

# **QUALITY MANAGEMENT IN KENYA'S TEA SECTOR**

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## **DECLARATION**

This research project work is my original work and has not been submitted in either the same or different form to this or any other institution for any academic qualification.

Name.....Sign.....Date.....

### **Declaration by Supervisor**

This research project has been submitted with my approval as the University Supervisor.

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## **DEDICATION**

To my parents

Thanks for taking me to school, your love and prayers

To my husband Paul K. Langat;

Thanks for the support all through.

To my daughters Janise and Kayla;

Thanks for your patience.

## **ACKNOWLEDGEMENT**

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## TABLE OF CONTENTS

DECLARATION .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
LIST OF FIGURES .....	viii
LIST OF TABLES .....	ix
ABBREVIATIONS AND ACRONYMS .....	x
ABSTRACT .....	xi
CHAPTER ONE: INTRODUCTION .....	1
1.1 Background of study .....	1
1.1.1 Quality in Tea Industry .....	2
1.2 Tea Industry .....	5
1.2.1 Global Tea Industry .....	5
1.2.2 Tea Sector in Kenya .....	6
1.3 Problem Statement .....	10
1.3.1 Research Questions .....	12
1.3.2 Research Objectives .....	12
1.4 Value of the Study .....	13
CHAPTER TWO: LITERATURE REVIEW .....	14
2.0 Introduction .....	14
2.1 Theoretical Foundation of the Study .....	14
2.2 Quality Management .....	14
2.2.2 Quality Management Practices .....	16
2.3 Performance Measurement .....	17
2.3.1 Quality and Performance .....	17
2.4 Firm Characteristics .....	19
2.5 Summary and Research Gaps .....	19
CHAPTER THREE: RESEARCH METHODOLOGY .....	22

<b>3.0 Introduction .....</b>	<b>22</b>
<b>3.1 Research Design .....</b>	<b>22</b>
<b>3.2 Target Population.....</b>	<b>22</b>
<b>3.3 Data Collection.....</b>	<b>23</b>
<b>3.4 Data Analysis .....</b>	<b>23</b>
<b>CHAPTER FOUR: DATA ANALYSIS RESULTS AND DISCUSSION .....</b>	<b>24</b>
<b>4.0 Introduction .....</b>	<b>24</b>
<b>4.1 Response Rate .....</b>	<b>24</b>
<b>4.2 Demographic Characteristics of Respondents.....</b>	<b>24</b>
<b>4.2.1 Functional position of Respondents.....</b>	<b>24</b>
<b>4.2.2 Years of Experience of Respondents.....</b>	<b>25</b>
<b>4.3 Quality Management Practices adopted by the tea firms. ....</b>	<b>25</b>
<b>4.3.1 Leadership Focus.....</b>	<b>26</b>
<b>4.3.2 Customer Focus.....</b>	<b>27</b>
<b>4.3.3 Process Focus.....</b>	<b>27</b>
<b>4.3.4 Employee Involvement.....</b>	<b>28</b>
<b>4.3.5 Continuous Improvement, Innovation and Learning.....</b>	<b>29</b>
<b>4.3.6 Supplier Quality Management.....</b>	<b>30</b>
<b>4.3.7 Statistical Quality Techniques.....</b>	<b>31</b>
<b>4.3.8 Quality Standards and Awards.....</b>	<b>31</b>
<b>4.3.9 Ranking of Quality Management Practices adopted by tea firms.....</b>	<b>32</b>
<b>4.4 Organizational Performance .....</b>	<b>33</b>
<b>4.4.1 Firms performance after ISO Certification.....</b>	<b>33</b>
<b>4.4.2 Quality Management Practices and Performance.....</b>	<b>34</b>
<b>4.5 Regression Analysis .....</b>	<b>35</b>
<b>4.5.1 Regression Equation.....</b>	<b>35</b>
<b>4.5.2 Analysis of Variance.....</b>	<b>38</b>
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND .....</b>	<b>39</b>
<b>RECOMMENDATION.....</b>	<b>39</b>
<b>5.1 Introduction .....</b>	<b>39</b>
<b>5.2 Summary and conclusion .....</b>	<b>39</b>

