionnaires were an efficient tool for gathering data especially if the objectives of the study are known.

An email was sent to the targeted population with reminder emails send weekly before the start of the data collection phase to ensure a high response rate. The questionnaire was then emailed via RSSC email system. Since RSSC did not have a sophisticated programme to collect data in the RSSC information systems (IT), participates were requested to print and fill the questionnaire, thereafter they were requested to drop in several labelled boxes around the factory and distillery.

3.6.1 Questionnaire construction

The questionnaire was developed based on the literature reviewed on ISO 9000 principles (cited in Magd and Nabulsi (2012),Psomas and Fotopoulos (2010),Ismyrlis et al. (2015) and in the ISO 2008) and also after consideration of the research objectives and questions. The questionnaire was made out of thirteen closes ended questions (13) and was divided into two sections;

- Section A : Biographical data - 3 questions
- Section C: Factors that influence successful implementation of ISO 9000 – 10 questions

Section A was to collect biographical data using listed questions

Section C was assessed using 5-point Likert scale to measure variables that were responsible for management, quality culture. The Likert scale was used appropriate to use because it measured the employee’s perceptions on the questionnaire survey statements in terms of the level of disagreement or agreement. The ordinal scale was encoded with five categories: Strongly disagree: 1, Disagree: 2, Not sure: 3, Agree: 4 and strongly agree: 5 (Sekaran and Bougie, 2013).

3.6.2 Data collection sheet

Secondary data was used to provide adequate data according to Saunders et al (2009), time series data can be developed from compiling and extracting combined selected variable from several surveys that have being collected over a long period of time. For this study, time –series data was obtained from RSSC archived documents (from Business Intelligent system called Cane and Mill) which was used to develop the longitudinal secondary data, to compare the organization’s performance prior and after the adoption of the certification. A ten-year period data was used and for customer satisfaction a five (5) year secondary data was used because only after the implementation of the ISO system RSSC began this process. The collected data

includes the parameters of factory and distillery downtime, performance figures, product quality, internal and external customer satisfaction.

3.7 Pilot study

A pilot study is defined as the study that tests the readiness of the research instrument before the actual study is conducted (Sekaran and Bougie, 2013:158). A pilot study was conducted to assess and refine the structured questionnaire to ensure that there was no ambiguity in the questions, and no problem in the wording or measurement as stated by (Sekaran and Bougie, 2013:158). Before the commencement of the study, a feasibility study is required to identify any shortcomings in the methods and ideas used in the study before launching the research, therefore a pilot study is recommended (Falkenburg, 2007).

Furthermore, De Vos, Strydom, Fouche and Delpont (2005:171) emphasized on the critical aspects of using a newly constructed questionnaire, that it requires a perfect piloting testing to identify errors and preventing costs prior to the implementation for the research. For this study, the questionnaire was piloted on ten employees who were not part of the study sample. The pilot revealed the need to convert questions in English to Siswati as well as removing some questions which were ambiguous and double barred. The corrections were then made before the actual survey.

3.8 Administration of Questionnaire

The questionnaire were distributed on the 20th April 2016, online from the central human resource office of RSSC to the participants through respective e-mail addresses. The participants had 40 days to respond. A weekly reminder was sent to motivate them to respond and also they were informed that it was voluntary. Hence reminding them that they can exit at any time. During the survey of this study, the RSSC Information Technology (IT) was still developing the link or programme for easy administrating of the questionnaire. Due to the RSSC IT delay and time constrains, upon completion of the questionnaire, the participants printed and drop in a ballot box at the designated areas. The researcher would collect the forms after work from the designated areas. This was done to maintain the anonymity of the participant as per the code ethics of the study.

3.9 Data Analysis

According to Saunders et al. (2012:261) the analysis of data is a logical application of statistical tools to evaluate data, describe and also illustrating the data. The data analysis also includes the investigating of the information gathered through techniques that demonstrate relationship and trend patterns. For this research both primary and secondary data was analysed in the following way;

3.9.1 Primary Data analysis

The primary data from the questionnaire was first evaluated for completeness and then coded. The uncompleted and cancelled questionnaires were not considered. Then the statistical software packaged, Statistical Product and Service Solutions (IBM SPSS 23) was used to analyse the data, Descriptive statistics was used to illustrate the frequency distribution, mean and standard deviation. Furthermore, to present a pictorial view of the frequencies on few categories a pie chart was used, because it displays it as a percentage of the whole. Where there were more categories bar charts were used.

3.9.2 Secondary Data analysis

The secondary data was collected from the BI systems at RSSC and Microsoft excel 2010 was used to plot the data in graphs, including lines, clustered columns and bar charts and tables, to compare and trending information. Then IBM SPSS was also use to further analyse the secondary data for Mhlume factory using the paired t- statistic tests for matched pairs sample. The purpose was to determine if there was any significant change at 95% level confidence from period 1(1991-2001) prior to ISO implementation to period 2 (2003-2013) after ISO implementation, in terms of performance indicators including extraction, boiling house recovery and overall factory performance.

The Lost Time opportunity in percentage was calculated using these equations

$$\text{LTA \%} = 100\% - \text{overall time efficiency.}$$

Furthermore, the coefficient of determination (R^2) was used in the graphs to measure the variations of LTA %.

3.10 Validity and reliability

- Validity

Validity is the determination measurement of an instrument to check if the instrument is measuring what it was supposed to measure or fulfilling its purpose. According to Sekaran and Bougie, (2013:174), validity can be internal validity which is the confidence that is place in the cause and effect relationship, or external validity which is the extent at which generalization of the results of a casual study to other variable, e,g people or events. Although different ways can be used to assess validity of a research only two would be explored.

Content (face) validity confirms the measurements including the satisfactory and representative aspects of the concept. The content validity is satisfactory or greater when the scale items represent more relevancy to the domain or universe of the concept being measured. The degree of measure that fits a theory against the designed test is the construct validity and is achieved by using discriminant and convergent validity.

The research findings were validated through construct validity because the study is establishing the relationship between quality management system ISO 9000 and variables which affect the overall organization profitability. Hence is a measurable relationship between two variables. The Secondary data was collected from dependability sources, the RSSC domain where organization data is archived from the BI systems cane and mill and also from annual reports. The secondary data was captured into the BI systems through the factory scales and laboratory which was audited for quality and accuracy.

- **Reliability**

According to Sekaran and Bougie, (2013:229), reliability is the extent to measurement of free error and ensuring consistence in the results from the instrument over various items in different times. The goodness of the measure is assessed by the measuring instruments which has to be stable over time by getting consistent and stability results.

Consistence, stability and internal reliability are the prominent factors in reliability and according to Blumberg *et al.*, (2005), there are three tests, namely; Cronbach's Alpha test, Test-retest and Parallel forms. For a Cronbach's Alpha test, the internal reliability

measure used in the research, “calculates the average of all possible split-half reliability coefficients” (Bryman and Bell, (2007:164). Meaning that it measures the degree to which instrument items are comparable or similar and reflect the same underlying constructs (Blumberg *et al.*, 2005). Test-retest involves the administering of the test on one occasion and then after an interval of time re-administering the test to the same sample. Parallel forms measures the degree to which alternative forms of the same sample measure produce similar or same results.

When the Cronbach Alpha coefficient is greater than 0.7, it provides the researcher with confidence because of the internal consistency of the statements or analysed items and also measured evidence of an underlying construct (Eisinga et al. (2013)).

Table 3.2 : Cronbach’Alpha Coefficient results for this study

Cronbach's Alpha	N of items
0.811	13

From table 3. 2, the Cronbach’ Alpha coefficient results was above 0.7 and closer to 1 at 0.811 which means that the questionnaire was reliable and shows internal consistency of the statements in the questionnaire. Hence it also shows the relative reliability of the results across the thirteen (13) non demographic questions and meets the requirement of being replicable.

To increase the reliability of the data, the researcher conducted a pilot testing, where the team (10 employees including Managers) interpreted and review the questionnaire. The revised corrected questionnaire was written in both simple Siswati and English for the respondents to understand. The secondary data reliability can be checked relatively by others because it is open to RSSC management to scrutiny, and stored in a secured storage place.

3.11 Limitation

The study was expected to collect primary and secondary data from both Simunye and Mhlume sugar factory, and also the distillery. The key limitation was time and resources constrains; the secondary data in the distillery was stored in hard copies and it was a tedious job to manual capture per day for a period of ten years. This plant does not have a BI system and daily production data was stored in hard copies. The data in an excel form was not reliable due to high staff turnover and was not completed.

The secondary data for Simunye factory did not have information on the mill performance prior to 2002 when ISO was implemented and this limited the research because there was no data to compare with. There was insufficient data on customer satisfaction because the longitudinal surveys were only conducted starting from 2010. The Distillery longitudinal survey scope only had three parameters in 2010 and thereafter ten parameters. This limited the researcher to analyse if there has been any increase or decrease in customer satisfaction from 2003 when the quality system was implemented to date.

3.12 Ethical considerations

Ethics can be defined as norms or standards of various actions that provides guidance of moral choices of relationships and behaviour (Cooper and Schindler (2008:34). These key ethical issues include voluntarism, privacy, maintenance of confidentiality and data provided by the participant, and also the method that would be used to collect the data.

To address the key ethical issues, prior to the questionnaire being administered, the researcher got an ethical clearance from the University of Kwa- Zulu Natal, after RSSC submitted a gate keeper letter. Thereafter RSSC Human Resource Learning & Development gave the researcher the authority to use the company emailing system. An electronic consent form together with the questionnaire and RSSC approval letter distributed to everyone on the intranet. This contained information detailing the aim of the study and addressing all the ethical concerns.

3.13 Conclusion

This chapter provided the description of methodology used and also highlighted the limiting constraints which included time and resources during the extent of the research. The research instrument was discussed which included the sampling size, techniques and also the pilot test conducted prior to the research. The statistical techniques applied and the fieldwork performed was also discussed which included ethical manner in which data was collected from the participants. Chapter four, that follows presents the findings from this data collected.

CHAPTER FOUR

RESULTS AND INTERPRETATION

4.1 Introduction

Chapter four presents the results from the research questionnaire and secondary data. The chapter also presents the relationship of the data to the study objectives that were developed in chapter 1. This chapter also presents these key questions as categorized by each objective, thereafter the findings on the pattern of this study is interpreted. Tables and graphs are used to present these findings based on the empirical data.

4.2 Research Instruments

4.2.1 Response rate

The questionnaire was distributed online to every employee which has access into intranet of RSSC and the sample size was 278 employees at 95 percent confidence level.

Table 4.1: Survey Response Rate

Total population	1000
Sample size	278
Total questionnaire	209
Incomplete questionnaire	15
Total usable questionnaire	194
% usable data	69.78%

According to Serakan and Bougie (2014), a 30% rate of response was considered acceptable, with mail and electronic questionnaires because usually the response rate is low since the participate respond as per their convenience. Therefore 69.78 % was a good response rate.

4.3 Biographical Data

The first section of the questionnaire collected the respondent's age, position at RSSC and the years of employment. This information was critical for the ISO system implementation, for example the experience in terms of age, position and years of employment, unable employees to understand the system and their roles. The management staff was the key driver of the implementation and while the operator,

artisan and others (including general labours which include artisan and operator's assistants) are the people on the ground who implement the system.

4.3.1 Employees Age Group

The pie chart illustrates the RSSC employees' age group of the operators, artisan, shift leaders, Managers and others. Others are seasonal employees, which includes artisan and operator assistants.

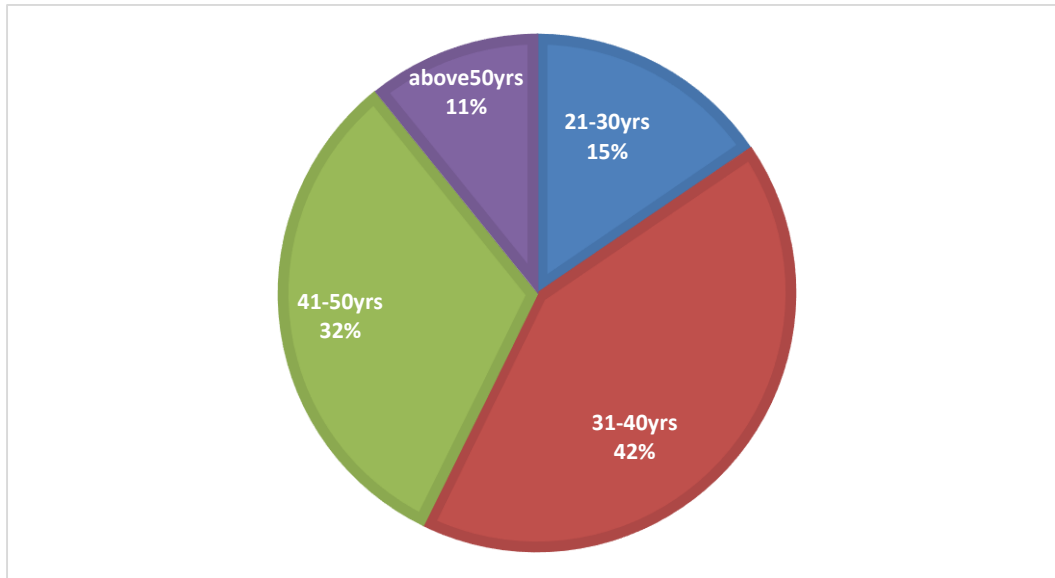


Figure 4.1: Analysis by Participants Age groups

The majority of employees who responded were 42% of the employees were at the age group between 31-40 years old, followed by 32% age group between 41-50 years, 16% , age group between 21-30 years and 11 % above 50 years.

