

**QUALITY MANAGEMENT SYSTEMS AND PERFORMANCE OF  
ISO CERTIFIED MANUFACTURING FIRMS IN KENYA**

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## DECLARATION

I hereby declare that this research project is my original work and has not been presented in any other institution.

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This research project has been submitted for examination with my approval as the University supervisor.

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## **DEDICATION**

This research project is dedicated to everyone who supported me in the various stages of the research work.

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## **ABBREVIATIONS AND ACRONYMS**

<b>FP</b>	Firm Performance
<b>QMR</b>	Quality Management Representative
<b>QMS</b>	Quality Management Systems
<b>RBV</b>	Resource based view
<b>SPSS</b>	Statistical Package for Social Sciences

## **ABSTRACT**

In today's tough global market, good quality management is essential ensuring that the company remains competitive. Companies use quality goods and services to survive in a changing business environment. Kenya's manufacturing sector can become globally competitive and produce high quality products only by increasing productivity. A critical component to growing productivity is enhancing investments in technology activities at the level of a firm. The study's precise goals were to evaluate the degree to which quality management systems are implemented by ISO-certified manufacturing businesses in Kenya and to assess the impact of quality management systems on the performance of ISO-certified manufacturing firms in Kenya... Two theories guided this investigation: the resource-based view theory and the system view theory. Nairobi is home to 206 ISO-certified manufacturing companies. A total of 135 companies were included in the research, and the study's participants were operation managers. The research employed multiple linear regression and correlation analysis. ISO-certified manufacturing companies in Kenya have adopted a data management system that is improving to a modest degree. The success of a business is heavily influenced by the growth of its employees and the satisfaction of its clients. The research demonstrated a favorable association between quality management systems and performance. Overall company performance was influenced by the use of quality management procedures, suggesting that the approaches were successful in ensuring a company's existing operations were improved. ISO-certified manufacturing companies should have policies and processes that foster strong employee participation, understanding, and dedication to the company's vision, mission, and goals.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The growing rivalry in the business sector due to globalization, means that businesses have implemented world-wide recognized quality standards established by the ISO, which are intended to satisfy customers' expectations (Thuo 2013) (Paris). Quality management systems lead to reduced costs, wastage and rework while increasing productivity, efficient delivery of products and services and revenue (Nigel, Chambers & Johnson, 2007). When organizations adopt quality management systems, they attain a certification and are therefore said to have been certified by International Organizations for Standardization (ISO).

The research was directed by theories of the system and resource. System theory was developed in 1940 by biologist Ludwig (Von 1956). The idea says that an organization works as a system whose components (sub-systems) interact to convert different inputs from outside; this means that the organization interacts with the surrounding environment. On the other side, the Resource Based View (RBV) states that companies use resource capacities to achieve a competitive advantage. Holdford (2018) argues that companies may stay competitive in the changing business environment by utilizing their immaterial and physical resource.

The Kenyan industry is on a path of change in the Kenyan Government's structural reform in order to improve the economic and social environment of the nation (Oluoch, 2019). The Kenya Socio-economic Development Agenda aims to provide employment

for productive young people and a rich environment for attracting foreign direct investment (FDI), ultimately laying the groundwork for the achievement of the Millennium Development Goals (MDGs) (GOK, 2019).

### **1.1.1 Quality Management Systems**

Rules, methods, and procedures are required in the primary business sector of a firm to plan and conduct production/development/services in the most efficient manner (Beckmerhagen, Berg, Karapetrovic, & Willborn 2004). Quality Management System is a quality control system, standards, and efficiency necessary to achieve product quality (ISO, 2007). The implementation of the ISO 9001:2008 Quality Management System at the company has resulted in improved product and service quality and operational performance. Consumers really utilize a company's past quality standards to anticipate the future and/or current quality of goods and services. Businesses also evaluate their quality standards by engaging in frequent investigations into their manufacturing process by an impartial and officially recognized third party awarding an official certificate to the tested company or goods.

Organizations use quality management systems to enhance their management and to align their actions with process documentation, eliminating ambiguities and clarifying roles and responsibilities among workers. More significantly, the quality certification provides a preventative approach to quality management with an emphasis on bug avoidance (Gotzamani & Tsiotras, 2001). A decrease in customer dissatisfaction and defective items may be expected as a consequence of the deployment of a Quality Management System (QMS). A highly effective and efficient quality management system translates into

improved production, cheaper running costs, less waste and efficient delivery of products and services (Nigel, Stuart, & Robert, 2010).

ISO 9001 provides details of the necessities which organizations that desire to meet the standards have to fulfill. Additionally, it includes the seven management principles outlined in the ISO 9000 family of standards. An ISO certified organization is subject to regular on-site audit to determine whether procedures have been implemented, with emphasis on objective evidence (ISO Survey, 2016). The ISO 14000 provides standards for environmental management and guidelines for improvement of the environment. The ISO 14001 is the most significant standard in the series, because it specifies environmental management system criteria for big and small companies (ISO, 2016).

### **1.1.2 Organizational Performance**

Combining abilities, talents, and experiences to complete certain tasks within a predetermined time limit is the key to success (Katoh & Standley, 2013). Organizational performance is defined by Baker and Sinkula (2015) as the comparison of a company's accomplishments to its goals and objectives. Cascio (2018) defined organizational performance as comparing the organization's actual results or outcomes to its anticipated goals or aims. Komppula (2013) confirms that performance measures include profitability, return assets and return equity. Some performance indicators assist to assess the success of a business, including customer efficacy, market and financial performance, operational performance and innovation and the outside prospect.

The opinion of consumers in the balanced score card is how they perceive the business. Any profit generating company works only with one common goal in mind; providing its consumers optimum value. The top managers have generally a particular interest in the

customer's viewpoint, which requires that efforts be made to examine problems that consumers want (Han, Omta, & Trienekens, 2009). In general, customers care about quality, timing, performance, pricing and service. By considering performance and service metrics, consumers may find out whether the goods or services they provide really create value for customers. Financial and market performance are indicators of whether any progress is being made in the strategy, implementation and real execution. Financial and market prospects help managers to ensure short-term financial commitment and long-term commitments.

The operating viewpoint of the balanced score card examines how the main processes are performed, if they are efficient and successful in delivering the target customer value level. The operational viewpoint emphasizes the main sources that deliver customer value, procedures and how. Innovation determines if the company can expand its value. Innovation provides vital information about the company's capacity to provide value to its consumers, maintain operational efficiency and sell new products. Top managers may evaluate the value of the company from an operational and innovative point of view (Garza-Reyes, Kumar, Martinez-Covarrubias, & Lim, 2017).

### **1.1.3 ISO Certified Manufacturing Firms in Kenya**

There are both conventional and informal businesses operating in Kenya's manufacturing industry. The informal sector, small and medium enterprises and the large formal enterprises play a huge part in manufacturing (Were, 2016). In 2020 the manufacturing sector in Kenya expanded by 3.2% and 3.5% in 2019, contributing by 10.3% to the GDP (KNBS, 2019). But the manufacturing sector grew at a slower pace than the economy (Were, 2016).

The manufacturing sector's contribution of Kenya's GDP has been steadily dropping during the last several decades. Due to the collapse of current firms, COVID-19 is expected to exacerbate this tendency. There was a 3.2 percent drop in manufacturing output in Kenya's 2020 Q3 and 3.9 percent drop in 2020 Q2. This compares to 2.9 percent rise in 2020. A May 2020 KAM-KPMG poll found that 53% of the questioned firms were operating below 50% production capacity during the COVID-19 timeframe, showing that the industry has been impacted by the COVID-19 pandemic (KAM, 2021). There has been a substantial shift in ISO-certified manufacturing companies in recent years. As a means of establishing a quality system and laying a firm foundation for a management system, ISO certification has many advantages, including the ability to facilitate international trade by providing assurances of contract performance, international recognition and global uniformity, the ability to reduce or eliminate customer audits or surveys, the ability to enhance credibility, and the ability to improve documentation and traceability.

There are around 2000 small and medium-sized enterprises (SMEs) in Kenya, according to Kenya Vision 2030, which was released in 2007. The Kenya Manufacturers' Association has 853 members. Although the economy is diverse, food, beverage, and tobacco manufacturing, refined oil products, textiles and clothing comprise 50% of GDP, exports and 60% of formal jobs (KAM, 2019; KNBS, 2019). This diversification of the industry includes non-agricultural goods and agro-processing products. Non-agricultural goods include refined oil products, clothes and clothing, painting and painting, transport equipment, electric machinery, electro-polluting, material, paper and paper, pharmaceutical products and medicines as well as organic and non-organic chemicals,

pesticides and fertilizers. The agro-processing industry consist mostly of food processing, drinks and tobacco production goods.