<b>5.2.1 Quality Management Practices.....</b>	<b>39</b>
<b>5.2.3 Quality Management and Performance.....</b>	<b>40</b>
<b>5.3 Recommendations of the study.....</b>	<b>41</b>
<b>5.4 Limitations of the study.....</b>	<b>41</b>
<b>5.5 Suggestions for further research .....</b>	<b>42</b>
<b>REFERENCES .....</b>	<b>43</b>
<b>APPENDICES .....</b>	<b>46</b>
<b>APPENDIX I: RESEARCH QUESTIONNAIRE .....</b>	<b>46</b>
<b>APPENDIX II: Introductory Letter .....</b>	<b>51</b>
<b>APPENDIX III: Tea factories operating west of Rift valley region.....</b>	<b>52</b>

## LIST OF FIGURES

Figure 1.1: World Tea Production and Exports between 2004 and 2013.....	6
Figure 1.2: Kenyan Tea export earnings and prices.....	8
Figure 3.1: Conceptual Framework.....	21
Figure 4.4: Respondents years of service to the firms.....	25



## **LIST OF TABLES**

Table 4.1: Functional Positions of Respondents.....	24
Table 4.2: Elements of leadership Focus.....	26
Table 4.3: Elements of Customer Focus.....	27
Table 4.4: Elements of Process Focus.....	28
Table 4.5: Employee Involvement.....	28
Table 4.6: Continuous Improvement, Innovation and Learning.....	29
Table 4.7: Supplier Quality Managemen.....	30
Table 4.8: Statistical Quality Techniques.....	31
Table 4.9: Quality Standards and awards.....	31
Table 4.10: Quality Management Practices.....	32
Table 4.11: Firm's performance after ISO certification.....	33
Table 4.12: Performance Measures.....	35
Table 4.13: Regression Equation Coefficients.....	36
Table 4.14: Regression Equation with moderating variables coefficients.....	37

## **ABBREVIATIONS AND ACRONYMS**

<b>QM</b>	: Quality Management
<b>TQM</b>	: Total Quality Management
<b>KTDA</b>	: Kenya Tea Development Agency
<b>TRFK</b>	: Tea Research Foundation of Kenya
<b>TBK</b>	: Tea Board of Kenya
<b>KTGA</b>	: Kenya Tea Growers Association
<b>EATTA</b>	: East African Tea Trade Association
<b>ISO</b>	: International Organization for Standardization
<b>GMP</b>	: Good Manufacturing Practices
<b>QC</b>	: Quality Control
<b>GDP</b>	: Gross Domestic Product
<b>GAPs</b>	: Good Agricultural Practices
<b>EFQM</b>	: European Foundation for Quality Management
<b>CTC</b>	: Cut Tear and Curl
<b>CAC</b>	: Codex Alimentarius Commission
<b>OSHA</b>	: Occupational Safety and Health Act
<b>KS</b>	: Kenya Standard
<b>GFSI</b>	: Global Food Safety Initiative
<b>KARLO</b>	: Kenya Agricultural and Livestock Research Organization
<b>AFFA</b>	: Agricultural Fisheries and Food Authority
<b>S.D</b>	: Standard Deviation

## **ABSTRACT**

The tea sub-sector is the leading foreign exchange earner in Kenya and supports the livelihoods of thousands of Kenya who depend on its cultivation, processing and trading. The primary aim of this study was to investigate the quality management in Kenya's tea sector. The first objective of the study was to investigate the quality management practices adopted by tea firms in Kenya. The second was to find out how tea firms were performing after ISO certification and the third one was to investigate the relationship between quality management practices and performance of the tea firms. The study was carried out on 17 ISO certified tea firms that operate in the region west of the Kenyan rift valley. The firms included tea factories managed by KTDA and those that are privately owned. A descriptive research design was used. The response rate was 76% and data was collected using questionnaires that were dropped and picked. The quality management practices investigated included leadership focus, customer focus, process focus, employee involvement, continuous improvement, innovation and learning, supplier quality management, statistical quality techniques and quality standards and awards. The performance aspects that were investigated were costs, market share, order processing, product/service quality, profitability and product reliability. The findings were that the quality management practices are practiced at the tea firms and they have a positive influence on the performance of these firms. The firm characteristics of size and age were found to moderate the benefits of quality management.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of study