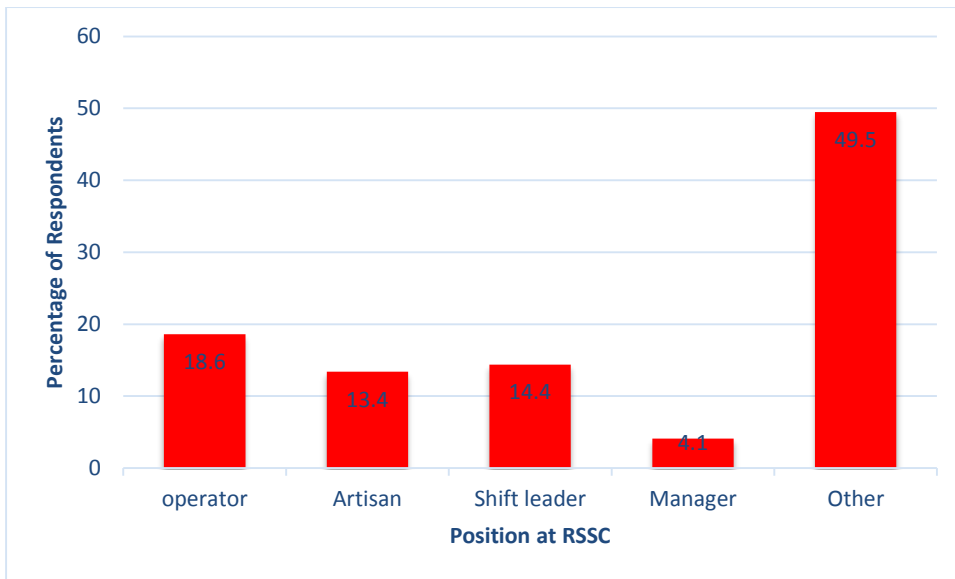


Figure 4.2. Analysis by the current employment position at RSSC

The majority of employees who responded were 49.5% of the employees who fall under the category of others which includes clerks, artisan and operator assistants. This was followed by 18.6% operators, 14.4% shift leaders, 13.4% Artisan and 4.1 % managers. 50.5% of the responses were from skilled labour employees who were accountable for the ISO quality successful implementation in RSSC, through driving and coordinate. The other 49.56% consists of semi-skilled labour who execute and assist the skilled labour to achieve results.

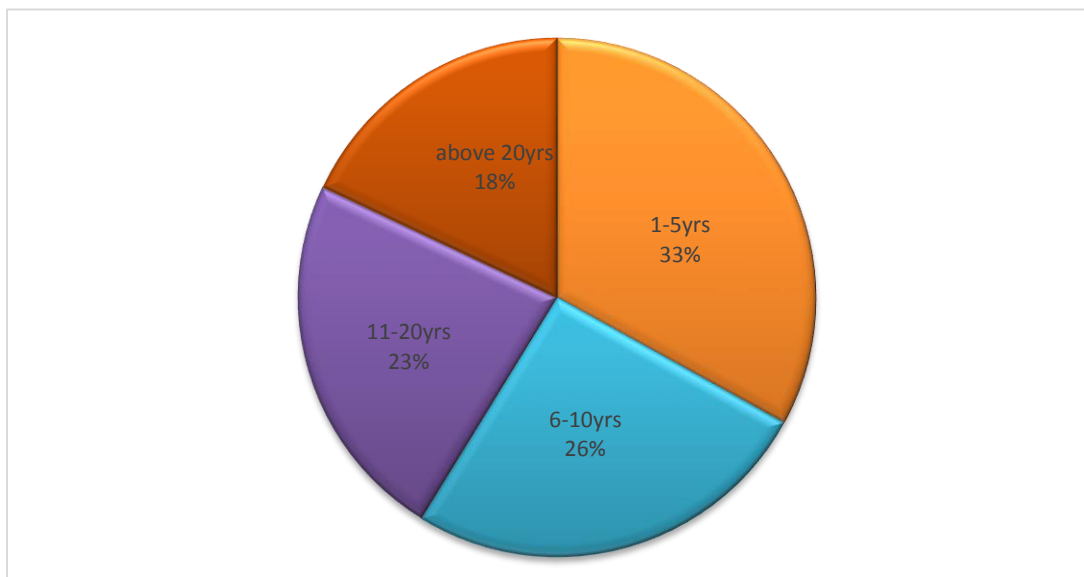


Figure 4.3 Analysis by the years of working for RSSC

Staff tenure at RSSC shows the majority of the employees 33 %employees have been with the organization less than 5 years, 25.8% employees between 6 - 10 years, 23.2% between 11- 20 years and above 20 years only 18%.

4.4 The benefits of ISO 900 quality system Organizational performance

Secondary data was used to analyse organizational performance in terms of the performance indicators and time efficiency (downtime) from each factory, Mhlume factory from 1989 to 2013 and Simunye factory from 2002 to 2016.

4.4.1 Performance figures

4.4.1.1 Mhlume Sugar Mill performance indicators



Figure 4.4: Comparing Mhlume Factory Performance Parameters from 1989 to 2012

The Mhlume factory performance figures or indicators were plotted for a period of 24 years in terms of the extraction, boiling house recovery and overall recovery. The performance trends show a decreasing pattern of the percentage extraction and boiling house recovery which were influence the overall recovery.

Table 4.2: Performance analysis Mhlume factory

Two Sample Statistics	Paired Differences				
	N	Mean	STd. Deviation	t	Sig. (2-tailed)
Has extraction increase after ISO 9000 implementation	11	0.8491	0.3970	7.093	.000
Has Boiling house recovery increase after ISO 9000 implementation	11	0.8164	1.5448	1.753	.110
Has the overall factory performance increase after ISO 9000 implementation	11	1.5600	1.4413	3.590	.005

The results show that there at 95 % level of significance that performance indicators, extraction has not increase or decrease at 0.0% level of significances, the boiling house recovery has increased significantly by average of 11%. Leading to the overall recovery of the factory at 5 % level of significance, which was a weak correlation to the benefits associated with the ISO implementation.

4.4.1.2 Simunye factory performance indicators

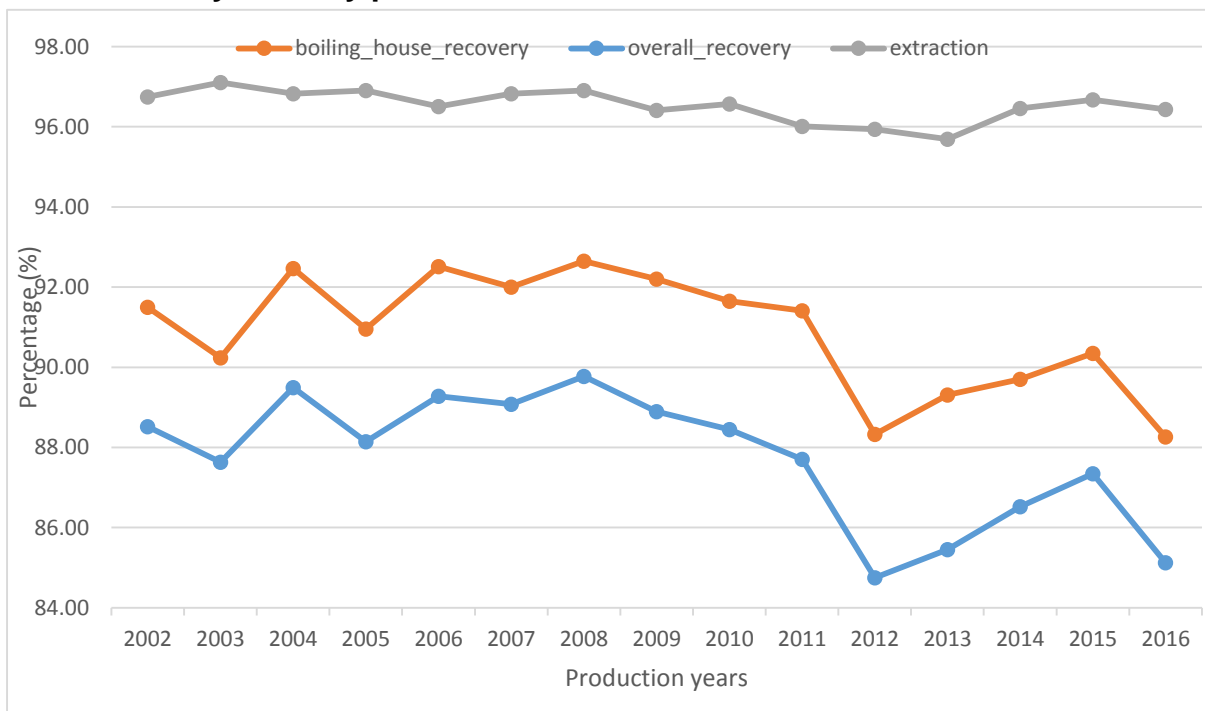


Figure 4.5: Comparing Simunye Factory Performance Parameters from 2002 to 2016

The Simunye factory performance indicators were plotted for a period of 14 years in terms of the extraction, boiling house recovery and overall recovery. The performance

trends also show a decreasing pattern of the percentage extraction and boiling house recovery which influence the overall recovery. The Simunye factory data prior to ISO 9000 implementation was not available in the Business intelligent system (Cane and Mill). Hence the factory performance could not be compared before and after the ISO 9000 implementation.

4.4.2 Down time (Lost time Opportunity)

4.4.2.1 Mhlume Factory down time

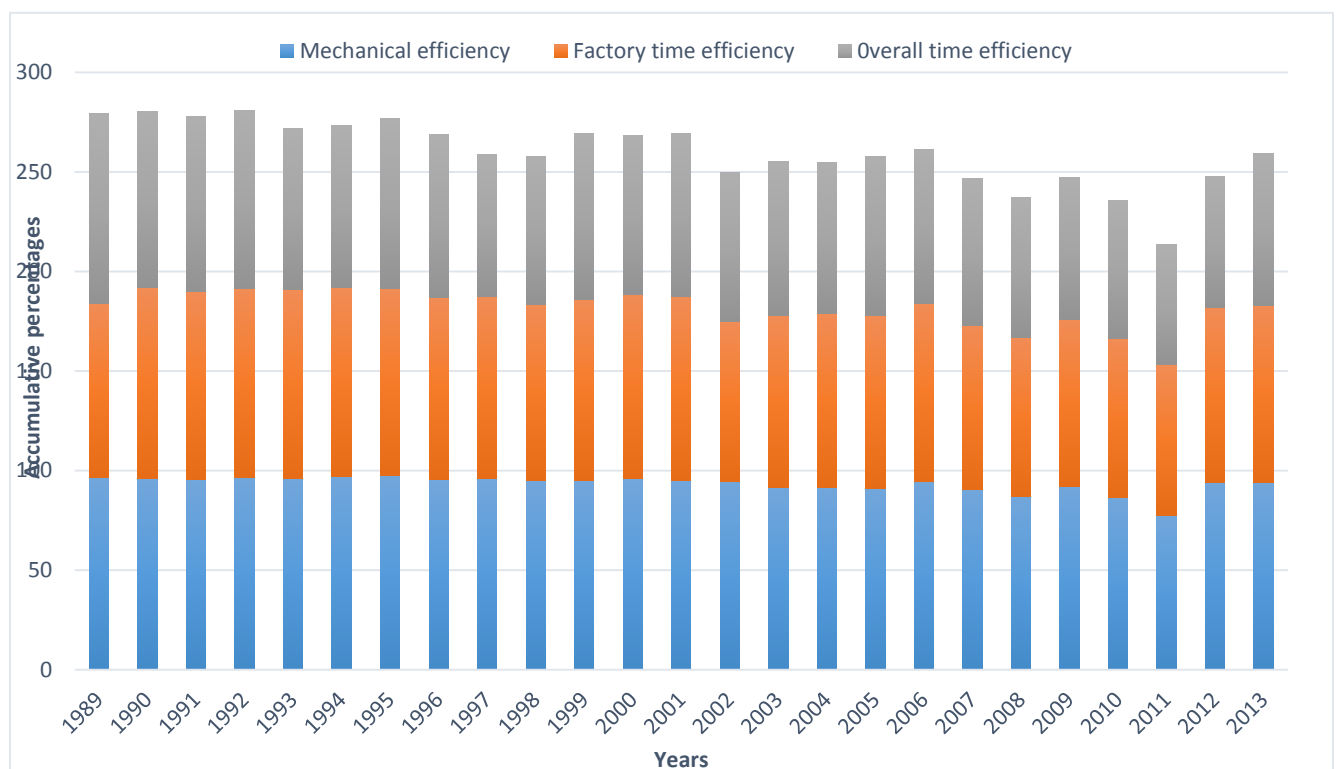


Figure 4.6: Showing Time efficiencies in the Mhlume Factory

The trend shows that the time efficiency for the factory over the period of 24 years was more less the same despite the implementation of the quality system.