An estimated 18% of Kenyan manufactured goods are exported (KAM, 2019). 6.1% of the goods are exported to the EAC and 12% to the rest of world (KNBS, 2020). The export products in Kenya are immensely primary. Of the total export value, tea alone constitutes about 25%. Kenyan exports are primary in nature and also low in technology component and aspect. Kenya's total manufactured exports are only destined to 12 countries globally with the country. Despite the decline and market loss, there is great potential to improve Kenya's competitiveness when it comes to exports by replacing external suppliers. Kenya is the second most preferred place in the world for multinational companies to expand their operations (2017). Globally, Kenya placed fifth behind a score of 24.69 percent in Saudi Arabia, Vietnam and Argentina 24.72% and 24.72%, respectively.

## **1.2 Research Problem**

In today's tough global market, good quality management is so essential to ensure that the company remains competitive. It is not possible to overestimate the basics of quality management systems since companies use quality goods and services to survive in a changing business environment. Although significant expenditures in quality management resources have been made in most countries, the connection between quality management and the generation of enterprise values is yet unknown. This is especially obvious in the less developed countries (Devaraj 2012). Due to the important advantages of implementing the system of quality management, many local companies are under pressure to adopt quality management systems.

Vision 2030 envisions a robust, competitive and diversified manufacturing sector that fosters industrialization of the economy. Given the forward and backward linkage that the sector has in the economy, its performance should be a major concern to government and sector's stakeholders (Kiveu, Namusonge, & Muathe, 2019). Stylized facts on Kenya's manufacturing sector indicates a steady decline in the sector's contribution to GDP and lower sector's employment. The Government initiatives aimed at improving the sectors performance has often been met with mixed results as the sector still grapple with dismal value added growth. Scholars and researchers have extensively acknowledged the role of innovation towards increasing productivity. Kenya's manufacturing sector can become globally competitive and produce high quality employment only by increasing productivity. A critical component to growing productivity is enhancing investments in technology activities at the level of a firm. However, the connection between technological activities and company productivity between developing nations in general, especially Kenya, is not well recognized (Odollo, 2019).

Quality and institutional system management ideas (Su, Dhanorkar and Linderman 2015), ISO certifications and business performance (Ullah and Wei&xi 2014), and competitive advantages for environmental and quality management were examined differently (Molina-Azorín et al. 2015). Quality management techniques have been linked to a company's financial success in another research (O'Neil, Sohal, and Teng 2016). (Kafetzopoulos, Psomas, & Gotzamani, 2015). Other study showed the Quality Certification ISO 9000 and its effect on innovation in products and processes (Terziovski & Guerrero, 2014). The financial effect of the ISO 9001 certification on companies was addressed by Aba, Badar and Hayden (2016). To bridge the gap between quality

management in Kenyan manufacturing enterprises and performance management in the sector, this study examines how Kenyan manufacturing businesses are managed.

Kenyan researchers examined if and how small and medium-sized businesses may benefit from using ISO quality management systems (Mwanaongoro & Guchu, 2012). Another research mainly focuses on quality management in Kenya's education institutions (Nyaoga et al., 2010). The research concentrated on various industries, which may thus limit generalization. Arumugam, Ooi & Fong (2008), and ISO 9001/2000 certification systems (Mensah and Julien 2011) link Australia and New Zealand to the United Kingdom via Malaysia and TQM, and corporate quality (Feng, Terziovski, & Samson, 2007). These studies focused on the quality management system, but none of them examined the production company. This study will thus attempt to address the gaps in research by answering one research question: How does quality management systems influence the success of manufacturing businesses in Kenya?

### **1.3 Research Objective**

The study's primary goal was to investigate the quality management systems and performance of ISO-certified Kenyan manufacturing companies. The following was a list of the main goals:

- i. The level to which ISO certified manufacturing enterprises in Kenya adopt quality management systems.
- ii. The purpose of this study is to determine the impact of quality management systems on the performance of Kenyan ISO-certified manufacturing businesses.

#### **1.4 Value of the study**

This research gives significance in theoretical fields. This research improved resources theory and systems theory from a theoretical point of view, especially in terms of quality certification, making them more acceptable. The results of the research were important and valuable for academics and scholars, since those who are interested in similar studies will discover references. This study was important for students and academics who want to do additional studies in this area. The ISO 9000 standards are global, and their implementation differs from country to economy.

This research assessed the various quality management methods used by Kenyan manufacturing companies and their effect on business performance. The results were also help other companies who pursue business excellence through quality management. The companies can grasp the idea of implementation and service delivery of quality management. By obtaining this knowledge, companies may adopt steps to help execute quality management.

The results of the research allowed the government and policymakers to develop and enact laws about quality and operational efficiency management systems. Policy development included improving resources and skills with regard to the environmental instability faced by organizations. For example, production companies may recruit people based on existing possibilities and risks and restructure resources according to those environmental change

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This section focuses on the research that has been gathered for certain research objectives. The part will also examine important theories and utilize them as a method to describe the connection between the dependent and the separate parameters in the conceptual framework. The chapter included the summary of the examined literature in order to identify knowledge gaps.

#### **2.2 Theoretical Foundation**

The research was based on the following theories: Theory of Systems and Theory of Resource-Based Views.

##### **2.2.1 Systems Theory**

A system comprises different parts that make one whole but the parts work together to achieve set objectives. The parts perform different tasks and are related to each other by the overall output that each individually contributes to the achievement of objectives. An organization acts as a system whose components (sub-systems) interact amongst themselves to transform various inputs from the outside; meaning the organization interacts with the environment that surrounds it. There exist both open and closed types of system (ZurMuehlen, 2004).

Quality management systems are anchored in the systems theory since each part or function of an organization is connected to the other. Quality systems seek to connect all

parts of the organization, though they may operate differently, for the common good and overall achievement of optimal goals (Oakland, 2003). The systems theory has relevance to the study since quality management systems on organizations, which are goal directed systems and achievements are through interactions with people and resources, all drawn from the environment. The contentment derived from the organization by the people who interact with it is relevant to the survival of the organization. The theory will explain the level of satisfaction by the customers who receive services from various organizations.

### **2.2.2 Resource Based View Theory**

At the outset, Barney proposed a comprehensive theoretical framework for the term "resource-based theory" (RBV), as stated by Newbert (2007), to clarify an understanding of the environment's effect on an organization in terms of performance. As Wernefelt (1984) explains, resources comprise organizational features, information, ability, assets and resources that enhance business efficiency plans and strategies. Newbert (2007) stated Resource-based views concentrate on businesses' ability to utilize physical or immaterial resources, such that businesses' resources should be inimitable to get a competitive edge. Barney (1996) suggests to succeed in enhancing the resources that provide unusual competitive advantages.

The RBV hypothesis has been critiqued for its static character and lack of empirical examination (Priem & Butler, 2001). In order to resolve this difference, many academics proposed connections between ownership and exploitation of resources (Mahoney & Pandian, 1992). They argued that a business may rent not because it has more resources, but because the distinguishing competence of the organization means better use of its resources. Resource-based views are important in this research, since it details how

companies may achieve operational efficiency, use business strategies that will improve their business skills and duplicate such procedures on a timely basis (Barney, 1991). Russo & Fouts (1997) and Sharma & Vredenburg (1998) argued that corporations should aim to enhance their investment in human capital time-to-time in order to gain long-term competencies, such as the deployment of a Quality Management System (QMS).

### **2.3 Principles of Quality Management Systems**

A set of procedures must be followed by an organization if it is to fulfill its objectives. Customer focus, leadership, staff involvement, a process approach, quality improvement, evidence-based decision-making, and relationship management are seven quality management strategies. Quality management system concepts are acceptable (Okwiri, 2015) and are detailed in the following. Implementation of the seven principles in an organization leads to the attainment of customer satisfaction.

Customer focus aims at ensuring the requirements of customers are met, they are treated well and their expectations exceeded (Gotzamani & Tsiotras, 2001). Organizations try to understand the current and future needs of customers and create more value for customers so as to attract and retain them for profitability. To achieve this principle, there is need to hold consultations with and listen to customers and regularly monitor and review customer satisfaction.

Leaders in an organization constitute the top management, which is the source of unity of purpose and provides strategic direction to align strategies, policies, processes and resources to achieve the quality management objectives (White, Samson, & Thomas, 2009). Top management encourages training and creates an environment for employees

to pursue a common direction and improve capabilities of the organization to deliver the results desired by customers.

The principle of engagement of people expounds on the active participation of all people in the promotion of quality and requires organizations to engage competent people, who have the capacity to ably create and deliver value. To run an efficient and productive company, it is essential to include everyone at every level (Singh, Feng & Smith 2006). The term "engaging the people" refers to the process of ensuring that the company's personnel are dedicated to the organization's mission and values, as well as sufficiently motivated to do their part in its growth and fulfillment. This leads to their abilities being exploited for the organization's benefit and success as well as satisfaction of the customer.

When all operations are understood and done as interconnected activities that work as one cohesive system, consistent and predictable outcomes may be achieved more efficiently and effectively. Understanding the way resources, processes, interactions and controls produce results in a QMS such as ISO, which itself comprise interrelated processes, enables the organization to optimize its systems and performance. Since the ISO comprises interrelated processes, it enables the organization to optimize its systems and performance. This is achieved through efficient use of resources and effective process management (Beske & Seuring2014).