Quality is often used to signify the excellence of a product or service. The word may be used to indicate that a product conforms to certain physical dimension characteristics or that in service industry, professionalism has been achieved. All these reflect a customers' perspective and therefore, quality ought to be defined with the customers' requirements i.e. customers' needs and expectations in mind. Simply put, quality is meeting the customers' requirements. Broadly defined, quality is the ability of a product or service to consistently meet or exceed customer requirements (Stevenson, 2002). Crosby et al (1997) defined quality as the totality of features and characteristics of a product or a service that bear on the ability to satisfy stated or implied needs. By consistently meeting the customer requirements, the product or service provider moves the customer to a different plane of satisfaction- having a delighted customer. By meeting customers' requirements time and again, the provider creates a reputation of excellence (Oakland, 1993). This implies that the reputation enjoyed by a company is driven by, among others, quality. Quality is therefore an important weapon of competitiveness. As a complex concept, quality can only be achieved by the whole organization working together.

According to Fiegenbaum (1990), in an increasingly competitive world, quality is no longer an optional extra, it is an essential strategy: without quality an organization cannot survive. Quality management has been recognized as a comprehensive management paradigm for enhancing organizational performance and competitiveness by ensuring that an organization, product or service is consistent. Empirical research shows that quality management practices affect firm performance and competitiveness (Das et al., 2000, Douglas and Judge, 2001). According to International Organization for standardization, quality management is anchored on eight principles, namely: customer focus, leadership, involvement of people, process approach, system approach to management, continual improvement, factual approach to decision making and mutually beneficial supplier relationships.

### **1.1.1 Quality in Tea Industry**

Tea quality is the inherent characteristics' of the made teas such as flavor and chemical composition. Tea grades are not standardized worldwide and vary according to the country of origin. This means therefore that tea grade does not necessarily indicate the quality of the tea.

It is a general saying that quality of tea comes from the garden not from the factory. This is because the quality of made tea is largely affected by the size of tea shoots plucked, proportion of active shoots in the harvested crop, chemical composition of the shoots and post-harvest handling of the shoots during transportation to the factory. To this extent, there is need to observe GAPs and also improve factory processing efficiency in order to meet customer demands and enhance the value and volume of tea produced.

A study by Kathata, (2011) revealed that other than the forces of demand and supply, the quality of made tea also determines the prices of tea in the market, with higher quality teas commanding higher prices than lower quality teas. Made tea quality is largely affected by the climatic conditions of the region in which it is grown. The tea growing regions of Kenya are endowed with the ideal climatic conditions of; tropical, volcanic red soils and well distributed rainfall between 1200mm to 1400mm per annum that alternate with long sunny days.

Other major tea growing regions of the world have seasonal harvesting of tea and they have the challenge of pest attacks such as aphids. To this extent, these regions use pesticides to protect their crops. Tea tree absorbs these agrochemicals and these impacts on the quality of the made tea from such tea trees. China is the world's largest tea producer and it is also the world's biggest user of pesticides in tea production. The issue of pesticides is damaging the reputation of Chinese tea and directly affecting exports. According to a report by Greepeace in 2012 after an investigation in which

made tea samples were taken from nine well known tea companies, it was found that every one of the 18 samples from the nine tea manufacturers contained at least three different kinds of pesticides and 12 of the samples showed traces of banned pesticides. The heavy pesticide use threatens the health of both tea planters and tea processors as they come into direct contact with the pesticide used. They are the most vulnerable parts of the tea supply chain. The immense damage to tea plantation environment from the heavy use of chemical pesticides also cannot be ignored.