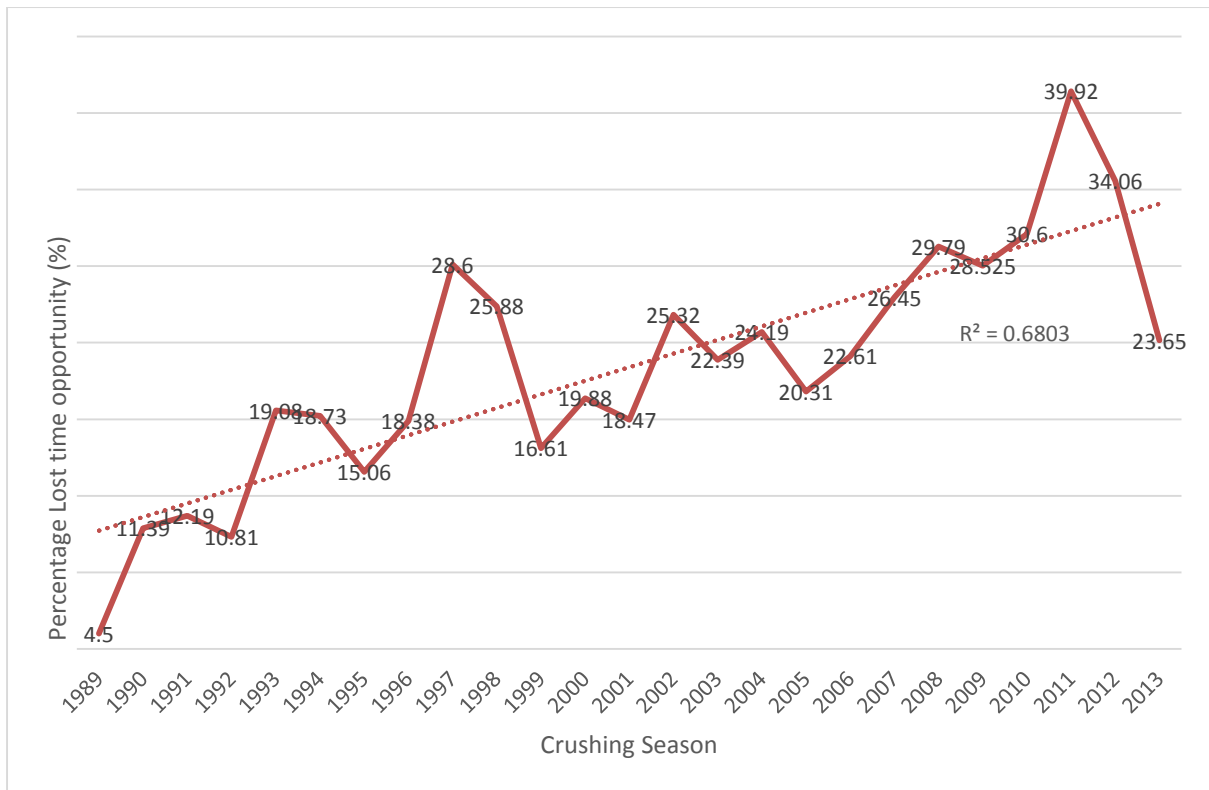


Figure 4.7: Showing Lost time opportunity (LTA) in the Mhlume factory

From the graph above the trend was moving upwards showing that the Mhlume factory time efficiencies were increasing meaning the factory lost time available to produce due to mechanical and operational stops. The ISO system was implemented in 2003 and after that the lost time opportunity (LTA) has never been below 20 %. Since the data was obtained before and after the ISO system implementation, the trend of the data was consistent and the coefficient of determination was at 68.03%, this show a strong correlation between the years of implementation with no; control of the LTA.

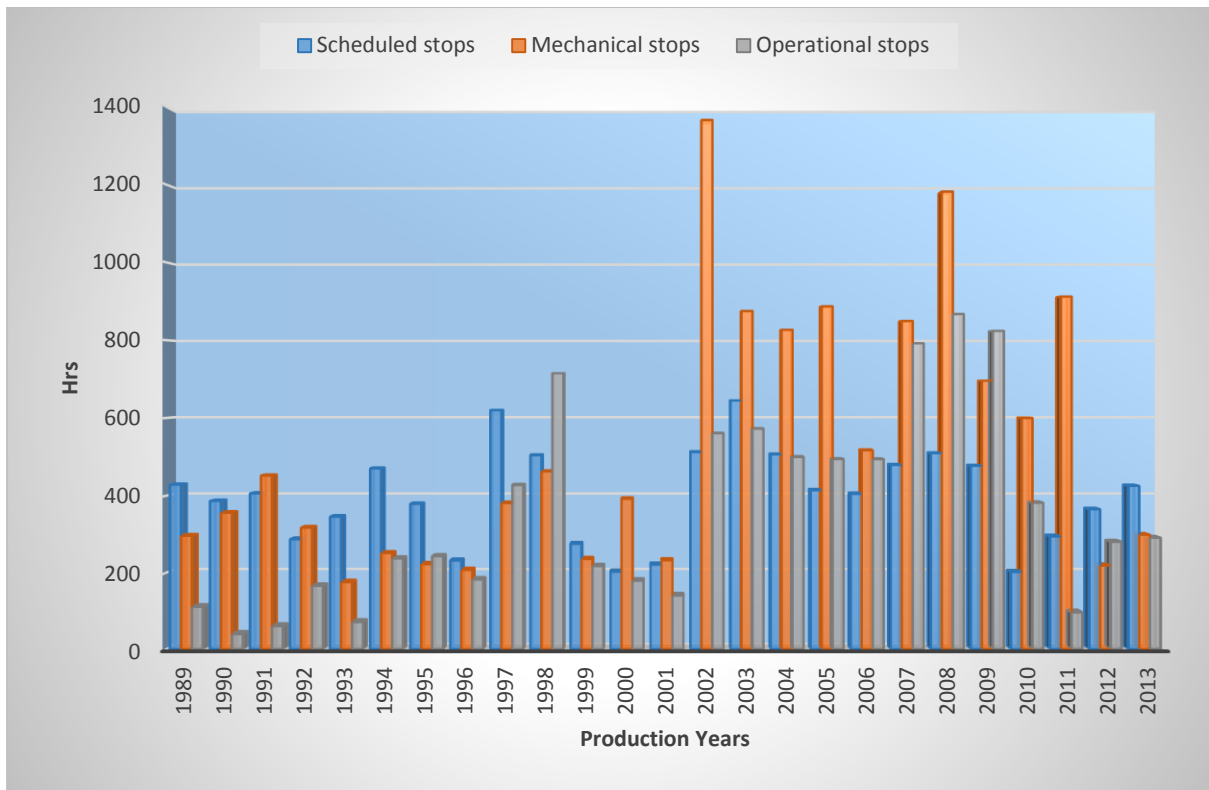


Figure 4.8: Showing Mhlume factory Actually Total operation stops versus Total Mechanical stop and also versus Scheduled stop hours

The results show that the factory had achieved the scheduled or planned hours allocated per section per year prior to the ISO 9000 implementation. After the implementation of the QMS in 2002, the total mechanical stops were worse 1400 hrs which 200% more than the allocated time. Thereafter the operational and mechanical stops hours were actual more less twice the amount of allocated hours for both operation and mechanical stops.

4.4.2.2 Simunye factory down time

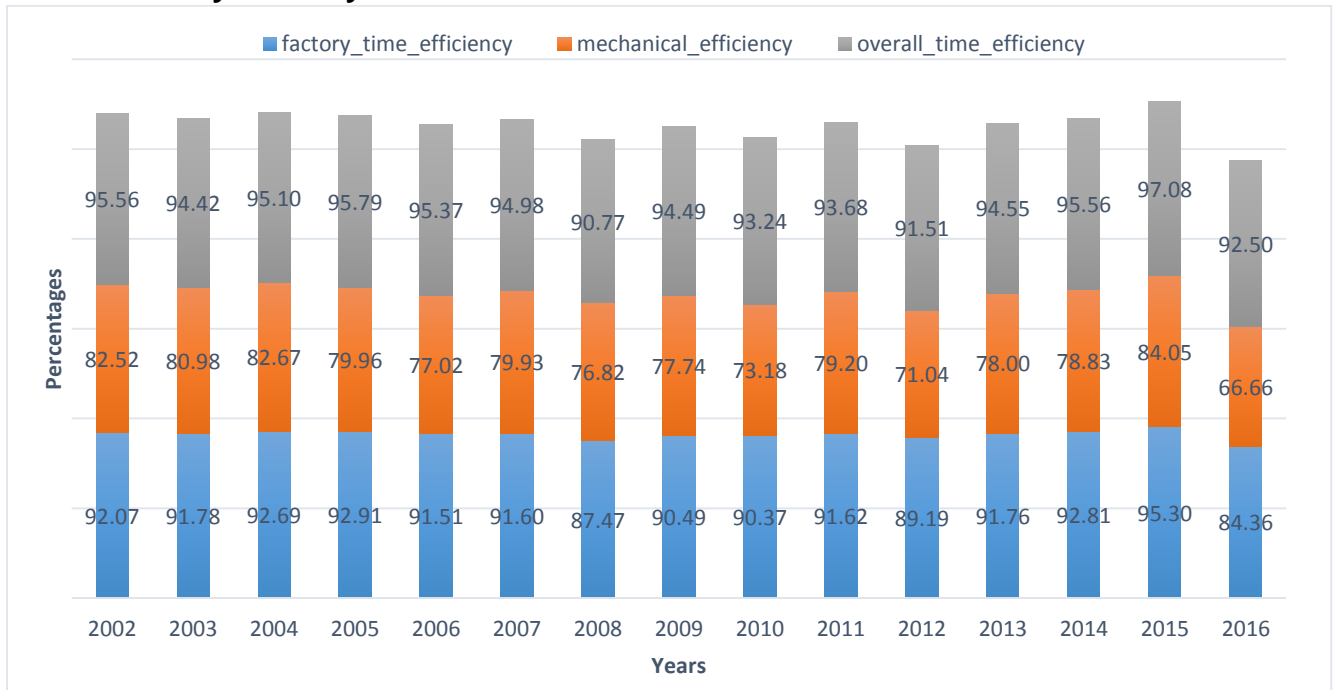


Figure 4.9: Showing Time efficiencies for Simunye factory

The factory time efficiencies trends also show a similar pattern as the Mhlume factory down time. The efficiencies were also below the set target and this shows a similar challenge across the two factories.

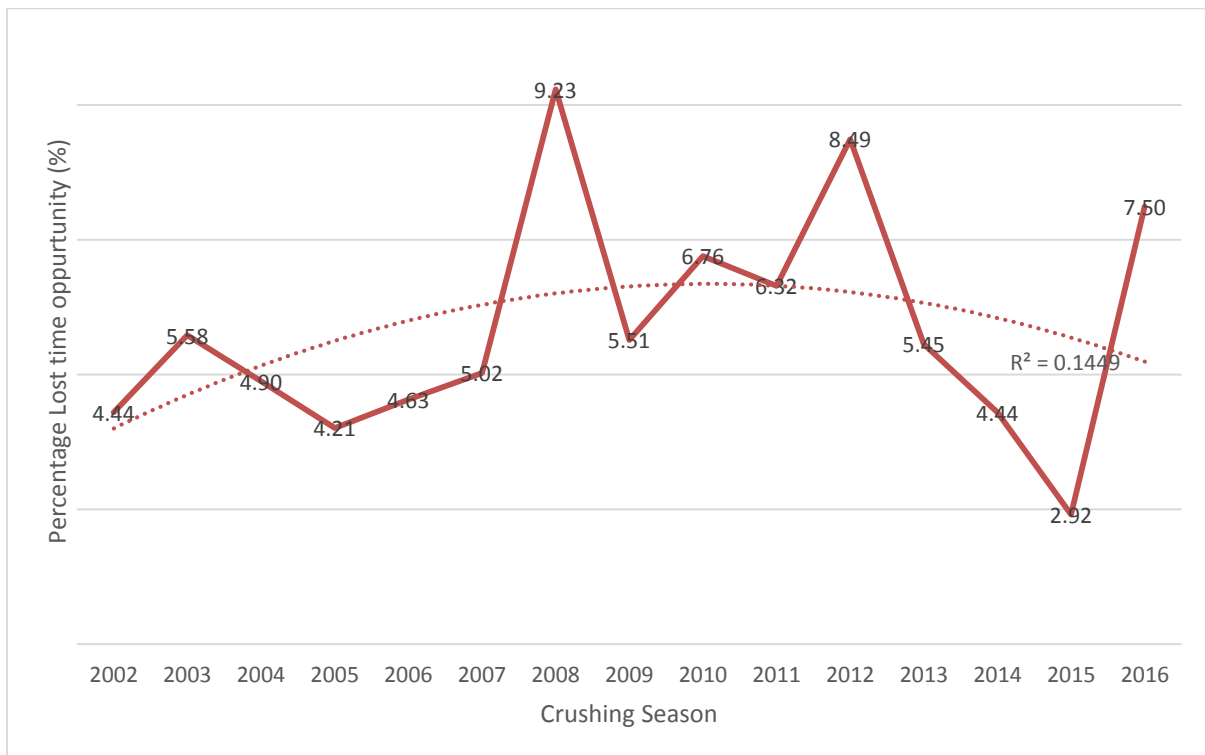


Figure 4.10: Showing lost time opportunity in the Simunye factory

From the graph above the trend was moving upwards and down and showing better results than the Mhlume factory time efficiencies. The increasing meaning that the factory lost time available to produce due to mechanical and operational stops. The ISO system was implemented in 2002 and after that the lost time opportunity (LTA) has never been below 3 %. Since the data was obtained after the ISO system implementation, the trend of the data was not consistent and the coefficient of determination was 14.46%, this show a weak correlation between the years of implementation with any control of the LTA.