Organizations that succeed maintain continual improvement as one of the goals so as to sustain the performance at its present level, cope with changes in the environment and take advantage of any opportunity that may arise. In ISO, setting up improvement objectives, carrying out QMS audits, taking corrective action and innovations rank high

in the improvements envisaged in this principle. PDCA (Plan, Do, Check, and Act) is a cycle that may be used to drive continuous improvement (Feng, Terziovski & Samson2007).

An organization's success may be attributed to the confidence it instills in its employees by making choices based on the study and assessment of pertinent facts and information. Evidence-based decision making occurs when multiple types of information are gathered from multiple sources, facts identified, analyzed and the causal-effect relationship established (Priede, 2012). Objectivity in decision-making can be improved by facts, evidence and data analysis. The root cause analysis can be used to determine the source of the problems and the corrective actions to be taken.

This idea focuses on supply chains through establishing mutually advantageous supplier relationships. It recognizes the interdependence between the firm and its suppliers. Having a good working connection improves productivity and fosters a smooth workflow. Long-term relationships and the ability to respond quickly and collaboratively to shifting market conditions or customer expectations are all outcomes of this process.

#### **2.4 Measurement of Quality Management Systems**

Kumar et al. (2018) said that a company's ability to compete and stay afloat depends on its ability to generate a profit. Despite the widespread research on quality management systems, few studies have examined the link between QMS and organizational performance. Despite their high cost and complexity of installation, most researchers believe quality management systems and applications improve corporate performance. Those who question the value of quality management systems have cited the burdens of practices like as training expenditures, management time commitment, additional

paperwork and formality, employee loyalty expectations, and a focus on outcomes above all else as grounds for their skepticism of the system.

Organizational performance measures how close an organization comes to meeting its predefined economic objectives in terms of profit or loss. It demonstrates an organization's success in achieving its economic goals. The financial health of the firm is critical for both internal consumers of information and external stakeholders seeking to engage in the sector (Saiz-Ivarez, Manuel, Olalla-Caballero, Beatriz, 2020).

Wanyoike, (2016) found out that parastatals that had adopted quality management systems and aligned them to their corporate strategy, these practices had significantly contributed to the performance and created a competitive advantage focusing on efficiency and effectiveness.

### **2.3.1 Continuous Improvement**

In their research, Maletic, Maletic & Gomiscek, (2012) found that the quality, efficiency, and effectiveness of operations may all be affected by continuous improvement, which might have an effect on manufacturing profitability.

Continuous improvement is considered as a collection of practices that may aid an organization in improving its output. Continuous improvement is seen by many scholars as a dynamic process, with an emphasis on improvement programs and their link to other organizational factors within the company and its environment (Maletic, Maletic & Gomiscek, 2012). Continuous improvement in a company requires a number of core procedures, such as learning from experience, collecting and implementing individual

knowledge. Continuous improvement projects' results may be included into the firm's knowledge base if workers are encouraged to provide feedback on their performance.

Muteti (2014) observed that continuous improvement practices result in better marketing management process, improved customer relations management and increased productivity which influenced positively operational performance and firm performance.

### **2.3.2 Employee Involvement**

Employee engagement and involvement have a considerable impact on organizational success, according to Butali & Njoroge (2016). Organizational performance may be improved if workers are given the opportunity to make relevant proposals and participate in decision-making. It is essential that businesses consult with workers before making decisions that will have a significant impact on their ability to contribute (Zhang and Xia, 2013). Employees may become demotivated and unproductive if they believe they are not included in the decision-making process. Instead, they will be more productive because they will experience a sense of belonging if they are inspired.

An organization's performance improved significantly when employees were empowered, according to Njehia, Wasike & Muturi (2019) in their research. In his research of small and medium-sized businesses in Kitale, Kenya, Chesoli (2018) found that employee involvement had a substantial influence on organizational success.

### **2.3.3 Management by Data**

Brynjolfsson & McElheran (2016), in a study that studied data driven decision making in the US manufacturing established that putting data 'into action' is associated with

significantly higher productivity. The adoption of specific data driven practices correlated with the greatest increases in productivity.

Data-driven decision making has been connected to enhanced productivity and market value, according to Brynjolfsson et al. (2011). Profitability measures like as return on investment and asset utilization have also been connected to data-driven decision making, according to study.

### **2.3.4 Customer Focus & Satisfaction**

SMEs' performance in Nigeria has been shown to increase when customers are satisfied, according to Zakari and Ibrahim's research (2021). Nwankwo (2019) found a link between customer happiness, customer retention, and profitability in the Nigerian banking industry via a research on customer satisfaction and organizational performance.

### **2.4 Empirical Literature Review**

There was a research undertaken by Rukaria (2014) that looked at ISO quality system certification and customer happiness in the aviation business in Kenya to see whether there was a correlation between certification and overall customer satisfaction. It was a cross-sectional study with 120 participants, each of whom was given a questionnaire. Only 26% of enterprises were not ISO certified, and the variables impacting the link between ISO certification and customer satisfaction were employee-customer orientation and cross-functional interactions in organizations.

Organizational performance and ISO certification were examined in the Netherlands by Singels et al. (2001). They wanted to know whether certification led to better performance. The study adopted a descriptive method of research using a questionnaire administered on 192 organizations identified through stratified random sampling method.

ISO-certified and non-certified businesses were found to have no significant differences in performance in the research. Although non-certified organizations beat certified companies in terms of better outcomes and investment performance, they saved more money on production expenses and net earnings. The findings contradicted those of other studies that found attainment of ISO certification led to improved overall performance by organizations. According to Vloeberghs (1996), Bellens (1996) and Carlsson and Carlsson (1996), ISO certification improves customer trust, whereas Jeng (1998) discovered a favorable association between ISO certification and performance.

Thulo (2013) looked examined Kenya's service sector's operational performance and the country's adherence of ISO quality management standards. He applied a descriptive survey method by undertaking a census survey of all the 53 service organizations certified by KEBS by 2012 to establish how adoption of ISO affected performance. The findings established that ISO certified organizations benefited from improved operational performance and incorporation of the external customer's needs, adherence to standards, improved customer satisfaction, higher productivity and reduction in the cost of quality. The study also found employee resistance, increased documentation and limiting employees' creativity and critical thinking as the challenges faced in ISO certification. Organizations that participated in the study were all from the private sector, hence leaving out the public sector, which is a major service provider.

The Hong Kong special administrative area of China, which is a service industry, was investigated by Mak (2011) in order to find out whether tour operators used quality management and the obstacles they encountered. A questionnaire was used to conduct a case study of Hong Kong's only three ISO-certified tour companies at the time. The study

found that ISO certification benefited tour operators in a number of ways, including improved image building and management control, increased market share due to improved marketing, financial benefits from improved workflow reduction, increased revenue, better organizational structures, and preventive measures to avoid non-conformity.

Using a descriptive survey approach, Kimani (2008) investigated the influence of ISO certification in enhancing Kenyan firms' competitiveness. Data was obtained from 55 ISO certified private sector organizations using a questionnaire. Findings showed that majority organizations agreed ISO certification was a source of competitive advantage over their rivals who were not certified as it led to increased quality awareness and improved products and customer satisfaction. Between ISO certified and non-certified enterprises, Singels et al found no significant differences in manufacturing processes, customer satisfaction, or employee motivation (2001). Another problem is that the research focused on businesses, not government, therefore it cannot be generalized for use in government.

Singh and Nahra (2006) studied ISO 9000 certification in the public sector in Australia focusing on the Australian Federal Government Agency (a statutory body established under an act) that attained ISO certification in 2001, thus Australian Maritime Safety Authority (AMSA). This was a descriptive study and the researchers adopted the case study research methodology. The study established that AMSA's certification was as a result of pressure from the Australian Government requiring all its agencies to be certified, top management was fully involved and supported the process, AMSA benefitted from tenders awarded by other countries after certification, reduced and

improved operating procedures. Challenges faced included non-embrace of ISO, resistance to change and perceptions that undertaking ISO certification was equivalent to performing extra duties. Being a case study with a singular approach to the investigations, the findings could not be generalized for public sector.