According to Tea Directorate, Kenyan tea is grown free of chemical pesticides because the ideal environment in which tea is grown acts as a natural deterrent to pests' infestation and disease attack.

The mode of plucking is another factor that affects the quality of tea. Effective tea plucking requires the ability to identify and pluck only those leaves that have reached the desired level of maturity. Good quality tea is usually made from young shoots of the tea bushes, conventionally, two leaves and a bud. Hand plucking has been the conventional way practiced for a long time. The method is attractive owing to the ability of the plucker to visually evaluate the leaf before it is plucked. This method is however becoming largely unattractive owing to the high labour costs since it is a labour intensive. Other tea harvesting methods that has been adopted especially by large estates is mechanized tea harvesting, where machines and shears are used to pluck tea. According to Owuor and Kwach (2012), shear and mechanical harvesting lead to decline in leaf quality. While these two methods are faster and very helpful in gathering large quantities of green leaf for mass production of tea products, they have the risk of harvesting undesired portions of the tea plant thereby producing tea products of inferior quality which will fetch low prices.

In the reports released by KTDA Ltd. factories directors in June 2012, one of the main challenges being faced by tea producers is high production costs driven by transportation costs due to poor road networks. Most of the roads from collection centers are murrum roads which deteriorate rapidly with the heavy rains experienced in the tea growing regions.

Most Kenyan standards used in the tea sector are adopted from international ones, such as International Organization for Standardization (ISO) and Codex Alimentarius Commission (CAC). In the food supply chain, Farmers have to apply Good Agricultural Practices (GAPs), Sellers of commodities/raw materials at local or international level have to apply Good Distribution Practices and the manufacturers have to apply Good Manufacturing Practices (GMPs). Food supply chain operators have to apply either national (mandatory) standards or Private (voluntary) standards. Chain supporters provide the necessary impetus while chain enablers provide the control and /or regulation. Kenya Bureau of Standards is the major chain enabler and is the national codex contact point.

The Tea Directorate conducts continuous tea factories compliance audits on tea regulations and quality and guidelines as well as on aspects of good agricultural practices (GAPs), good manufacturing practices (GMPs) and best practices in order to assure the local and international markets of sustained safety and quality. Among the key national legislation areas for compliance in safety and quality include: Environmental Management and Coordination Act 1999 on production, processing and handling of tea; Occupational Safety and Health Act (OSHA), 2007 which is a certificate of registration of a work place; The Food , Drug and Chemical Substances (Food Hygiene) Regulations (Cap 254) for the factory and factory staff handling tea; Kenya Standard-KS 459 , a standard for portable water; Kenya Standard-KS 40, standard for labeling pre packaged foods; Kenya Standard-KS 1927, standard on specifications for tea packets and containers; Kenya Standard-KS 1972, standard on bulk packaging of tea for safety, quality and integrity; Kenya Standard-KS65, standard for black tea, specifications. Factories are also encouraged to acquire ISO certification in Quality Management systems (ISO 9001:2008); Food Safety Management System (ISO 22000) and Environmental Management System (ISO 14000).

A more specific certification for the tea sector is the Rainforest Alliance. According to a report by LEI (2012), the Rainforest Alliance works to conserve biodiversity and ensure sustainable livelihoods by transforming land-use practices, business practices and consumer behavior. Within agriculture, it aims for less water pollution, less soil erosion, reduced threat to environment and human health, protection of wildlife habitat, less waste, less water use, more efficient farm management, improved conditions for farm workers, improved profitability and competitiveness for farmers and more collaboration between farmers and conservationists.

## **1.2 Tea Industry**

Tea is the one of the world's most popular beverage and is enjoyed in endless different ways ([www.globalteabrokers.com](http://www.globalteabrokers.com)). Its versatility makes it the perfect drink, adaptable to every climate and culture. The wide varieties of world teas tend to disguise the fact that they all come from the same plant, *Camellia sinesis*. The tea plant flourishes with plentiful rain, acid soils and quite specific seasonal variations in temperature.