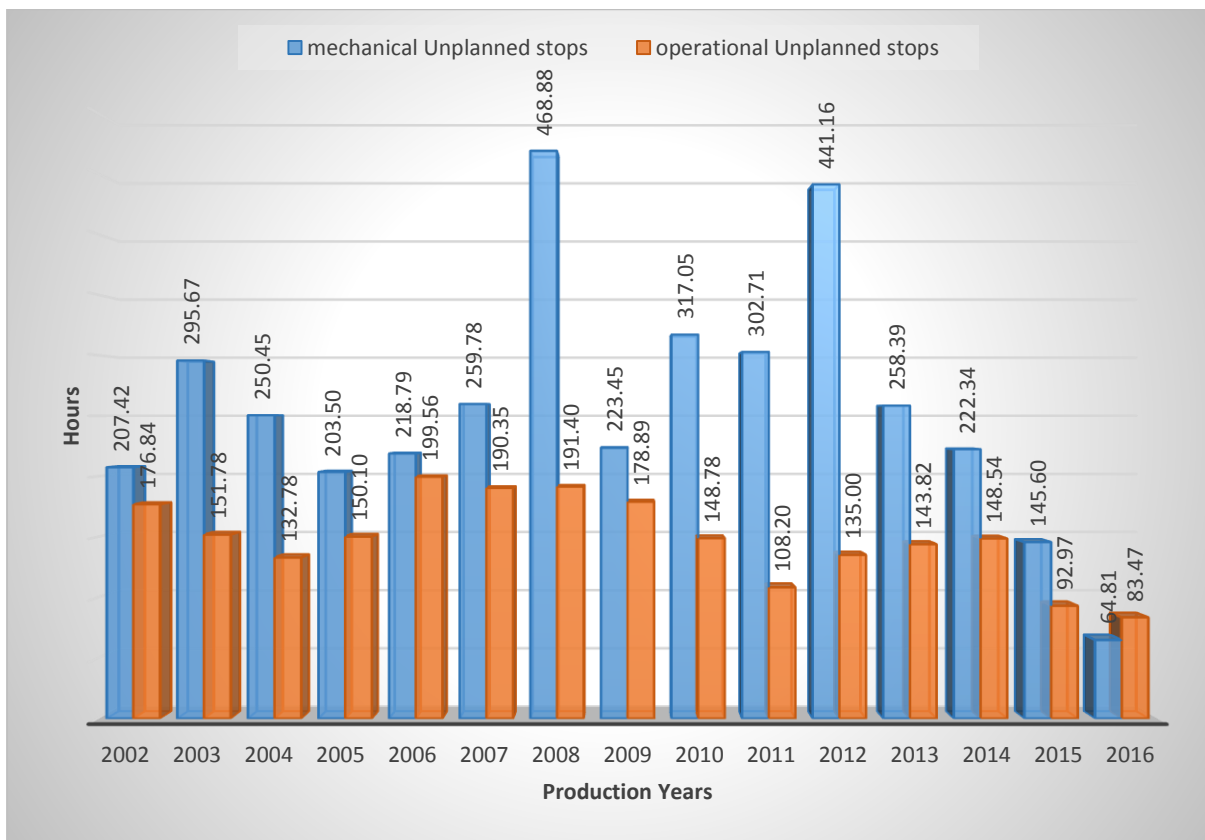


Figure 4.11: Showing Simunye factory Actually Total operation stops versus Total Mechanical stop

Graph also shows similar pattern like the Mhlume Factory trends, meaning that the mechanical stops have not be reduce due to the ISO system.

4.5 Factors that influence successful implementation of ISO 9000

This section sought to establish if RSSC has acquired the critical factors that influence the successful implementation of the ISO 9000 quality system. As identified in the literature review (Chapter 2) these critical factors include communication, internal and external quality audits, people involvement, employee training, customer quality

oriented culture, systematic approach to management, producing quality goods and services. These factors have to be implemented to meet the ISO 9000 standards requirement and also helps the organization to achieve results, monitor and measuring the system. This also correct and prevent problems by improving performance. Therefore, the ten key successful factors were analysed.

Question 4: ISO 9000 quality objectives are communicated to every employee at RSSC

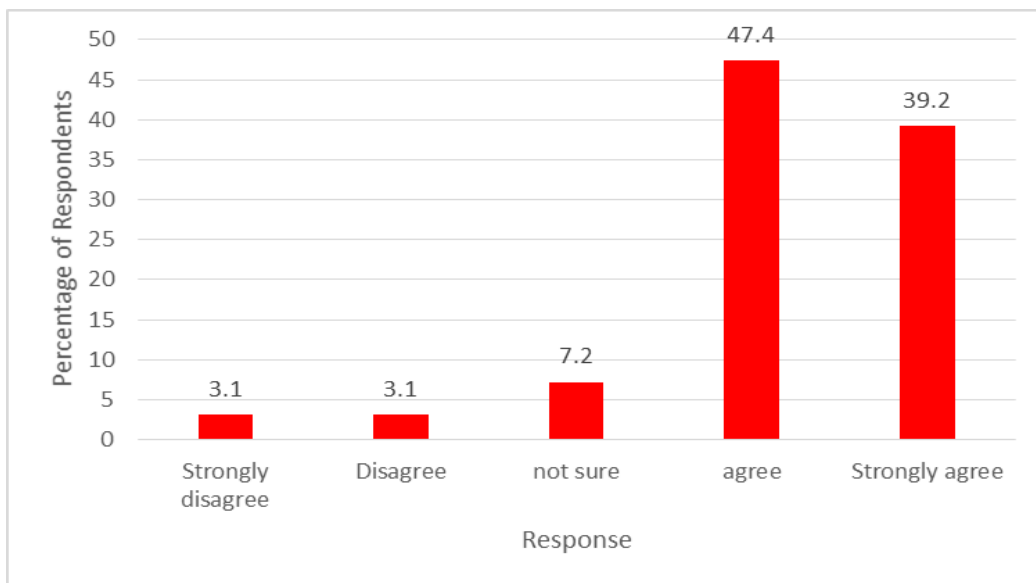


Figure 4.12: Communication of ISO 9001 Quality objectives to every RSSC employee

Question 4 of the study focused on the communication of the ISO 9001 to every employee in RSSC to promote the quality culture awareness. The results are very encouraging because it shows that 47.4% agree and 39.2 % strongly agree with the statement. Only 7.2 % are not sure and 6.2% disagree with the statement.

Question 5: Individual effort is recognized in delivering quality product and service at RSSC

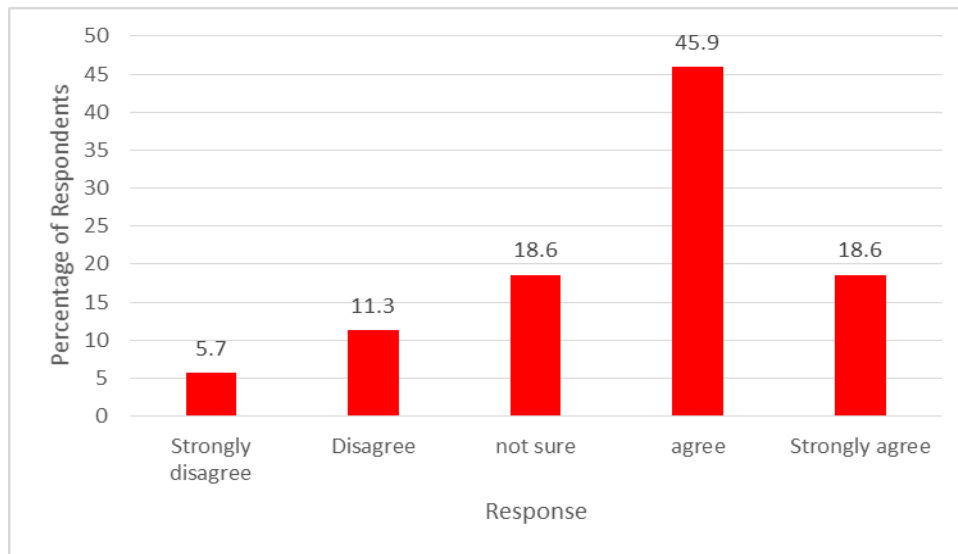


Figure 4.13: Recognition of individual efforts in delivery of quality products and service

Question 5 of the study focused on the individual effort recognition in delivering quality product and service at RSSC to promote quality culture. The results were very encouraging because it shows that 45.9% agree and 18.6 % strongly agree with the statement. Only 18.6 % were not sure and 17% disagree with the statement.

Question 6: Employees are encouraged to give suggestions for process improvement at RSSC

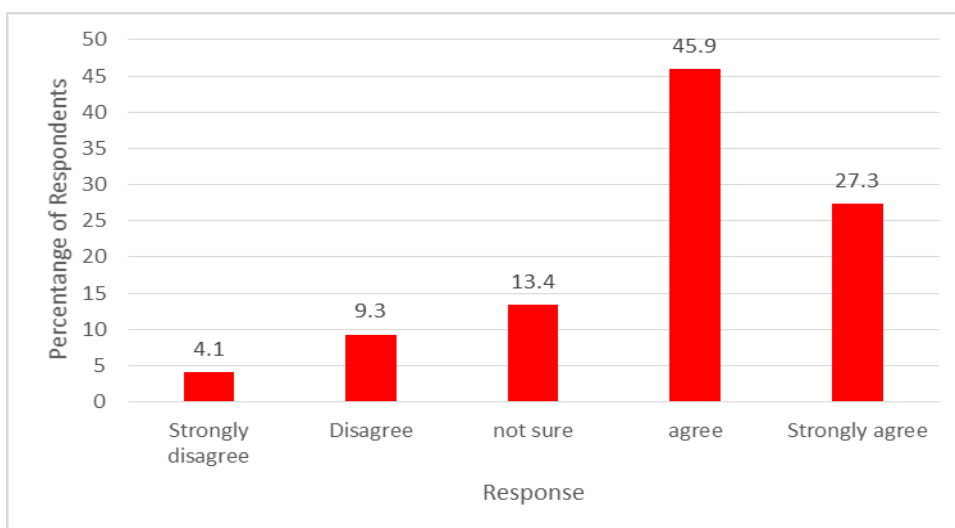


Figure 4.14: Employees are encouraged to give suggestions for process improvement at RSSC

Question 6 of the study focused on the employees' job satisfaction by encouraging them to positively contribute or become innovative improve processes at RSSC. The results were very encouraging because it shows that 45.9% agree and 27.3 % strongly agree with the statement. Only 13.4% were not sure and 13.4% disagree with the statement.

Question 7: Everyone in my department have adequate ISO 9000 knowledge

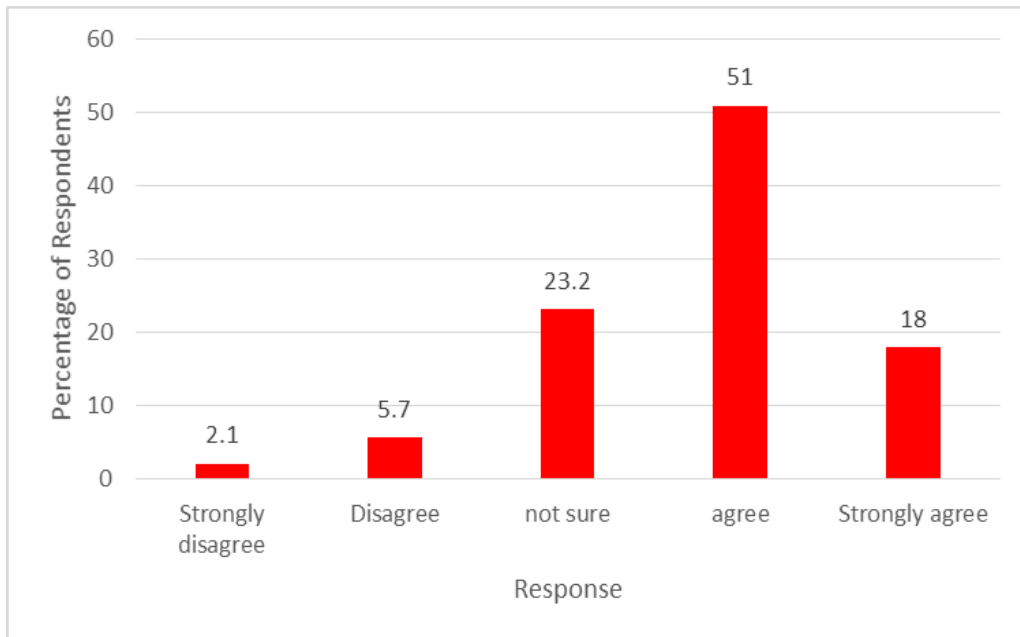


Figure 4.15 : Everyone in my department have adequate ISO 9000 knowledge

Question 7 of the study focused on the employee's knowledge on the ISO 9000 system which enables them to implement or drive the quality system. The results were very encouraging because it shows that 51% agree and 18 % strongly agree with the statement. Only 23.2 % were not sure and 7.7% disagree with the statement.