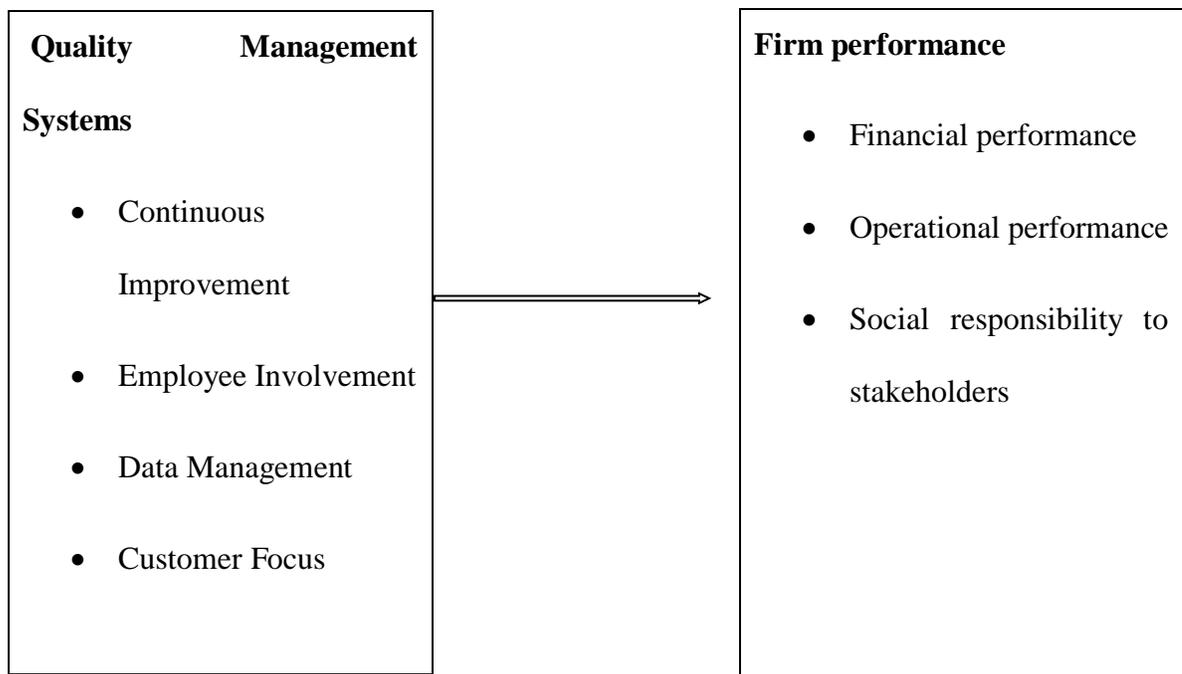
Muiruri, (2016) studied quality management systems and organizational performance among Kenya's public sector organizations. Partial least squares was used to analyze data from 70 Kenyan public sector organizations. Quality management systems promote organizational performance by focusing on continuous improvement and client demands. Indiya, Mise and Obura, (2018) examined how hospitals in Mombasa have adopted quality management systems such as continuous improvement and data management. The study investigated quality management systems and organizational commitment in the medical sector. Health care organizations need human resources management, a focus on patient mobility, and social capital in order to execute at their highest level of efficiency.

Data management systems in quality management systems in Kenyan industrial enterprises were explored by Muchiri (2017). Effective QMS design depends greatly on the quality and availability of the data it uses. Variable product quality, operational inefficiencies, regulatory concerns and poor customer satisfaction may all result from ineffective data management practices. Wanyoike, (2016) found out that parastatals had adopted quality management systems and aligned them to their corporate strategy and these practices had significantly contributed to the performance and created a competitive advantage focusing on efficiency and effectiveness. The improvement of operating efficiency improves customer focus and eventually the company's performance.

## 2.6 Conceptual Framework

The study's conceptual framework depicts the flow and interaction of components. According to Myers (2009), a conceptual framework visually describes the basic constructions of the variables to be examined as well as the connections among those variables.

**Figure 2.1: Conceptual Framework**



**Independent variable**

**Dependent variable**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

Design studies and demographic research, sample design, data collecting equipment, data collection methods, and data processing techniques and procedures were all used in this study's research methodology.

#### **3.2 Research Design**

This research used a descriptive design. As a result, the design answers queries like "Where?" "What?" "Who?" and "When?". It allows responders to provide freely additional information (Cooper & Schindler, 2007). The design also enabled the researcher to get extensive information on the people polled.

#### **3.3 Population of the Study**

Population is defined by Kombo and Tromp (2006) as the entire number of people residing in a city or constituency, including families, students, and voters. The KAM categorizes ISO certified manufacturing businesses into 12 sub-sectors depending on their goods or the raw materials they import. Nairobi has 594 manufacturing companies out of 700 in Kenya. Nairobi is a good study place since it has 80% of manufacturing

companies. The ISO certified manufacturing firms' entities within Nairobi are 206 (KAM, 2020).

### 3.4 Sampling Design

An acceptable sample size is one that is drawn from the population that can be identified, according to Mugenda & Mugenda (2008). The Slovene's (1978) formula was applied in determining fixed sample size from a population of 206. The Slovene's formula is as below;

$$n = \frac{N}{1 + N(e)^2}$$

N = Population

e = Acceptable margin of error

n = Sample

The research used a 95% confidence interval and a 5% error margin. In applying Slovene's formula, fixed (total) sample size was;

$$n = \frac{206}{1 + 206(0.05)^2}$$

$$n = \frac{206}{1 + 206 (0.0025)}$$

$$n = 135$$

The technique that was used is stratified random sampling where the firms were stratified into sectors.

**Table 3.1 Sample distribution**

	<b>Manufacturing Sector</b>	<b>Number of firms</b>	<b>of Proportionate sample size (x/206*135)</b>
1	Chemical & Allied	30	19
2	Energy, Electricals	8	5
3	Food and Beverages	37	24
4	Leather	6	4
5	Metal	10	6
6	Motor vehicle	16	10
7	Mining	6	3
8	Paper and Board	9	5
9	Pharmaceuticals	30	19
10	Plastic and Rubber	20	13
11	Textiles	19	12
12	Timber	15	9
<b>Total</b>	<b>12 sectors</b>	<b>206</b>	<b>135</b>

### 3.5 Data Collection

This study utilized primary data. A well-crafted questionnaire collects primary data. Closed-ended questions were included in the survey. There are three sections: demographic data, quality management, and organizational performance (Zikmund,

2010; Cooper & Schindler, 2011). Due to Corona Virus Disease in 2019, the research was done under strict health rules that required distribution of surveys through Google form (WHO, 2020). Operational managers are the primary audience for this survey.

### **3.6 Data Analysis**

Surveys were used to ensure the accuracy and reliability of the data that had been obtained. It was edited, organized, and then put on the table before the descriptive analysis could begin. Core trend and dispersion metrics are developed in descriptive analysis. In order to identify the elements that a corporation takes into account while making strategy decisions, the researcher used the average of the data. The most often used dispersion statistic is the standard deviation. The amount of variance of a collection of values is measured. In this research, standard deviations from the industry average are utilized to determine the variance of data from a specific company. The results of this research are shown in tables. The Social Sciences Statistics Package (SPSS) was utilized in all these analyses. Below is the linear regression model used:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

Where: Y is Performance

$\beta_0$  is the model 's constant

$\beta_1$  to  $\beta_4$  are the regression coefficients

$X_1$  = Continuous Improvement

$X_2$  = Employee Involvement

$X_3$  = Data Management

$X_4$  = Customer Focus

E=Error Term

## **CHAPTER FOUR**

### **DATA ANALYSIS, PRESENTATION AND DISCUSSION**

#### **4.1 Introduction**

This section includes the findings of studies on quality management systems and the performance of organizations.

#### **4.2 Response Rate**

Only 70 of the 135 questionnaires were returned for data processing, a response rate of 51.85%. The findings support Mugenda and Mugenda's (2013) assertion that rates higher than 50% are acceptable in analysis. Babbie (2010) finds a return rate of 60% to be acceptable, and a return rate of 70% to be exceptional. The findings were sufficient for data analysis. As a result of the adequate response rate, the researcher proceeded.

#### **4.3 Organizational Characteristics**

This section is dedicated to firm's basic details. The data aided in comprehending the company' background details under consideration. It inquired about how long the company had been in operation, how many employees it had, and how it was owned.

##### **4.3.1 Period of operation**

The duration of operation of the ISO certified manufacturing firms was given by respondents as specified in Table 4.1.

**Table 4.1: Period of Operation**

<b>Years</b>	<b>Frequency</b>	<b>Percent</b>
Less than 4 years	5	7.14
4-8 years	20	28.57
Above 8 years	45	64.29
<b>Total</b>	<b>70</b>	<b>100.0</b>

Table 4.1 depicts that most of ISO certified manufacturing firms have been in operation between above years 8 at 64.29 %, 4-8 years at 28.57% and lastly Less than 4 years at 7.14%. The result implies that majority of the ISO certified manufacturing firms are well established in Kenyan market.

#### **4.3.2 Number of Employees**

The goal of the research was to figure out how many people work for ISO certified manufacturing firms. Table 4.2 depicts responses as gathered from respondents.

**Table 4.2: Number of Employees**

<b>Employees</b>	<b>Frequency</b>	<b>Percentage</b>
Less than 400	10	14.57
401 – 1000	40	57.14
Over 1000	20	28.57
<b>Total</b>	<b>70</b>	<b>100.0</b>

Table 4.2 depicts that most of ISO certified manufacturing firms have employees between 401-1000 at 57.14, followed by employees between over 1000 at 28.57 and

lastly less than 400 at 14.57. This implies that manufacturing sector players are source of employment.

### 4.3.3 Ownership Structure

The purpose of the study was to identify the owners of the ISO-certified manufacturing companies. Table 4.2 depicts responses as gathered from respondents.