### **1.2.1 Global Tea Industry**

Today, it is the economic and social importance of tea production that is so significant. Currently grown in 35 countries, the tea industry provides a vital source of employment and export earnings, often in the world's poorest countries.

The world's largest tea producer is China with an average of 1160 million kilos of made tea annually. Most of the tea produced in china is consumed locally with only 25% being exported.

India is the second largest world producer of tea with tea production on average of 980 million kilos per year with 80% of this consumed at the home market. Sri Lanka ranks fourth in tea production by volume. The country exports 94% of total tea produced and thus it ranks second in world exporting. Other major tea producing regions of the world include Argentina, Malawi, Indonesia, Brazil, Tanzania, Taiwan and Zimbabwe. ([www.globalteabrokers.com](http://www.globalteabrokers.com))



According to data compiled by Global Research and Data Services, global tea industry is set to expand by an annual rate of 5.8% in the coming years, mainly fuelled by demand from Asia, Middle East and the US. This is however a decline compared to the growth rate of 10% experienced in the 2008-2014 period. The situation in the world markets for tea can be characterized by oversupplies, a slow growth in demand and a fierce competition. It is necessary to reduce global supplies by stimulating domestic consumption and developing new markets.

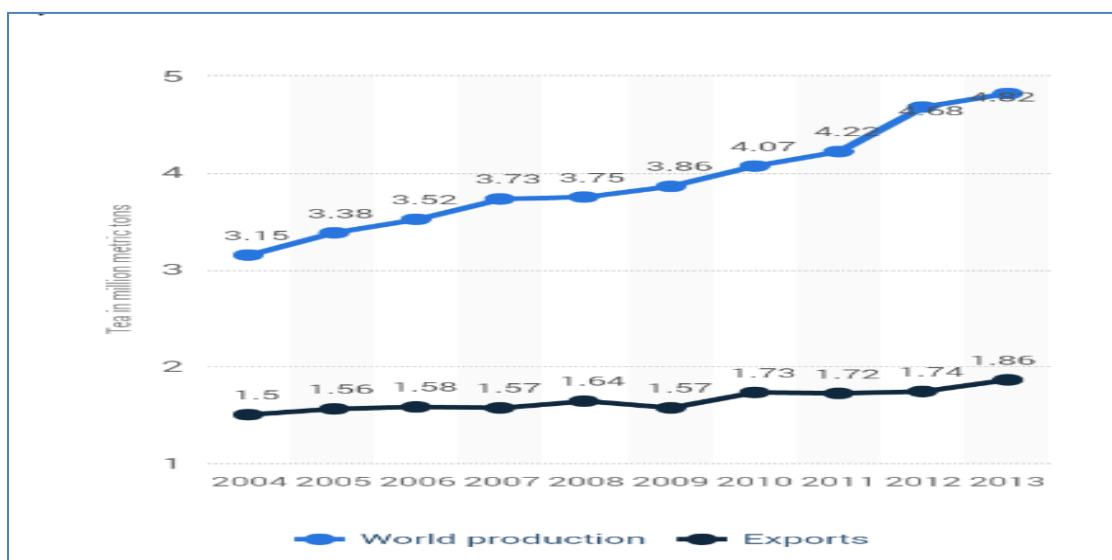


Figure 1.1: World Tea Production and Exports between 2004 and 2013.

Source; [www.statista.com](http://www.statista.com)

### 1.2.2 Tea Sector in Kenya

Tea production in Kenya has been an ongoing venture since 1924 when it was commercialized after introduction into the country in 1903 by a European settler GWL Caine. It was, then, first grown in the present day Limuru by the settler. Kenya is a world major tea producer only third to China and India. ([www.worldteanews.com](http://www.worldteanews.com)). Tea growing, processing and sale provide a source of livelihood to many Kenyans who participate in this trade.