Question 8: Management encourages and recognise team- work effort at RSSC

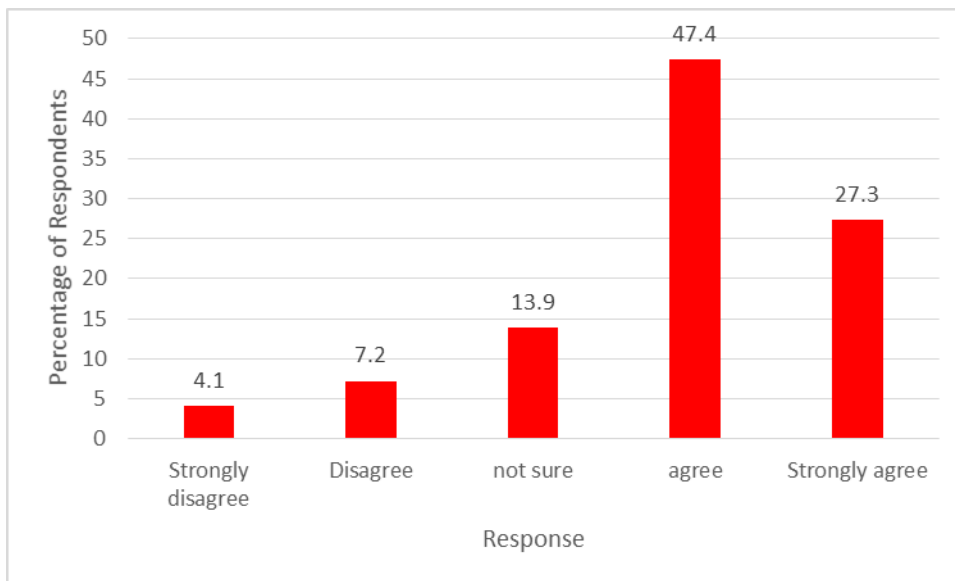


Figure 4.16: Management encourages and recognise team- work effort at RSSC

Question 8 of the study focused on the Management encouraging and recognise team-work effort to encourage teamwork and group trouble shooting. The results were very encouraging because it shows that 47.4% agree and 27.3% strongly agree with the statement. Only 13.9 % were not sure and 11.3% disagree with the statement.

Question 9: Management commitment to ISO 9000 quality system encourages effective operations at RSSC

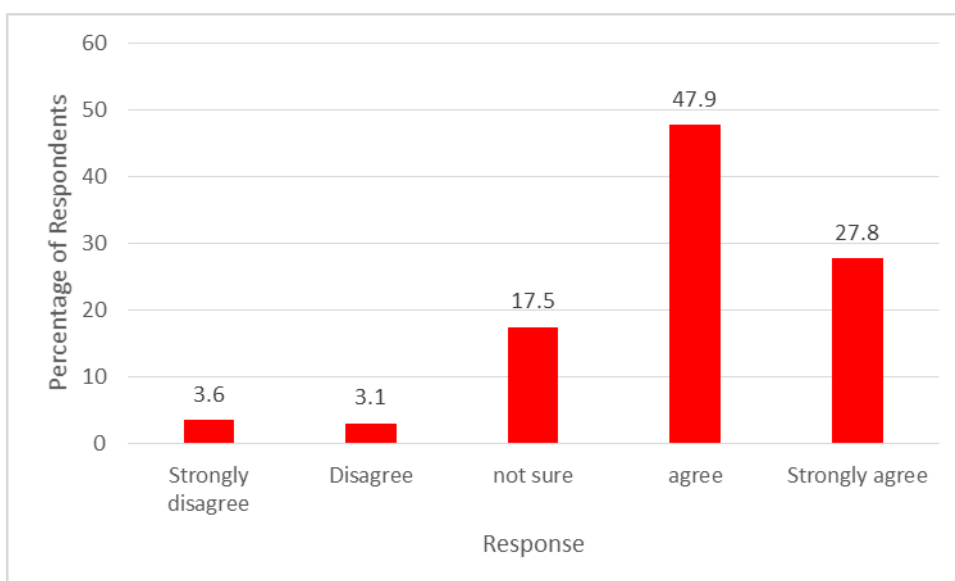


Figure 4.17: Management commitment to ISO 9000 system

Question 9 of the study focused on the Management encouraging and recognise team-work effort to encourage teamwork and group trouble shooting. The results were very encouraging because it shows that 47.9% agree and 27.8% strongly agree with the statement. Only 17.5% were not sure and 6.7% disagree with the statement.

Question 10: Work procedures are used as operating guide at RSSC

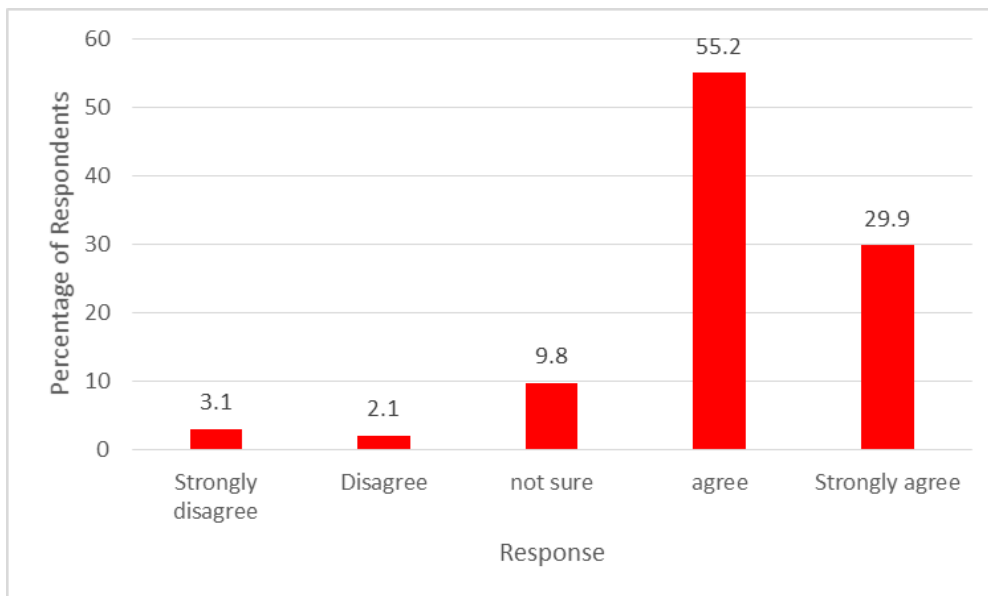


Figure 4.18 : Work procedures are used as operating guides at RSSC

Question 10 of the study focused on the use of standard operation procedure as a guide for the employees. The results were very encouraging because it shows that 55.2% agree and 29.9% strongly agree with the statement. Only 9.8 % were not sure and 5.2% disagree with the statement.

Question 11: Management communicate customer complains if there are any to the relevant departments at RSSC

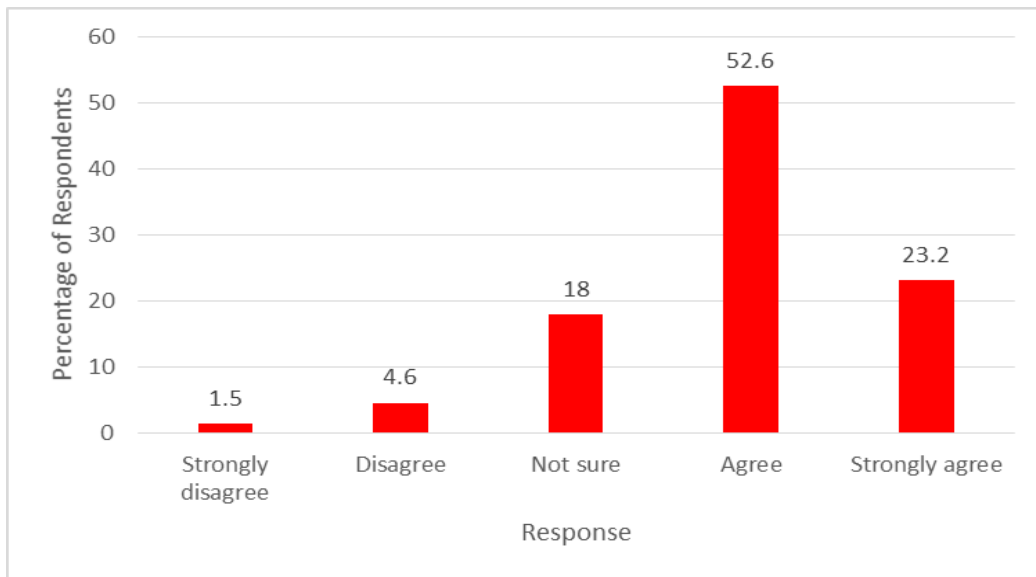


Figure 4.19: Management communicate customer complains if there are any to the relevant departments at RSSC

Question 11 of the study focused on the management communication of the customer complains. The results were very encouraging because it shows that 52.6% agree and 23.2% strongly agree with the statement. Only 18 % were not sure and 6.2% disagree with the statement.

Question 12: IMS raises non-conformity whenever product or service does not meet quality specification at RSSC

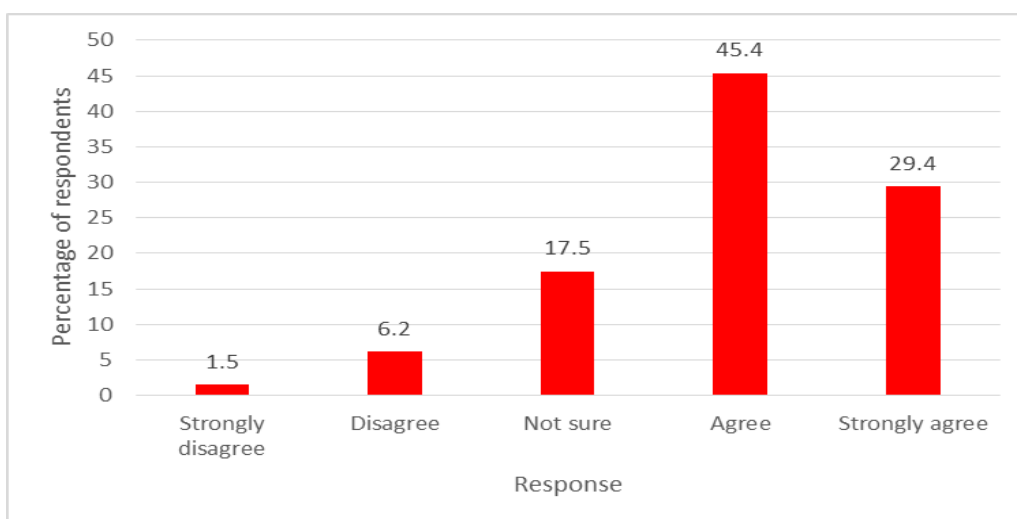


Figure 4.20: IMS raises non-conformity whenever product or service does not meet quality specification at RSSC

Question 12 of the study focused on monitoring and feedback loop of the ISO 9000 quality systems by analysing the frequency on which the Safety management (Integrated Management System, IMS), raises the non-conformity report. The results were very encouraging because it shows that 45.4% agree and 29.4% strongly agree with the statement. Only 17.5% were not sure and 7.7% disagree with the statement.

Question 13: Internal and external ISO 9000 quality surveys are conducted regular at RSSC

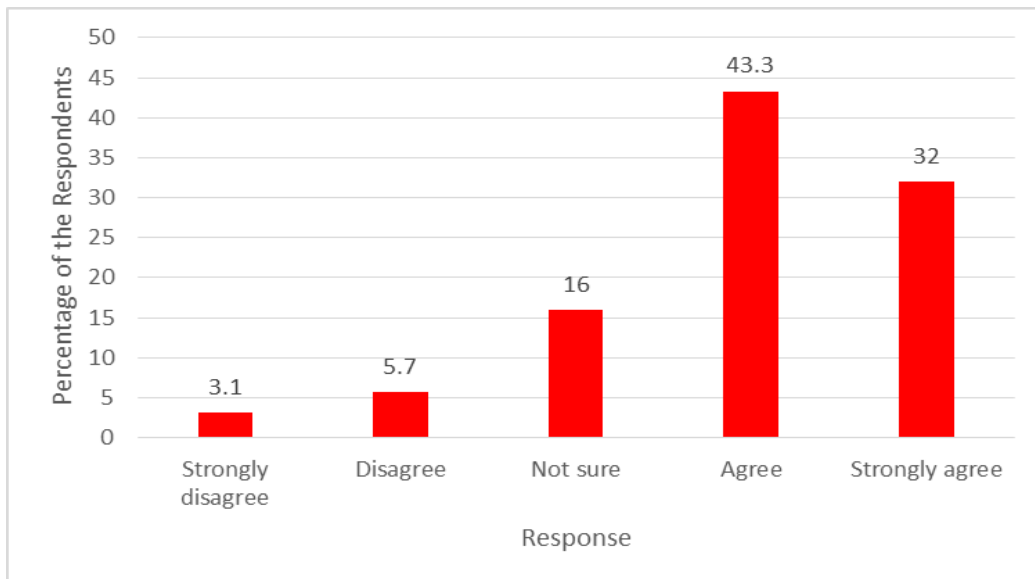


Figure 4.21: Internal and external ISO 9000 quality surveys are conducted regular at RSSC

Question 13 of the study focused on the management of the ISO 9000 system by conducting regular internal and external audits for continuous improvements. The results were very encouraging because it shows that 43.3% agree and 32% strongly agree with the statement. Only 16 % were not sure and 8.8% disagree with the statement.

4.6 Extent to which ISO 9000 quality Management system improves customer’s satisfaction

This section sought to establish if RSSC meet the internal and external customer satisfaction because ISO 9000 priority or standard requirements was to satisfy the customer needs. Customer satisfaction is a key element for business to survive because customers’ demands have increased and would become loyal to quality

products and services. Therefore, the key customer services were analysed based on secondary data obtained from longitudinal surveys.