**Table 4.3: Ownership Structure**

<b>Years</b>	<b>Frequency</b>	<b>Percent</b>
Private	40	57.14
Publicly listed	20	28.57
Government owned	10	14.29
<b>Total</b>	<b>70</b>	<b>100.0</b>

Table 4.3 depicts most of ISO certified manufacturing firms are privately owned at 57.14%, followed by publicly listed at 28.57% and government owned are 14.29%. This implies that most ISO certified manufacturing firms are privately owned.

### 4.4 Quality Management System

The independent variables of this research were quality management systems. It was essential to determine the opinions of respondents on their organization's quality management system. The innovation methods have been assessed at a 5-point scale of Likert and the responses are required to either agree on "Not at all," "little degree" and "moderate degree" or "large degree", "very large degree". For each question, the most favourable answer was given 5 points, followed by 4, 3, 2, and 1 for the least positive. This research utilized a mean value of 4.0-5.0 for large, 3.0-4.0 for moderate, 2.0-3.0

small, and 1.0-2.0 for did not agree. The ISO certified manufacturing firms in Kenya quality management system were evaluated using a total of 20 statements.

#### 4.4.1 Data Management

Participants were asked to indicate how much they agreed or disagreed with five data management approaches. Table 4.4 depicts the outcome.

**Table4. 4: Data Management**

<b>Statement</b>	<b>N</b>	<b>Mean</b>	<b>Std. dev</b>
The company updates the database of the customers frequently.	70	4.18	0.95
.The database of the company is well handled	70	3.73	1.06
Records and statistical data of customers' progression are available	70	3.57	0.99
Recommendations by customers and survey reports are fully implemented	70	3.00	1.02
Decisions are made based on data available	70	3.40	1.05
<b>Composite mean</b>	<b>70</b>	<b>3.57</b>	<b>1.01</b>

The company updates the database of the customers frequently having a 4.18 as mean and a 0.95 as standard deviations as depicted in Table 4.4. Having a 3.73 as mean and a 1.06 as standard deviations, the database of the company is well handled. Records and statistical data of customers' progression are available having a 3.57 as mean and a 0.99 as standard deviations as espoused by survey data. A mean of 3.00 and a standard deviation of 1.02 are completely implemented based on consumer recommendations and survey results. In addition, decisions are made based on data available having a 3.40 as

mean and a 1.05. Many ISO-certified manufacturing companies in Kenya have adopted data management to a modest level, according to the overall mean of 3.57.

#### 4.4.2 Employee Involvement

This survey had participants answer five statements on employee engagement and ask how they felt about them. Table 4.5 shows the final result.

**Table 4.5: Employee Improvement**

<b>Statement</b>	<b>N</b>	<b>Mean</b>	<b>Std. dev</b>
There are sufficient human resources to support processes	70	4.20	0.89
The employees have access to facilities and equipment's.	70	3.70	1.08
Location and availability of buildings are provided to employees	70	4.30.	0.92
The firm sets aside resources for training on quality and service delivery	70	4.11	1.10
The company places a high priority on training and motivating its employees.	70	3.80	0.99
<b>Composite Statistics</b>	<b>70</b>	<b>4.02</b>	<b>0.99</b>

There are enough human resources to support services with a mean of 4.20 and an SD of 0.89, while the company reserves resources for training on quality and service delivery with a mean of 4.11 and an SD of 1.10 as shown in Table 4.5. A mean of 4.30 and a standard deviation of 0.92 suggest that workers have access to building locations and availability. With a standard deviation of 0.99, the company's objective is to have highly

motivated and well-trained employees. Customers and staff may use facilities and equipment with a mean and standard deviation of 3.70 and 1.08, respectively. The overall mean was 4.02, indicating that ISO certified manufacturing companies in Kenya have a high level of employee participation.

#### 4.4.3 Continuous Improvement

Participants were asked to rate their level of agreement with five statements on the importance of continuous improvement. Table 4.6 depicts the outcome.

**Table 4.6: Continuous Improvement**

<b>Statement</b>	<b>N</b>	<b>Mean</b>	<b>Std. Dev</b>
The company is run in a way that focuses on service delivery quality improvement on a continuous basis.	70	4.11	1.17
The organization has a strong focus on quality as an integral aspect of its continuous improvement strategy.	70	3.73	0.98
The firm operates an acknowledgement and recognition programme for improvement by its customers	70	3.34	1.19
The quality management system's goals and methods are well stated.	70	3.90	0.89
Customers understand and find the firm's processes easy to follow	70	3.23	1.07
<b>Composite Statistics</b>	<b>70</b>	<b>3.66</b>	<b>1.06</b>

The organization is handled as a continuous quality improvement system with a mean of 4.11 and standard deviation of 1.17. The quality management system's goals and methods for achieving them are well defined, with an average difference of 3.90 and 0.89. With a mean quality score of 3.73, the company's improvement culture focuses an emphasis on high-quality products and services, as seen by its standard deviation of 0.98. 3.34 was the

average recognition and appreciation for customer improvement, while the standard deviation was 1.19. Finally, customers understand and find the firm's processes easy to follow having a 3.23 as mean and a 1.07 as standard deviations. The overall mean was 3.66, which indicates that many ISO-certified manufacturing companies in Kenya have adopted continuous improvement to a modest level.

#### 4.4.4 Customer Focus

Customer satisfaction was the subject of five statements that asked respondents to assess their degree of agreement. Table 4.7 depicts the outcome.

**Table 4.7: Customer Focus**

Statement	N	Mean	Std Dev
The Firm holds consultations with its customers	70	4.11	.504
Customers participate and freely contribute to decision making processes in the firm	70	4.54	.505
Reports of ISO audits and management reviews, and customers' feedback inform improvements	70	4.23	.798
Recommendations by customers and survey reports are fully implemented	70	4.63	.547
The firm is managed as a continual quality improvement method in service delivery.	70	4.26	.611
<b>Composite Statistics</b>	<b>70</b>	<b>4.35</b>	<b>.652</b>

Table 4.7, recommendations by customers and survey reports are fully implemented with a mean 4.63 and standard deviation 0.547. Customers participate and freely contribute to

decision making processes in the firm having a 4.54 as mean and a 0.505 as standard deviations. With a mean of 4.26 and a range of 611, the firm is handled as an improvement system for service delivery. In addition to this, reports of ISO audits and management reviews, and customers' feedback inform improvements having a 4.23 as mean and a 0.798 as standard deviations. Finally, the Firm holds consultations with its customers with a mean difference of 4.11 and 0.504. Kenyan ISO-certified manufacturers are embracing customer attention to a great degree, according to the overall mean of 4.35.

#### **4.5 Organizational Performance**

Under this research, organizational performance was a dependent variable. The respondents' opinions on the competitive advantage of their company had to be established. Firm performance was assessed on a 5-point Likert scale and participants were asked to either agree: "to a very great degree" "great degree," "modest degree," "tiny" and "not at all." The answer to each question which identified the highest favourable reaction for these activities was assigned 5 points, and then 4, 3, 2, and 1, correspondingly, to the least positive. The following analysis has been adopted to distinguish the extent: mean value of 4.0<5.0 to a large, a moderate extent of 3.0<4.0, a small extent of 2.0<3.0 and an average score of 1.0<2.0 to a small degree. 5 statements were used to firm performance among ISO certified manufacturing firms in Kenya.

##### **4.5.1 Financial and market performance**

The participants were given five statements on financial and market performance and prompted to indicate their degree of agreement with each of them as specified in Table 4.8.

##### **Table 4.8: Financial and Market performance**

<b>Statement</b>	<b>N</b>	<b>Mean</b>	<b>Std. dev</b>
There is increase in profitability	70	4.63	0.487
There is increase in sales Volume	70	4.40	0.493
There is increase in return of Investment.	70	4.37	0.498
There is increase in market share	70	4.50	0.497
There is increase in customer database	70	4.40	0.456
<b>Mean</b>	<b>70</b>	<b>4.46</b>	<b>0.4862</b>

In Table 4.8, there is increase in profitability, having a 4.63 as mean and a 0.487 as standard deviations. Mean 4.50 and standard deviation 0.497 indicate an increase in market share in the industry. Further, there is increase in customer database having a 4.40 as mean and a 0.456 as standard deviations. There is increase in sales volume having a 4.40 as mean and a 0.493 as standard deviations. Finally, the mean increase in return on investment was 4.37, with a standard deviation of 0.498. Many ISO certified manufacturing enterprises in Kenya place a high value on financial and market performance, according to the overall mean score of 4.46.

#### **4.5.2 Operational Performance**

The participants were given five statements on operational performance and prompted to demonstrate their degree of agreement. Table 4.10 depicts the outcome.