According to a report in the Tea Research Foundation of Kenya 2010-2015 strategic plan, tea is the single leading cash crop in Kenya which makes significant contribution to the economy. In the year 2010, the country produced 399 metric tons of made tea, earning Ksh. 97 billion in foreign exchange. This represents about 26% of the total export earnings and about 4% of the GDP. In the same report, an estimated 3 million Kenyans (about 8% of the total population) derive their livelihoods from the tea industry. The crop also contributes significantly to the development of rural infrastructure. It directly contributes to environment conservation through enhanced water infiltration, reduced surface erosion and mitigation of global warming through carbon sequestration.

Tea cultivation in Kenya is favored by the ideal climate in the country's tea growing regions. These regions have tropical, volcanic red soils and well distributed rainfall ranging between 1200mm to 1400mm per annum. The rains alternate with long sunny days which attribute to these favorable conditions. Production goes on all year round with peak seasons of high crop between March and June and October to December which coincides with the rain seasons in the country. ([www.teaboard.or.ke](http://www.teaboard.or.ke)).

Kenya is the world's leading exporter of black tea by volume. Major export markets for Kenyan tea include Pakistan, Egypt, United Kingdom, Sudan, Tunisia, Libya, Yemen and Russia federation. In 2014, the country exported 499.0 million kilograms of tea. This earned the country approximately sh.94.6 billion which was a drop from the 2013 period earnings of 114.4 billion shillings. The country exports 95% of the total tea produced in the country while the remaining 5% is absorbed in the domestic market. Despite the increased earnings, the export value per kilo has been on the decline and consequently the earnings per kilo have declined. This is largely attributed to low offers for processed tea due to increased volumes being supplied to the tea market.

The tea industry is an important contributor to the Kenyan economy. Several tea firms are listed at the Nairobi securities exchange such as Kapchorua, Sasini, Limuru tea and Williamson tea but have been facing lower profits. Limuru's half year results in

the six months to June 2014 indicated a 42.55% decline in pretax profit to KES 10.79 million in comparison to the KES 18.81 million it had registered for the same period in June 2013. Kapchorua Tea recorded a 28% decline in 2013/14 half year net profit to KES 76.9 million. In a report ran by business daily on 15<sup>th</sup> March 2015, Sasini issued a profit warning for the financial year ending September 2015 due to an 86% decline in earnings for the six months through March citing a drop in tea prices which affected its revenues. The profit reduction has been caused by the fall in the tea prices being experienced due to oversupply of tea globally. Favorable weather in most growing regions and reduced demand from traditional markets has led to the glut.



Figure 1.2: Kenyan Tea export earnings and prices for period between 2012 and 2014

The Kenyan tea sector is largely divided into two: the smallholder farmers and the large plantation sector. Over 60% of Kenyan tea is grown by the smallholders. The second largest share comes from large estates owned by multinationals while the remainder is from the locally owned estates. The small holder sector has more than half a million growers who are located across the tea growing areas in the country. They deliver their tea to factories which are managed by the Kenya Tea Development Agency limited.

Key players in the Kenyan tea sector include:

Tea Directorate: The Tea Directorate came into being after the operationalization of the Crops Act of 2013 in 1<sup>st</sup> August 2014. It falls under a new regulatory body, the Agriculture Fisheries and Food Authority (AFFA). The Tea Directorate takes the place of the former Tea Board of Kenya (TBK) which was established in 1950 through an act of parliament, the Tea Act (Cap.324 1979) and the Tea (amendment) Act 1999. Its mandate is, “To regulate tea growing, manufacture and trade and to carry out research and promotion of tea.”

The Kenya Tea Development Agency Ltd: In its current status, KTDA is an agent whose primary role is to collect and process tea and marketing of the same.