4.6.1 Internal customers

The mills in the factories (both Simunye and Mhlume) have a target of 50% moisture bagasse to supply into the boiler house, because the higher the baggase moisture the higher the fuel consumption in the boilers. The quality of baggase supplied to the boilers have to be controlled in the milling house.

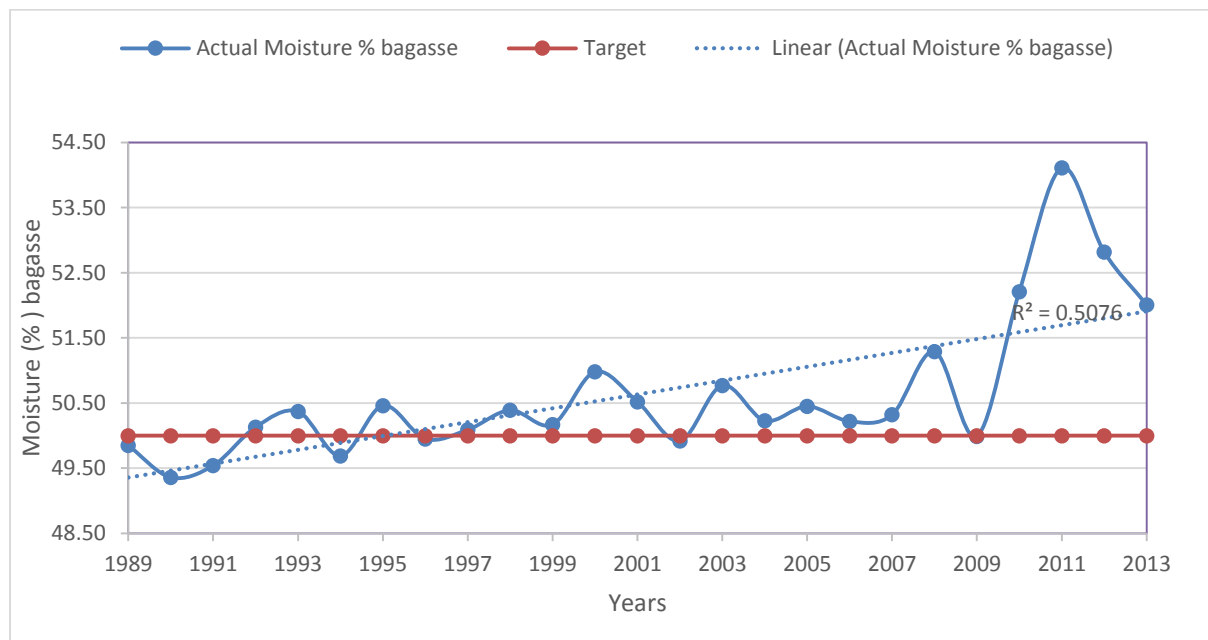


Figure 4.22: Showing moisture % bagasse that mill house supplies to boilers in Mhlume Factory

From the graph the bagasse moisture yearly average values were plotted over a period of 24 years. The coefficient of determination is 50.76%, the years after the ISO implementation has a moderate impact on the continuously increments of the moisture percentage in bagasse. This shows lack of process control to satisfy internal customers because the above 50 % was not desired by the boiler house. This increases the fuels consumption and preferable the moisture must be below 50%.

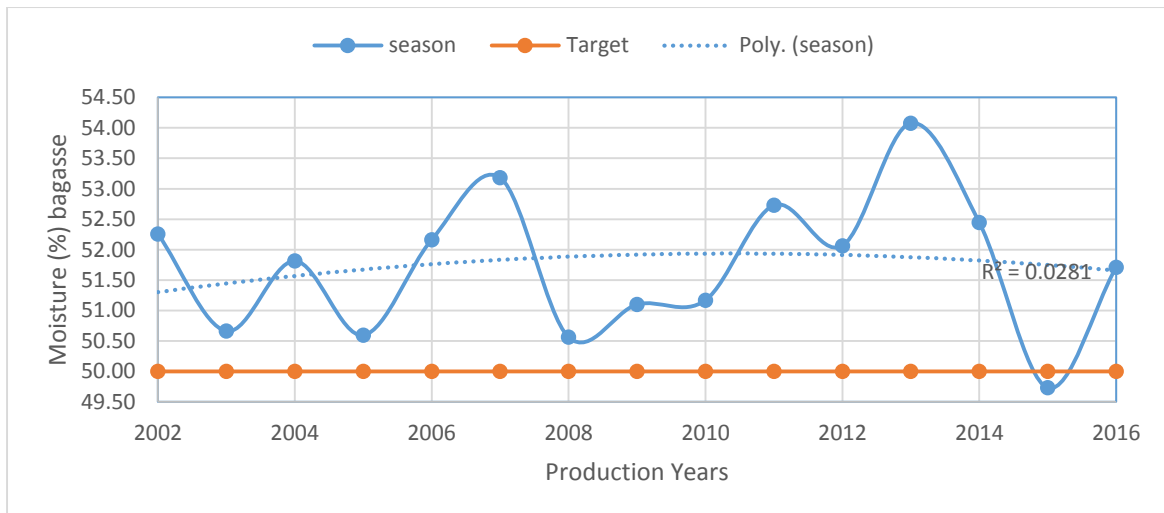


Figure 4.23: Showing Simunye sugar mill moisture % bagasse

From the data above it demonstrate similar trends to the Mhlume mill, the moisture in the bagasse increasing. The coefficient of determination is 2.81%, hence showing no correlation between the moisture % bagasse and the years after the ISO implementation. This shows lack of process control to satisfy internal customers because the above 50 % was not desired by the boiler house. This increases the fuels consumption and preferable the moisture must be below 50%.

4.6.2 External customers

4.6.2.1 Mhlume Factory Product quality

Table 4.3: Showing Mhlume Refinery sugar specification prior to ISO systems Implementation

Refined sugar	1998	1999	2000	2001	2002
Colour	62	57	44	46	43
moisture %	0.05	0.04	0.04	0.03	0.03
Pol %	99.9	99.95	99.95	99.9	99.93

The findings shows that there were no fixed targets prior to the ISO 9000 standard.

Table 4.4: Showing Mhlume Refinery sugar specification After the ISO systems Implementation

Refined sugar	Target	2004	2005	2006	2007	2008
Colour	45	36	36	43	28.92	38.94
moisture %	0.02	0.02	0.02	0.02	0.02	0.02
Pol %	99.99	99.96	99.98	99.98	99.99	99.99

After the implementation of the ISO 9000, a target was set as per customer requirements and table shows that the refinery has achieved consistence on the moisture and Pol%.

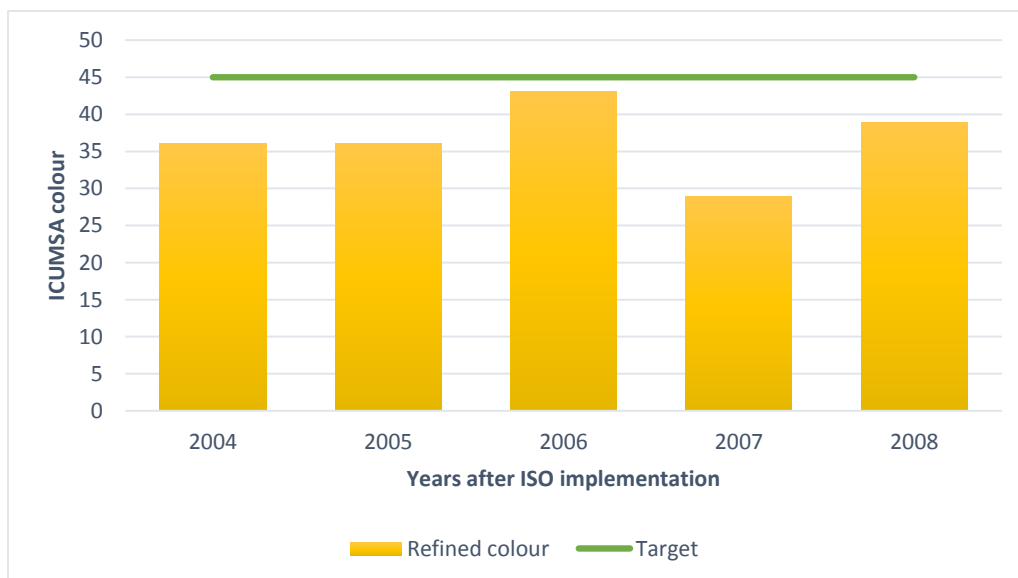


Figure 4.24 : Illustrate the comparison between the Actual Refined sugar colour vs the target

From the above graph it shows that the refinery has not achieved the set target colour and this was a negative impact on the production because the sucrose was lost as the sugar is washed more. Although there was loss in the factory recoveries, the product was below the target which meets the customers need.

4.6.2.2 Simunye Factory Product quality

Table 4.5: Showing VHP Sugar specifications after the ISO 9000 implementation

VHP Sugar	Target	2010	2011	2012	2013	2014	2015	2016
Colour (ICUMSA)	1350	1118	1123	1165	1175	1101	1160	1245
Moisture %	0.1	0.10	0.09	0.10	0.09	0.09	0.08	0.08
Pol %	99.3	99.31	99.35	99.33	99.38	99.35	99.40	99.38

From the graph above the sugar quality has being consistency throughout the years, this proves that RSSC was meeting the ISO system priority objective.

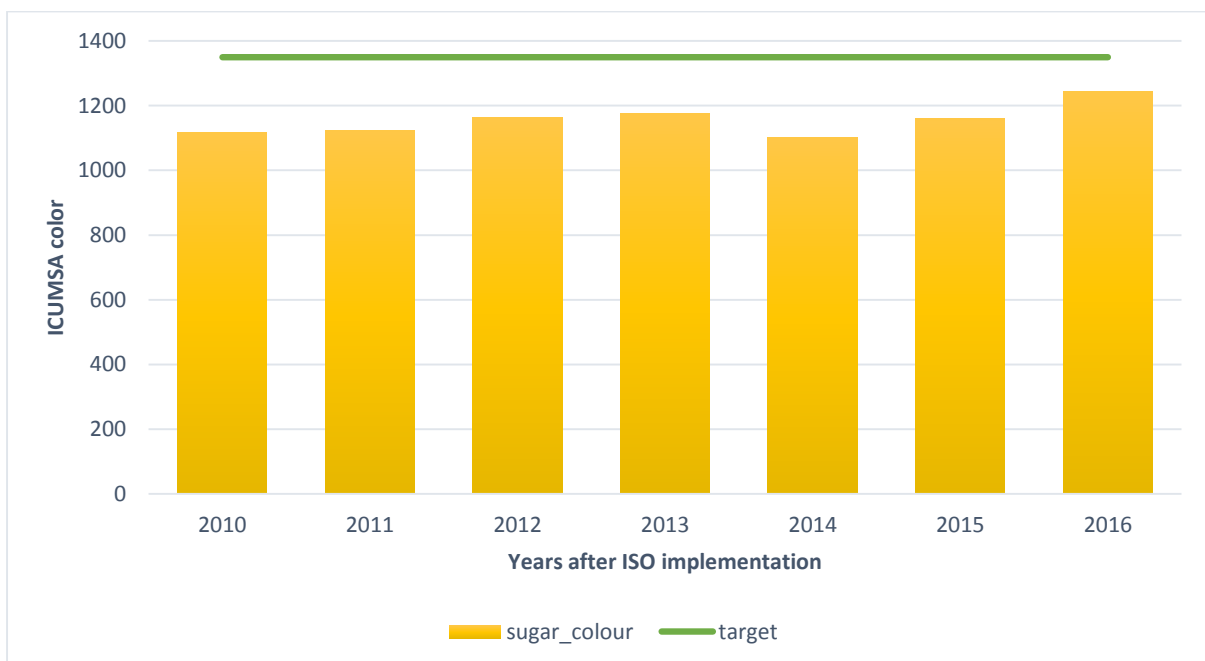


Figure 4.25 : Illustrate the comparison between the Actual VHP sugar colour vs the Target

From the above graph it shows that the factory was producing VHP sugar below the target colour. Although it has a negative impact on the production recovers the product was meeting the customers need.