**Table 4.9: Operational Performance**

<b>Statement</b>	<b>N</b>	<b>Mean</b>	<b>Std. dev</b>
Our organization carries out regular machine maintenance to improve their efficiency	70	4.30	0.456
Our organization has entered into long term leasing agreement to manage production costs	70	4.23	0.432
Internal procedures have been simplified to better reflect the changing demands of the company.	70	4.42	0.433
Products are manufactured in time	70	4.57	0.443
<b>Mean</b>		<b>4.38</b>	<b>0.440</b>

Products are manufactured in time having a 4.57 as mean and a 0.443 as standard deviations. From a 4.42 mean and 0.433 standard deviations, the companies have optimized internal procedures to match organizational changing demands. Further, our organization carries out regular machine having a 4.30 as mean and a 0.456 as standard deviations. Lastly, our organization has entered into long term having a 4.23 as mean and a 0.432 as standard deviations. The overall mean was 4.38 which implies that many ISO certified manufacturing firms embrace operational performance to a great extent.

#### **4.5.3 Social responsibility to stakeholders**

The participants were given five statements on social responsibility to stakeholders and prompted to demonstrate their degree of agreement. Table 4.10 depicts the outcome.

**Table 4.10: Social Responsibility to Stakeholders**

<b>Statement</b>	<b>N</b>	<b>Mean</b>	<b>Std dev</b>
Complaints from stakeholders are addressed	70	4.32	0.467
Suppliers are acknowledged for the critical role they perform.	70	4.43	0.454
Positive comments from stakeholders	70	4.53	0.456
The organizations strives to meet customer expectations	70	4.23	0.467
<b>Mean</b>		<b>4.38</b>	<b>0.461</b>

Positive input from stakeholders is presented in Table 4.10, which has an average rating and a standard deviation of 4.53 points. The significance of suppliers may be seen in the median of 4.43 and the standard deviation of 0.454. A standard deviation of 0.467 and an average of 4.32 indicate that concerns from stakeholders are addressed. Final point: Firms strive for customer satisfaction with an average of 4.23 and standard deviation of 0.467, respectively. In light of the overall mean of 4.38, it can be inferred that many ISO-certified manufacturers have a high degree of social responsibility to their stakeholders.

#### **4.6 Correlation Analysis**

Correlation analysis was used to investigate the link between the study's variables. Quality management systems have been linked to higher levels of productivity in organizations because of this work. Table 4.11 displays the findings of this particular investigation.

**Table 4.11: Pearson Product-Moment Correlations Results for Study Variables**

		<b>DM</b>	<b>EI</b>	<b>CI</b>	<b>CF</b>	<b>OP</b>
<b>DM-Data</b>	Pearson Correlation	1				

<b>Management</b>	Sig. (2-tailed)					
	N	70				
	Pearson Correlation	.623*	1			
<b>EI-Employee involvement</b>	Sig. (2-tailed)	.05				
	N	70	70			
	Pearson Correlation	.683**	.241*	1		
<b>CI-Continuous Improvement</b>	Sig. (2-tailed)	.01	.05			
	N	70	70	70		
	Pearson Correlation	.750**	.424**	.215*	1	
<b>CF-Customer focus</b>	Sig. (2-tailed)	.01	.01	.05		
	N	70	70	70	70	
	Pearson Correlation	.873**	.738**	.356*	.525**	1
<b>OP-Organizational performance</b>	Sig. (2-tailed)	.01	.01	.03	.01	
	N	70	70	70	70	35

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Table 4.11's Pearson correlation coefficient ( $r=0.873$ ) shows a positive association between customer attention and data management. A 0.738 Pearson correlation coefficient and a p-value of 0.01 indicate that employee development and business success are positively correlated. There is a substantial link between the Pearson's correlation value of 0.356 and the significance level 0.05 between Continuous Improvement and organizational performance. At a 0.05 p-value, there is a substantial

association between an organization's success and its customer focus, as measured by Pearson's correlation coefficient.

#### 4.7 Regression Analysis

Using regression analysis, the  $\beta$  coefficient of determination ( $r^2$ ) and the coefficient were utilized to calculate and forecast the link between variables in Kenyan ISO certified manufacturing businesses' quality management systems. According to a multivariate regression analysis, the percentage of the dependent variable (organizational performance) predicted by the four predictor components was determined (data management, employee improvement, continues improvement and customer focus).

##### 4.7.1 Model Summary

Predictors and dependent variables were examined using regression analysis. Table 4.12 provides a summary of the model.

**Table 4. 12: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820 <sup>a</sup>	.672	.570	.482

a. Predictors: (Constant), Data management, employee improvement, continues improvement and customer focus.

In Table 4.12 at significance level of 0.005, the outcomes show that R and  $R^2$  were 0.820 and 0.672 respectively. There is a strong association of quality management systems and organizational performance as evident by  $R=0.820$ . 67.2 percent of model predictor variation can be explained by results, but 32.8 percent of model predictor variance cannot be explained by results.

### 4.7.2 Goodness of Fit of the Model

The researcher chose a regression model that was appropriate for the data and did an ANOVA. According to Table 4.13

**Table 4.13: ANOVA**

<b>Model</b>		<b>Sum of Squares</b>	<b>Df.</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	.222	4	.056	1.696	.018 <sup>b</sup>
	Residual	1.037	65	.033		
	Total	1.259	69			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Data management, employee improvement, continues improvement and customer focus

Table 4.13 displays the ANOVA findings. According to the table in this publication, the f statistic is 1.696 at a 5% significance level. P values of 0.018 <0.05 are considered significant. A company's performance may be predicted by its quality management system indicators, according to these research.

### 4.7.3 Model Regression Coefficients

The presentation in Table 4.14 shows unstandardized coefficients, standardized coefficients, t statistics and significant values.

**Table 4.14: Regression Coefficient**

Model		Unstandardized		Standardized		
		Coefficients		Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	4.222	.617		6.838	.000
	Data management	.067	.093	.143	.718	.047
	Employee involvement	.121	.099	.203	1.220	.023
	Continues improvement	.178	.140	.279	1.271	.021
	Customer focus	.153	.096	.299	1.591	.012

a. Dependent Variable: Organizational performance

For ISO-certified Kenyan manufacturing companies, quality management systems and organizational performance are linked, according to the regression coefficients shown in the table above.  $P=0.047 < 0.05$  was recorded for data management,  $P=0.023 < 0.05$  for employee participation,  $P=0.021 < 0.05$  for continual improvement, and  $P=0.012 < 0.05$  for customer focus. This Significance test was conducted at  $\alpha=0.05$  in which the significance exists when  $p$  records a value  $< 0.05$ . The results show that the parameters of quality management systems possess a significant relationship with organizational performance. The linear model then stands to be;

$$Y = 4.222 + 0.067X_1 + 0.121X_2 + 0.178X_3 + 0.153X_4 + \epsilon$$

As per the findings, the constant 4.222 indicates that there still some level of organizational performance even in the absence of the driver variables. Changes in the data management parameter for quality management systems in Kenyan ISO certified manufacturing enterprises may have an impact of 0.067 percent on their organizational

performance when all other independent parameters are maintained constant, organizational performance in Kenya's ISO-certified manufacturing enterprises changes by 0.121 units for every one unit change in the employee participation parameter in respect to quality management systems, in ISO certified manufacturing businesses, a change in the continuous improvement parameter in respect to quality management systems by one unit would lead to a 0.178 change in firm performance, while a change in the customer focus parameter will lead to a 0.153 change in company performance.

#### **4.8 Discussion of Findings**

ISO certified manufacturing enterprises in Kenya were studied as part of the research project, which aimed at determining how effective quality management systems are in boosting the performance of these firms. Researchers used descriptive statistics to analyze the data. ISO-certified manufacturing companies in Kenya were found to have a modest level of adoption of data management systems. This was backed by the following statements, the company updates the database of the customers frequently and the database of the company is well handled. Decisions based on data have been shown to boost productivity and market value (Brynjolfsson et al., 2011).

The research found that employee participation has a significant impact on organizational effectiveness. This was supported by the following claims: there are enough human resources to support services, and personnel are informed about the location and availability of buildings. Butali & Njoroge (2016) stated that employee engagement and involvement have a major impact on organizational success, and their data support that conclusion. They also recommend that management encourages workers to make

significant proposals and engage more in decision-making, since this improves organizational performance.

ISO-certified manufacturing companies in Kenya have implemented continuous improvement to a degree, according to a survey. There are two statements supporting this: the business is run as a quality improvement system and quality is part of the organization's improvement culture. In their research, Maletic, Maletic & Gomiscek, (2012) found that continuous improvement might affect manufacturing profitability by impacting quality, efficiency, and effectiveness in operations.

ISO-certified manufacturing companies in Kenya were found to have embraced a customer-centric approach to their operations to a large degree. This was backed by the following statements, customers participate and freely contribute to decision making processes in the firm and recommendations by customers and survey reports are fully implemented. Findings concur with Nwankwo (2019), who found that customer happiness and customer retention had a direct impact on bank profitability in Nigeria.

ISO-certified manufacturing companies in Kenya were studied to see whether the quality management system had any impact on their performance using regression analysis. There was a good match between the coefficient of determination and the data;  $R^2=0.672$ , which is a strong predictor. The whole regression model has a statistically significant p-value of  $0.018(<0.05)$ . Racelis (2005) discovered that a company's performance is enhanced by using a quality management system.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

A summary of the study's findings and conclusions is provided in this chapter. In accordance with the study's objectives, this is being done.

## **5.2 Summary of the Findings**

Kenyan ISO-certified businesses were studied to see whether their performance was affected by the use of quality management systems. Research indicated that most ISO-certified manufacturers have been in business for at least eight years, indicating that the bulk of these companies are well established in the Kenyan market. Most firms are privately owned with employees between 401 to 1000.

It was found that ISO-certified manufacturing companies in Kenya use data management in a modest way and develop procedures and activities to satisfy consumers. Employee involvement influence organizational performance to a great extent. There are sufficient human resources to support services and location and availability of buildings are provided to employees. ISO certified manufacturing enterprises in Kenya implemented continuous improvement to a lesser level and quality management systems to a greater extent.

A connection exists between organizational performance and quality management systems, according to the research results. Using regression analysis, it was discovered that the model used in this research was highly predictive. P-value less than 0.05 in an analysis of variance demonstrated that the model had statistical significance. Data management, employee involvement, continues improvement and customer focus were statistically significant.

### **5.3 Conclusion of the study**

Since quality management systems have been shown to strongly affect overall company performance, the study's findings suggest quality management systems may help any organization, regardless of its existing operations, enhance its performance.

It was established that ISO certified manufacturing firms in Kenya embraced documentation of a management system to moderate extent. The employee improvement influence firm performance to a great extent. ISO certified manufacturing enterprises in Kenya implemented continuous improvement to a lesser level and customer focus to a greater extent than the rest of the country's manufacturers.

In addition, data management, staff participation, continuous improvement, and a focus on customers, as well as quality management systems, were shown to have strong positive associations with ISO-certified manufacturing enterprises' performance.

### **5.4 Recommendations**

ISO-certified manufacturing companies should have leaders who are fully dedicated to quality management systems. The approaches should be supported by increased resources, both financial and human, from the highest levels of management. Leadership should not only provide resources, but also foster teamwork and a culture that supports the company's quality management systems.

The effectiveness of quality management systems in ISO-certified manufacturing enterprises depends only on the competence and dedication of all stakeholders. In order to ensure the organization's ability to adapt, it is critical to support and develop the leadership's ability to foster change orientation and growth.

ISO-certified manufacturing companies should have policies and processes that encourage strong employee participation, understanding, and dedication to the company's vision, purpose, and goals. One reason for this is because a strategy's execution relies heavily on the participation of the organization's personnel.

### **5.5 Limitations of the study**

One of difficulties was that mid-level management personnel were the target respondents for the research. Many were extremely busy and strained due to the pressure at work, therefore there was not enough time to answer the surveys when the researcher provided them with the questionnaire. To guarantee that the questionnaire was properly completed, the instrument validity was checked to make sure aims of investigation are clear, brief and addressed before distributing them by email.

The onset of covid-19 necessitating people working from home and maintaining social distance limited the interactions the researcher could have with the respondents. Follow up questions had to be done remotely via a phone call or zoom meetings. These limitations further made it harder to adequately validate some of the responses as would have been the case in face to face meetings.

The research also has a further disadvantage because it focuses solely on quality management systems. However, other variables are extremely important in obtaining a company's firm performance edge.

### **5.7 Suggestions for Further Studies**

Quantitative methods were used in this cross-sectional research project. Participants' thoughts and feelings were simply recorded in the form of a logbook. Since there was a

limited amount of time and money to work with, a cross-sectional research was the most practical option. Because of this, qualitative research based on interviews is required.

Further, this study only focused on ISO certified manufacturing firms. This leaves gaps in the effect of ISO certified manufacturing firms on other firms such as public hospitals, airline companies, large-scale farms, motor firms amongst others. In the future, it's important to examine how quality management systems affect other aspects of service delivery.

## REFERENCES

- Arumugam, V., Ooi, K. B. & Fong, T. C. (2008). TQM practices and quality management performance: An investigation of their relationship using data from ISO 9001: 2000 firms in Malaysia. *The TQM Journal*, 20(6), 636-650.
- Barney, J. B. (1996). The resource-based theory of the firm. *Organization science*, 7(5), 469-469.
- Beckmerhagen, I. A., Berg, H. P., Karapetrovic, S. V., & Willborn, W. O. (2004). On the effectiveness of quality management system audits. *The TQM magazine*.
- Beske, P., & Seuring, S. (2014). Putting sustainability into supply chain management. *Supply Chain Management: an international journal*, 19(3), 322-345

- Carlsson, M., & Carlsson, D. (1996). Experiences of implementing ISO 9000 in Swedish industry. *International Journal of Quality & Reliability Management*, 13(7), 36-47
- Ekwueme, C. M., Egbunike, C. F., & Onyali, C. I. (2013). Benefits of triple bottom line disclosures on corporate performance: An exploratory study of corporate stakeholders. *J. Mgmt. & Sustainability*, 3, 79.
- Feng, M., Terziovski, M., & Samson, D. (2007). Relationship of ISO 9001: 2000 quality system certification with operational and business performance: A survey in Australia and New Zealand-based manufacturing and service companies. *Journal of manufacturing technology management*, 19(1), 22-37.
- Guritno, A. D., Fujianti, R., & Kusumasari, D. (2015). Assessment of the supply chain factors and classification of inventory management in suppliers' level of fresh vegetables. *Agriculture and Agricultural Science Procedia*, 3, 51-55.
- Holdford, D. A. (2018). Resource-based theory of competitive advantage-a framework for pharmacy practice innovation research. *Pharmacy Practice (Granada)*, 16(3).
- Kimani, J. G. (2008). *The role of ISO 9000 certification in developing competitive advantage for Kenyan organizations*. (Unpublished MBA Project), Nairobi: University of Nairobi.
- Kiveu, M. N., Namusonge, M., & Muathe, S. (2019). Effect of innovation on firm competitiveness: the case of manufacturing SMEs in Nairobi County, Kenya. *International Journal of Business Innovation and Research*, 18(3), 307-327.

- Kombo, D. & Tromp, D. (2006), *Proposal and Thesis Writing – An Introduction*.  
Nairobi: Paulines Publication Africa
- Mak, B. M. M. (2011). ISO certification in the tour operator sector. *Journal of Contemporary Hospitality Management*, 23(1), 115-130.
- Matata, J. D. and Wafula, K. M. (2015). Effects of Quality Management Systems on Performance of Kenya Ports Authority, *International Journal of Scientific and Research Publications*, 5(5), 156-163.
- Mensah, L. D., & Julien, D. (2011). Implementation of food safety management systems in the UK. *Food Control*, 22(8), 1216-1225.
- Molina-Azorín, J. F., Tarí, J. J., Pereira-Moliner, J., López-Gamero, M. D., & Pertusa-Ortega, E. M. (2015). The effects of quality and environmental management on competitive advantage: A mixed methods study in the hotel industry. *Tourism Management*, 50, 41-54.
- Mwanaongoro, S., & Guchu, G. (2012). ISO quality management system implementation for small to medium manufacturing firms Kenya.
- Nigel, S., Chambers, S., & Johnson, R. (2007). *Operations management*. NJ: Prentice Hall.
- Nigel, S., Chambers, S., & Johnson, R. (2007). *Operations management*. NJ: Prentice Hall.
- Nyaoga, R. B., Nyamwange, O., Onger, R. N., & Ombati, T. O. (2010). Quality management practices in Kenyan educational institutions: The case of the

- University of Nairobi. *African Journal of Business & Management*, 1 (2010) 14, 28.
- Oakland, J., & Sohal, A. (1996). *Total quality management: Text with cases*. Melbourne, Butterworth Heinerman.
- Odollo, L. O. (2019). *Effect of Operations Strategies on Performance of Sugar Manufacturing Sector in Kenya* (Doctoral dissertation).
- Omari, S. M., R. M. Ateka, and B. Nyaboga. "The influence of Strategic Change Management Practices on Organizations Performance: A case of the Operations of soft drink Industries in Western Kenya." *International Journal of Social Sciences and Entrepreneurship* 1, no. 4 (2013): 557-567.
- impact on product and process innovation performance. *International Journal of Production Economics*, 158, 197-207.
- Thujo, C. M. (2013). *Adoption of ISO quality management standard and operational performance of service organizations in Kenya*. (Unpublished MBA Project), Nairobi: University of Nairobi.
- Ullah, B., Wei, Z., & Xie, F. (2014). ISO certification, financial constraints, and firm performance in Latin American and Caribbean countries. *Global Finance Journal*, 25(3), 203-228.
- Von Bertalanffy, L. (1956). General system theory. *General systems*, 1(1), 11-17.
- Were, A. (2016). Manufacturing in Kenya: Features, Challenges and opportunities. A *scoping exercise*, 11-22.

ZurMuehlen, M. (2004). Workflow-based process controlling: Foundation, design and application of workflow-driven process information systems (Vol.6). Logos Verlag, Berlin.