4.6.3 Secondary data from longitudinal customer surveys

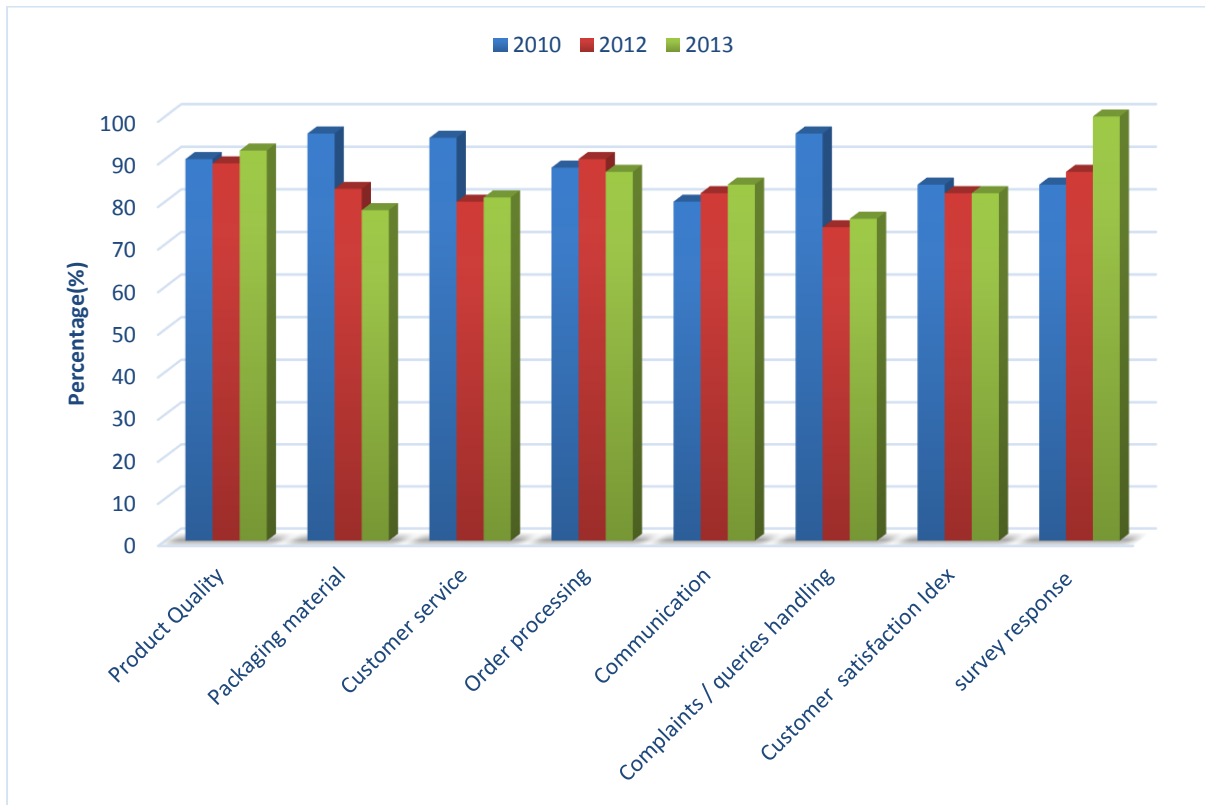


Figure 4.26 : Showing Customer Response to the SSA survey for the Sugar Factories (Both Simunye and Mhlume)

Customer satisfying survey only commenced in 2010 and was only conducted again in 2012 and 2013. This was after the implementation of ISO 9000 in 2003. From the above results it shows that the product quality, order processing and customer satisfaction has not changed over the 3 years' period. The packaging material quality is decreasing, the customer service and customer complain has decreased significant between 2010 and 2012. Communication has improved slightly and the survey response is increasing.

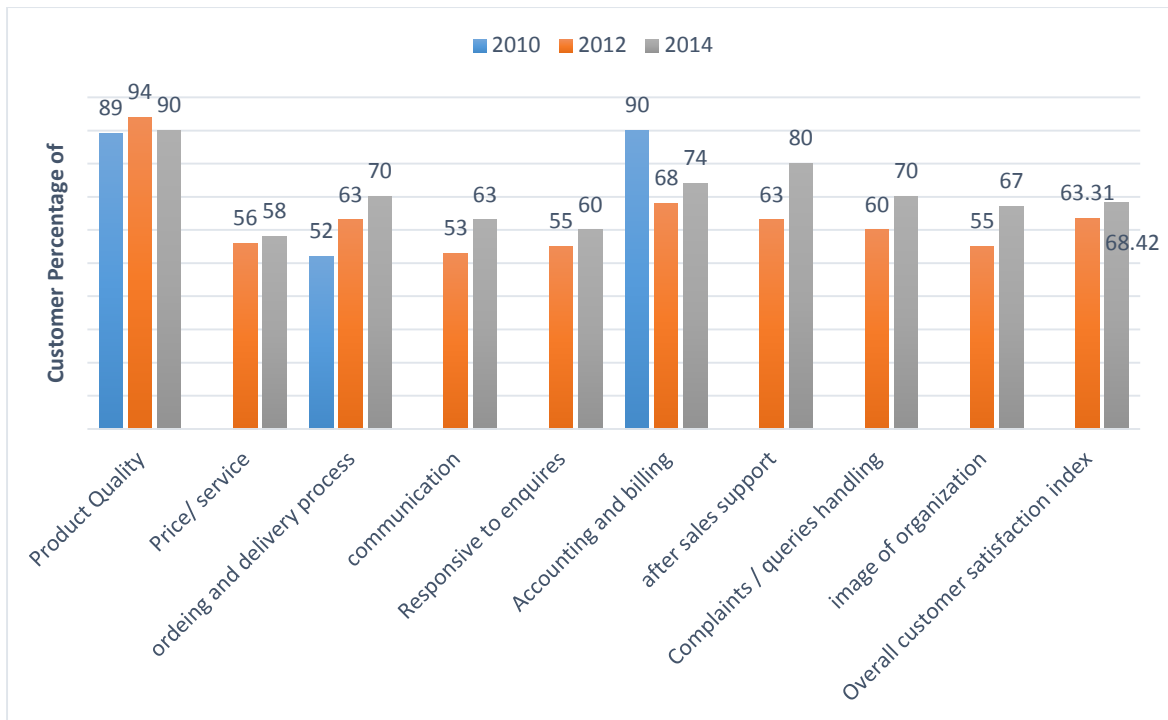


Figure 2.27: Showing Customer Response to the Ethanol survey for the Distillery

Customer satisfying survey only commenced in 2010 and was only conducted again in 2012 and 2014. This was after the implementation of ISO 9000 in 2003. The survey for 2010 was only based on the product quality, ordering and delivery process and also the accounting and billing. This data was not used for comparing purposes. From the above results it shows that the product quality and price/ service has not changed. The order and delivery process, communication, response to enquiries, accounting and billing, after sales support and the image of the organization has improved. There was a slightly improvement on the overall customer satisfaction index.

4.7 Conclusion

The results were presented in this chapter, under the themes namely: sample characters, benefits of ISO 9000 quality system, factors that influence successful implementation of ISO 9000 and the extent to which ISO 9000 improves customer satisfaction. In each section the detailed analysis was conducted. The following chapter would be presenting the conclusion and recommendations of the study.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 INTRODUCTION

The previous chapter presented the results and interpretation of the study. The aim of this chapter was to discuss the results in detail and also compare with the literature review of this study. This chapter also outlines the findings from the literature review and the primary study findings per the research objective.

5.2 Discussions on the Biographical data

There was 69.78% response rate from the RSSC employees and majority was from the operators, artisans and others. The majority of the RSSC factory employees (89.2%) falls under the age of 50 and the contribution factor might be high staff turnover rate due to job dissatisfaction and getting lucrative job offers.

There were few responses from management who were responsible for implementing the quality culture at RSSC and also providing necessary training as Dowlatshahi (2011), emphasized on the management commitment as a crucial aspect of the system. The contributing factor can be due to lack of employee satisfaction; although the organization has ISO 9000 quality in place which includes the resources management as part of the framework, the human resource department or the organization is not aligning with the employees' requirements.

On the staff tenure, only 18% have worked in the company for more than 20 years. This contributes to lack of skills in the organization to be passed onto the new employees because 60.5% have an experience below 10 years' experience. Vidosav et al. (2015), findings showed that for an organization to sustain exceptional high quality levels, it requires to use best talent and abilities by creating a satisfaction partnership with the employees. This is achievable by retention of talent and experience.

5.3 Objective one: To assess the benefits of quality management ISO 9000

5.2.1 Findings from the literature review

In chapter two, literature review findings show that companies could fully benefit from the implementation of quality system ISO 9000; the initial step was for the organization to fully understand the ISO9000 requirements and also having an internal authentic

motivation. This would ensure that a quality culture was established which would lead to high benefits which include:

- ✓ Improving of the operation performance which were operations and mechanical efficiencies, through non-conformance as a quality control system. There would be reduction of costs in terms of less rework, less products that were out of specifications and reduced factory down time.
- ✓ effective leadership style which promotes teamwork, innovation, training and communication which leads to employee satisfaction and commitments

Furthermore, the impact of the internal motivation complements the external motivations which includes increase in market share by acquiring new customers and business opportunity both local and international. This was due to the organization meeting the customers' needs, both internal (employees) and external (consumers) which improves company image, service delivery and reduction in customer complains. The literature further emphasized that by achieving the certification it does not mean the organization would automatically gain the benefits.

The downfall of the quality system can be experienced when companies implement the system as a marketing tool (external motivations only) and tend not to gain any benefits due to increasing bureaucracy in terms of high volume documentation. The company culture was not quality oriented which leads to poor employee commitment and hinders creativity because the employees tend to follow the documentation only.

5.2.2 Findings from the study

From objective one of the study it shows that RSSC had not yet achieved the benefits of the system because of as;

- ✓ There was high staff turnover in the organization due to lack of commitment and job satisfaction and employees above 50 years of age contribute to 11.7% of the work labour. Employees of this age normally would stay in the company due to satisfaction not for earning.
- ✓ The majority of employees who responded to the survey was 46.3% which were seasonal workers, under the category of others in the questioners. Seasonal employees do not have job security which attributes to lack of job commitment and satisfaction; hence contributing to poor performance. This

was evident because majority of the current employees (37.7 %) have been with the company for less than 5 years.

- ✓ Lack of skills and experienced employees lead to high inefficiencies because the work would be redone several times as employees lacked experience. The mechanical and operational actual stops were 200% higher than the actual schedule stop and the overall efficiency of Mhlume factory has decreased by 9.2%
- ✓ From the secondary data, the performance parameters are not statistically controlled and after 5 years' period implementation of the ISO 9000 became a challenge. This shows poor alignment between the organizational culture and the ISO 9000 quality culture
- ✓ The ISO 9000 was first implemented by the SSA which is the marketing wing of RSSC and the factories adopted later.

5.2.3 Discussion on Objective one

The overall Mhlume factory showed a weaker correlation of 11 % of the organizational performance. According to Chatzoglou et al. (2015) findings there was a 71% in the organizational performance after the ISO quality implementation. As per the ISO 9000 principle the factory efficiencies were supposed to increase due to preventative maintenance because of the non -conformity report.

The contribution factor was due to lack of strong quality culture in RSSC, likewise Saad and Asaad (2015), studies show that there can be a conflict between established organizational culture that hinders the implementation of the ISO 9000 system which includes operation, behaviour and lack of commitment. The Mhlume factory LTA, prior to the implementation of ISO QMS was achieved less than 10 %, but afterwards it was above 20%. The contribution factor might be due to poor implementation of the ISO system implementation plan. Alic (2014) findings show that if the implementation plan was poor, it can lead to increasing bureaucracy which decrease employee moral because of the increased volume of documentation.

This also lead to management to follow the new guidelines and regulation of the system which results in not improving internal and external practises. Hence the system became an ineffective tool instead of being a continuous improvement tool. Likewise Thou (2013), and Boiral (2012), also opined that ISO 9000 can hinder

opportunities because the working environment becomes very scientific since everyone follows standard working procedures. There is no room for creativity which leads further to high turnover resulting in skills shortage.

Furthermore, Ming Ong et al. (2015), studies showed that although the working procedure can be implemented and every documentation as per the ISO 9000 requirements, this would not be effective if the employee have negative beliefs and perceptions about the system. He stressed in the changing of the organizational culture. This can also be due to the scientific working environment which everything was documented and the employees are no longer creative since innovation is being hindered.

Although RSSC has every documentation as per the ISO 9000 standard requirements, hence the findings were similar to the Harar brewery in Ethiopia, a study by Beshah et al 2013, which showed that although the company was awarded for the best ISO quality system implementation but the process was not statistical controlled. Therefore, there was no significant improvements due to the ISO system implementation. The contribution factor can be lack of commitment from senior management to change the organizational culture into quality culture.

5.3 Objective two: To establish the factors that affect successful implementation of Quality management ISO 9000

5.3.1 Findings from the literature review

In chapter two, the literature reviewed revealed that the successful critical factors that influence the implementation of the ISO 9000 was to overcome the major obstacles which include organizational culture and attitudes. The key priority factor identified in the literature which could overcome the obstacles was management commitment because these drive the implementation through; leadership and management, communication, changing working culture to quality culture, provide training and empowering employee. The organizations require to identify their key factors according to the organizational context during the development of the ISO 9000 framework to yield favourable performance. The ISO 9000 framework differs from each organization due to different working cultures and environment, hence failure to

identify results in poor implementation of the system. The critical factors were the motivation factors which are measurable through performance indicators.

5.3.2 Findings from the study

The findings from the study revealed that

- ✓ ISO9000 quality objectives were communicated to every RSSC employee ensuring t adequate knowledge on ISO 9000 to majority of the employees
- ✓ Individual effort was recognized for delivering product quality
- ✓ management played a key role towards encouraging employees to give suggestions for process improvement
- ✓ management encouraged and recognised team work efforts
- ✓ management was fully behind ISO 9000 quality systems as they were committed to ensuring its effectiveness.
- ✓ Employees acknowledged that work procedures were used as operating guidelines at RSSC
- ✓ Management also played a key role in communicating customer complains
- ✓ internal and external audits were conducted regularly at RSSC

5.2.3 Discussion on Objective two

The results in this objective shows that RSSC management followed the generic key critical factors for successful implementation of the system. All responses on every questions revealed very low percentages of respondents who disagreed or not being sure. The analysis showed that there was management commitment in driving the quality culture awareness, as Magda and Nabulsib (20112) emphasized that senior management should always show commitment towards encouraging employee involvement in the implementation of ISO 9000 quality systems.

Likewise, Kafetzopoulos et al. (2014) ,Psomas and Kafetzopoulos (2014) and Kim et al. (2011) findings showed that an organization can successfully implement ISO QMS if the critical factors are embraced and also implemented as per the organization specific contest.