## **APPENDICES**

### **Appendix I: Questionnaire**

#### **SECTION A: ORGANIZATION CHARACTERISTICS**

1. In which firm do you work? (Enter below)

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2. For how long has the company been in operation? (tick one)

Less than 4 years

4-8 years

Above 8 years

3. How many employees are there in your organization (tick one)

Less than 400

401 - 1000

Above 1,000

4. What is the ownership structure of your company? (tick one)

Private

Publicly listed

Government owned

## **SECTION B: QUALITY MANAGEMENT SYSTEMS**

A list of quality management systems is provided below. Please tick the degree to which each of these is practiced in your organization. On a scale of 1 - 5, choose the best answer from the options offered. (1) Very Large Extent (2) Large Extent (3) Moderate (4) Small Extent (5) Not at all

<b>DATA MANAGEMENT</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The company updates the database of the customers frequently.					
The database of the company is well handled					
Record and statistical data of customers' progression are available.					
Recommendations by customers and survey reports are fully implemented					
Decisions are made based on data available					
<b>EMPLOYEE IMPROVEMENT</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
There are sufficient human resources to support processes					
The employees have access to facilities and equipment's.					
Location and availability of buildings are provided to employees					
The firm sets aside resources for training on quality and service delivery					

The firm focuses on getting employees well motivated and trained					
<b>CONTINUOUS IMPROVEMENT</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The company is managed as a system for continuous quality improvement in service delivery					
Quality forms part of the company's improvement culture					
The firm operates an acknowledgement and recognition programme for improvement by its customers					
The objectives of the quality management system and processes to achieve them are clearly defined					
Customers understand and find the firm's processes easy to follow					
<b>CUSTOMER FOCUS</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The Firm holds consultations with its customers					
The firm has a complaints handling mechanism					
Customers participate and freely contribute to decision making processes in the firm.					
Reports of ISO audits and management reviews, and					

customers' feedback inform improvements					
The company implement the comments of the customers					
Recommendations by customers and survey reports are fully implemented					
The company is managed as a system for continuous quality improvement in service delivery					

**SECTION C: FIRM PERFORMANCE**

To what extent have the listed firm performance measures been directly influenced by the firms' adoption of quality management system. Using a scale of 1 - 5, tick the appropriate answer from the alternatives provided. (1) Very Large Extent (2) Large Extent (3) Moderate (4) Small Extent (5) Not at all

<b>Financial performance</b>	1	2	3	4	5
There is increase in profitability					
There is increase in sales Volume					
Increase in return of Investment.					
Increase in market share					
<b>Operational performance</b>					
Our organization carries out regular machine					

maintenance to improve their efficiency					
Our organization has entered into long term leasing agreement to manage production costs					
The organizations produces quality products.					
The organizations has streamlined internal processes to reflect organizational changing needs					
<b>Social responsibility to stakeholders</b>					
Complaints from stakeholders are addressed					
Suppliers are recognized for the role they play					
Stakeholders give positive feedback					
The organizations strives to meet customer expectations					

**Appendix II – List of Sample of ISO certified manufacturing firms in Kenya.**

**Sector: Chemical and Allied**

1. Anffi Kenya Ltd
2. Maroo Polymers Ltd

3. Imaging solution (K) Ltd
4. Basco Product (K) Ltd
5. Masters Ltd Interconsumer Products Ltd
6. Bayer East Africa Ltd
7. United Chemical Industries
8. Odex Chemicals Ltd
9. Continental Products Ltd
10. Oasis Ltd
11. Osho Chemicals Industries
12. Cooper K- Brands Ltd
13. Rumorth EA Ltd
14. PolyChem East Africa Ltd
15. Beiersdorf East Africa Ltd
16. Sadolin Paints (E.A.) Ltd
17. PZ Cussons Ltd
18. Blue Ring Products Ltd
19. Sara Lee Kenya Limited
20. Rayal Trading Co. Ltd
21. BOC Kenya Limited
22. Chemicals and Solvents E.A.
23. Decase Chemical (Ltd)
24. SupaBrite Ltd
25. Coates Brothers (E.A.) Limited

26. Deluxe Inks Ltd
27. Unilever Kenya Ltd
28. Coil Products (K) Limited
29. Desbro Kenya Limited
30. Murphy Chemical E.A Ltd

**Food Sector**

1. Africa Spirits Ltd Annum Trading Company
2. Brookside Dairy Ltd
3. Proctor & Allan (E.A.) Ltd
4. Bidco Oil Refineries Ltd
5. Candy Kenya Ltd
6. Breakfast Cereal Company(K)
7. British American Tobacco
8. Broadway Bakery Ltd
9. Centrofood Industries Ltd
10. Coca cola East Africa Ltd
11. Confec Industries (E.A) Ltd
12. Corn Products Kenya Ltd
13. Crown Foods Ltd
14. Cut Tobacco (K) Ltd
15. Deepa Industries Ltd
16. Del Monte Kenya Ltd
17. East African Breweries Ltd

18. Carlton Products (EA) Ltd
19. UDV Kenya Ltd
20. Chirag Kenya Limited
21. Eastern Produce Kenya Ltd
22. Jetlak Foods Ltd
23. Mini Bakeries (Nbi) Ltd
24. Unga Group Ltd

**Plastic and Rubber**

1. Blowplast Ltd
2. Prestige Packaging Ltd
3. Haco Industries Kenya Ltd
4. Bobmil Industries Ltd
5. Hi-Plast Ltd
6. Prosel Ltd
7. Complast Industries Limited
8. Qplast Industries
9. Jamlam Industries Ltd
10. Blowplast Ltd
11. Kamba Manufacturing (1986)
12. Sumaria Industries Ltd
13. Prestige Packaging Ltd

**Building sector**

1. Kenbro Industries Ltd

2. Manson Hart Kenya Ltd
3. Kenya Builders & Concrete ltd
4. Mombasa Cement Ltd
5. Karsan Murji & company ltd

**Paper sector**

1. Bag and Envelope Converters Ltd
2. Graphics & Allied Ltd Associated Papers & Stationery Ltd
3. Bags & Balers Manufacturers (K) Ltd
4. Guaca Stationers Ltd
5. Autolitho Ltd

**Textile Sector**

1. Fulch and Manek & Bros Ltd
2. Le-Stud Limited Metro
3. Sunflag Textile & Knitwear
4. Alpha Knits Limited
5. Midco Textiles (EA) Ltd
6. Tarpo Industries Limited
7. Apex Appaels (EPZ) Ltd
8. Mirage Fashionwear EPZ Ltd
9. Teita Estate Ltd
10. Baraka Apparels (EPZ) Ltd
11. MRC Nairobi (EPZ) Ltd
12. United Aryan (EPZ) Ltd

13. Blue Plus Limited

14. Protex Kenya (EPZ) Ltd

**Timber Sector**

1. Economic Housing Group Ltd

2. Woodtex Kenya Ltd

3. United

4. Furniture International Limited

5. Rosewood Office Systems

6. Shamco Industries Ltd

7. Statpack Industries Ltd

8. Kenya Wood Ltd

9. Newline Ltd

10. Timsales Ltd

**Motor Vehicle Assembly and Accessories**

1. Auto Ancillaries Ltd

2. General Motor East Africa

3. Mutsimoto Motor Company

4. Varsani Brake lining Ltd

5. Impala Glass Industries Ltd

6. Kenya Grange Vehicle

7. Bhachu Industries Ltd

8. Megh Cushion Industries Ltd

9. Pipe Manufacturers Ltd

10. Toyota East Africa Ltd
11. Chui Auto Spring Industries
12. Sohansons Ltd

**Metal and Allied**

1. Morris & Co. Limited
2. Theevan Enterprise Ltd
3. Khetshi Dharamshi & Co. Ltd
4. Rolling Mill Ltd Specialized Engineer Co.
5. Alloy Street Castings Ltd
6. Nails & Steel Products Ltd
7. Sandvik Kenya Ltd
8. Apex Ltd Nampak Kenya Ltd
9. Steel Structures Limited
10. ASL Steel Division Ltd
11. Orbit Engineering Ltd
12. Sheffield Steel Systems Ltd
13. ASP Company Ltd
14. Napro Industries Limited

**Pharmaceutical and Medical Equipment**

1. Alpha Medical Manufacturers
2. Madivet Products Ltd
3. KAM Industries Ltd
4. Beta Healthcare International

5. Biodeal Laboratories Ltd
6. Novelty Manufacturing Ltd
7. KAM Pharmacy Limited
8. Oss. Chemie (K)
9. Bulks Medical Ltd
10. Cosmos Limited Laboratory & Allied Limited
11. Manhar Brothers (K) Ltd
12. Pharmaceutical Manufacturing
13. Dawa Limited
14. Regals Pharmaceuticals
15. Elys Chemical Industries
16. Universal Corporation

**Leather Products and Footwear (5)**

1. Alpharama Ltd
2. Dogbones Ltd
3. Leather Industries of Kenya
4. Bata Shoe Co. (K) Ltd
5. C & P Shoe Industries Ltd