5.4 Objective three: To establish the extent to which implementation of quality management ISO 9000 at Royal Swaziland Sugar Corporation improves customer satisfaction?

5.4.1 Findings from the literature review

The literature review, chapter two described customer satisfaction according to two concepts which are transaction- specific perspectives when a customer had a single encounter with the product or service or as cumulative perspectives, overall experience. The cumulative perspective is a priority in the ISO 9000 standard requirements because the organization has to ensure that the customer is satisfied. This creates a positive relationship between the employees, customers and the organization which leads to customer loyalty and organization turn to increase the market share. Customers easily change suppliers if they are not satisfied with the quality of products and goods they are receiving. The ISO 9000 system provides the quality control tool which is a non-conformity report to address all the problems.

5.4.2 Findings from the study

From the study the secondary data was used from archived longitudinal surveys and business intelligent data and the following was revealed;

- ✓ Internal customers revealed that the bagasse moisture was not controlled and the trend showed increments over the years which were above the targeted value of 50%. Hence the quality control system and non-conformity system was ineffective;
- ✓ External customers revealed that the quality of the refinery and VHP sugar met the customers' specifications. The quality was stable and there was less customer complains.
- ✓ Both the distillery and Sugar factory surveys showed that customer audits were not done consistently and when compared with data, there were no significant differences from each year.
- ✓ The service delivery was effective because all the indicators for the sugar factory were above 70% while the distillery stood at 60%.
- ✓ Customer satisfaction index stood at 80% for the mills and 60% for the Distillery

5.2.3 Discussion on Objective three

The moisture % bagasses for both mills results after ISO QMS implementation were above the target of 50% and the contribution factor can be as Honore et al. (2011) stated that it was crucial for the organization to develop a specific quality system derived from the ISO standards to be able to achieve a sustainable result although using the applicable regulatory requirements.

The customers' requirements were met and this could have been possible because RSSC implemented the system due to external motivation. Tzelepis et al. (2006) and Vilkas and Vaitkevicius (2013) findings showed that organizations embrace the quality assurance schemes due to environmental driving forces applied by business partners, supply chain systems, management and customers.

This prevents customers from cross-buying because RSSC products met the requirements. Moturi and Mbithi (2015) and Magd and Nabulsi (2012) findings showed that the implementation of ISO could satisfy customers requirements. Furthermore, Psomas and Kfetzopoulos (2014) emphasized that the system assists companies to continuously improve the quality of the service and goods which creates a long term benefits, due to customer retention and loyalty. Therefore, RSSC achieved the external benefits because it sells its sugar to the European market since the organization meets the regulations. Sampaio et al. (2009), indicated that the European companies forced their suppliers to be certified to be able to enter the European markets.

RSSC has also retained the market share and can still improve as Lafuente et al. (2010) indicated that retention and acquiring of customers is perceived that the firm can fulfil the customers' requirements. In support, Oliver (2010) emphasized that quality customer service was crucial because they discuss with ten people if it was a bad experience which can damage the company image and only share with five people if it was a good experience.

5.5 Conclusion

The results were discussed in this chapter. The finds per objective and the literature review was discussed in detail. In each section the detailed analysis was conducted. The following chapter presents the summary, conclusion and recommendations of the study.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

6.1 Introduction

To achieve the main objectives of the research, the final chapter would conclude and make recommendations from the study. This final chapter includes the outcomes from the research and also concludes from both the primary study and the literature review. Recommendations are also made on how management can implement an effective ISO 9000 quality system and also a scope for further research.

6.2 Summary of the Study

The study was conducted in RSSC manufacturing department which includes both Sugar factories namely Mhlume and Simunye. The Distillery is part of the Simunye Factory. The results show that RSSC has implemented the ISO 9000 quality system due to external motivation, meaning customer demands. RSSC main customers are European. The organization has not benefited any improvement performance although it has implemented all the principle as per the ISO requirements.

6.3 Conclusions of the study

6.3.1 Based on objective one

The evidence on the study shows that RSSC implemented ISO9000 due to external motivation and this lead to poor organizational quality culture after the implementation. This lead to production performance decreasing and increasing of downtime due to high inefficiencies in both operation and mechanical stops. An inability to establish an effective quality culture by reviewing the standard requirements is likely to lead to further staff turnover and poor performance.

6.3.2 Based on objective two

The findings illustrate that RSSC has implemented the generic critical factors and that all show a positive trend because the response were above ranging above 50%. There was still room for improvement with the employees which were not sure and those who disagree. An inability to establish the RSSC critical factors by reviewing the standard requirements and organizational context was likely to lead to further poor performance results. The quality culture would remain a paper excise and yield no positive performance results.

6.3.3 Based on objective three

It was evident that the internal customers were not satisfied and cannot switch suppliers because it's one company. The external customers' needs cannot be evaluated correctly due to the lack of information and the inconsistency of the longitudinal survey. Currently evident that the documentation was done as per the standard but the operating parameters were not meet which proves that the system has become an effective tool for recording purposes. The employees were not motivated and innovative at the current working condition.

6.4 Implications of the Study

RSSC has to implement ISO 9000 quality management systems in the organizational context culture to gain the benefits both internal and external. The company can gain return on investment for this costly certification because currently there was huge expenses due to documentation, re-auditing and high non-productive time consuming. For example, employees do the documentation to comply and waste a lot of time holding meetings.

6.5 Recommendations

6.5.1 Based on objective one

RSSC should conduct internal surveys and open forums with the employees to review the documentation of the ISO 9000 requirements. This would assist to identify and debottleneck the problematic errors and address them because the non-conformance system was not sufficient to address the quality problem. The organization can use assistant of employees who were there prior to the ISO 9000 implementation to get information on how the high performance figures were obtained. The organization can also consider on conducting 360 degrees' survey to understand the level of bureaucracy in the company to reduce staff turnover. The company can further engage a dependent consultant to re-evaluate the ISO 9000 quality system to audit the benefits.

6.5.2 Recommendations based on objective two

Management should review its key critical influencing factors for the success implementation of the ISO 9000 in the RSSC organizational context; because although the key critical factors are positive but the organizational performance was still negative.

6.5.3 Recommendations based on objective three

Management to review the effectiveness of the non- conformance report and engage the employees on how to improve the process control. Both internal and external customers' requirements need to be meet by conducting regular internal and external surveys.

6.6 Management recommendations to improve the quality ISO 9000 at Royal Swaziland Sugar Corporation

RSSC senior management should drive the quality culture by reducing the bureaucracy through the documentation system and also identify the key critical factors that are applicable to the RSSC working culture environment. The ISO system standards should be used as a guiding documentation and RSSC have to adopt the specific culture that would motivate the employees to realise the benefits of the system. This can be achievable by conducting working forum where the employees can express their feelings and attitudes about the system, they can also suggest solutions to the current situation. A further research is required on the process control parameters to determine if the ISO standards can rectify these problems.

6.7 Theoretical contribution of the study

The theoretical contributions for this study assists policy makers to reevaluate the ISO 9000 and understand the relevance with the current world economic status. Managers will also be in a position to assess their production costs including the quality costs and the relevance in the market price and share. Employees to understand the purpose of the QMS and how to implement to fit the working culture.

6.8 Scope for further research

The study on RSSC would not be considered adequate and exhaustive. There is therefore need to conduct a similar study in other sugar companies or other companies that use ISO systems as a quality management system in order to have a balanced view.

6.9 Conclusion

The purpose of the study was to evaluate the implementation of quality management systems ISO 9000 in the manufacturing sector in order to gain an insight as to whether the quality management system was being correctly implemented as it is a

requirement in the contemporary manufacturing industry. The researcher believes that the purpose as well as the research objectives were achieved through the proposed recommendations. Despite successfully achieving the purpose and objectives, the study merely provided the basis for sustained and continuous implementation of ISO 9000 quality management systems. Hence, the need to re-think and recast a similar study towards developing a scientifically sound ISO 9000 quality management framework for manufacturing sector with particular reference to the sugar production. In winding off, the chapter presented the conclusions and recommendations in line with the study objectives and based on the literature findings and conclusions, it is clear that the study objectives one again, may have been successfully achieved.

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APPENDICES

APPENDIX 1: ETHICAL CLEARANCE APPROVAL LETTER

APPENDIX 2: RSSC APPROVAL LETTER

APPENDIX 3A: QUESTIONNAIRE

English Questionnaire

Section A Biographical data					
1. Age					
21-30					
31-40					
41-50					
50+					
2. What is your current position of employment at Royal Swaziland Sugar Corporation?					
Operator					
Artisan					
Shift leader					
Manager					
Other					
3. How long have you been working for Royal Swaziland Sugar Corporation?					
1-5 years					
6-10 years					
11-20 years					
20+ years					
Section C: Factors that influence successful implementation of ISO 9000					
	Strongly disagree	Disagree	not sure	agree	strongly agree
	1	2	3	4	5
4.ISO 9001 quality objectives are communicated to every employee at RSSC					
5.Individual effort is recognized in delivering quality product and service at RSSC					
6.Employees are encouraged to give suggestions for process improvement at RSSC					
7. Everyone in my department have adequate ISO 9000 knowledge					
8. Management encourages and recognise team- work effort at RSSC					
9. Management commitment to ISO 9000 quality system encourages effective operations at RSSC					
10.work procedures are used as operating guide at RSSC					
11. Management communicate customer complains if there are any to the relevant departments at RSSC					
12. IMS raises non-conformity whenever product or service does not meet quality specification at RSSC					
13. Internal and external ISO 9000 quality surveys are conducted regular at RSSC					

Siswati Questionnaire (UMBUTO –Ngcogco)

Sigaba Sekucala (A) Ngemulandvo-buntfu wakho	
1. Iminyaka (budzala)	
21-30	
31-40	
41-50	
50+	
2. Yini sigaba sakho semsebente ne luhlobo lwawo enkabaneni lekhichita shukela ka Royal Swaziland Sugar Corporation?	
Operator/Mshinibhozi	
Artisan/ lisekela lanjinela	
Shift leader/ Indvuna	
Manager/ Meninjeli	
Other/ lulunye luhlobo ne sigaba lesingakabalwa lapha ngenhla	
3. Sewusebente sikhatsi lesingakanani enkabaneni lekhichita shukela ka Royal Swaziland Sugar Corporation?	
1-5 years/ Umnyaka munya kuya kulesihlanu	
6-10 years/ lesitfupha kuya kulelishumi	
11-20 years/ lelishumi namunye kuya kulengemashumi lamabili	
20+ years/ lengemashumi lamabili kuya etulu	

Sigaba C: Tintfo letenta loluhlobo lwe ISO 9000 lusebente ngemphumelelo					
	Angivumelani Kakhulu	Angivumi	Ngite Siceniseko	Ngiyavuma	Ngivumelani Kakhulu
	1	2	3	4	5
4. Tonkhe tisebenti tifundiswa kahle ngetinjongo taluluhlobo lwe ISO 9001					
5. Imishikashika yesisebenti ngasinye ngasinye yekusebenta ngekutikhandla kuze inkabane ikhichite imikhichito lesezingeni iyanxephetelwa					
6. Tisebenti tiyakhutsatwa kutsi tente tinxomo ekutfufukiseni indlela yemkhichito					
7. Sonkhe sisebenti etikweni langakami lunalo lwati lolwanele ngaluluhlo lwe ISO 9000					
8. Baholi benkapane ye RSSC bayakhutsata kusebentisana emkhatsini wetisebenti baphindze bakuncephelele					
9. Kutishisekela kwebaphatsi benkapane ye RSSC kululuhlo lwe ISO 9000 kwenyusa lizinga lemkhichito					
10. Imigomo yekusebenta isentjentiswa njengemivula yekukhichita enkapaneni ye RSSC					
11. Baphatsi benkapane bayatifikisa tikhalo netinxomo temakhasimende enkabane kuwo onkhe ematiko lafanele enkapaneni					
12. IMS iyakuveta kungagciliseki kwayo ngelizinga lemkhichito ngetimiso tenkapane ye RSSC nakukhukhona kungeneliseki ngemkhichito tsite					
13. Buhloli bangekhatsi nebangephandle bentiwa njalo njalo enkapaneni ye RSSC					

APPENDIX 3B: SECONDARY DATA SHEET

Section B: The benefit of ISO 9000 quality system - Organizational performance

SECTION B: The benefits of ISO 9000 quality system - Organizational performance										
Secondary Data collected from Cane & mill (Business intellegent system)										
	Target	Years prior to Iso system implementation					After ISO system implementation			
Perfomance figures										
Extraction										
Boiling house recovery										
overall recovery										
Down time (lost time oppurtunity)										
Fermentation efficiency										
Mechanical efficiency										
Distillation efficiency										
Overal efficiency										
LTA =100- Overall efficiency										

SECTION C: Extent to which ISO 9000 quality management system improves customer's satisfaction										
	Target	Years prior to Iso system implementation					After ISO system implementation			
Product Quality										
internal customers										
Baggase moisture										
External Customers										
Refined Sugar Mhlume										
Colour										
moisture %										
Pol %										
Simunye Sugar Quality										
VHP sugar- colour										
moisture %										
Pol %										

Secondary Data collected from past customer surveys (custmer focus)					
	After ISO system implementation				
Variables					
Product Quality					
Price/ service					
ordeing and delivery process					
communication					
Responsive to enquires					
Accounting and billing					
after sales support					
Complaints / queries handling					
image of organization					