Kenya Agricultural and Livestock Research Organization: KALRO came into effect after operationalization of the Kenya Agricultural and Livestock Act from 1<sup>st</sup> July 2014 which merged Tea Research Foundation of Kenya (TRFK) with three other research institutions. Its main aim is to “promote research and investigate problems related to tea and such other crops and systems of husbandry as are associated with tea throughout Kenya and including productivity (yield), quality and sustainability of land in relation to tea planting and matters ancillary thereto.” ([www.tearesearch.or.ke](http://www.tearesearch.or.ke))

The Kenya Tea Growers Association: Based in Kericho, KTGA is a voluntary organization of large scale tea growers. The main aim of the association is to address the common interests of the large scale tea growers by lobbying and reinforcing linkages with and between stakeholders on matters affecting large scale tea operations.

The East African Tea Trade Association: EATTA is a voluntary organization that brings together tea producers, brokers, tea packers, buyers and warehouse people. Its functions include facilitating the Mombasa auction, facilitate settlement of disputes within the trade, promote the best interest of the tea trade in Africa, compile and circulate statistical information to assist members in their operations and to promote close relations within the tea industry. ([www.eatta.com](http://www.eatta.com))

Mombasa Tea Auction: The auction centre is located at the port of Mombasa which is the nerve centre of warehousing, handling and shipping. The auctions are held weekly on Mondays and Tuesdays. Presently the main grades auction is held on Tuesdays and the secondary grades auction is on Mondays. The increased varieties of quality and progressively increased quantities offered have made the Mombasa auction the second largest black tea auction center in the world after Colombo in Sri-Lanka. (www.eatta.com)

Tea brokers: There are 12 registered companies as tea brokers at the Mombasa Tea Auction but currently only 10 are operating. They facilitate sale of tea on behalf of the producers.

### **1.3 Problem Statement**

Though the tea industry in Kenya has had an enviable record of growth, returns from the enterprise have declined due to stagnating unit prices of processed tea and increasing production costs (TRFK strategic plan, 2010-2015). Expansions of production capacities and favourable weather conditions have led to an increase in tea supply. Since most of the tea is exported, a slight instability in the importing regions especially the Asian countries lead to reduced demand. Increased supply and reduced demand leads to a glut in the market and consequently low prices. Due to reduced earnings, the livelihoods of small scale farmers and plantation workers have been negatively affected. To ensure a ready market for Kenyan tea, there is a need to focus on quality of tea produced in the country. About 60% of Kenyan tea is produced by KTDA managed factories and it encourages its factories to get certification in quality management systems (ISO9001:2008). Some of the factories have gotten this certification while others are in the progress and some have been recommended for certification. The implementation of ISO 9001:2008 by these factories provide a timely quality strategic approach to improve effectiveness, efficiency, reliability and reduces costs on production processes and service delivery. Despite acquiring this certification, most of the KTDA managed factories reported an increase on the cost of manufacturing in their annual reports released on 30<sup>th</sup> June 2012. To this extent, there

is need to reassess the level of entrenchment of quality management practices so as to ascertain the benefits accrued to their implementation. This will ensure that companies are not pursuing implementation of QM practices blindly and that the right attention is given to the correct priorities.

A study by Mutua (2014) on quality management practices and financial performance of cement manufacturing firms in Kenya found out that most cement manufacturing firms that implemented quality management practices recorded high sales turnover leading to better financial performance by the organizations. He noted that the mostly, these firms adopted ISO certification, benchmarking, supplier partnering, continuous improvement and six sigma. He recommended that these firms could adopt other quality management practices and assess how they affect their performance as a business. He also recommended future studies on QM practices adoption in other sectors of the economy. Another study on quality management practices adopted by sugar companies in western Kenya by Ogada (2012) revealed the importance sugar companies attach to quality improvements. She noted that there was good progress in QM implementation though there were challenges being faced. In another study done by Kamau (2013) as a case study at Bamburi Cement Company Ltd on the effect of quality management practices on quality outcomes in manufacturing firms revealed that application of quality management practices enhanced effective product and process designing and has led to introduction of more products in the organization. None of these studies focused on quality management practices in Kenyan tea sector.

A study by Nilson et al (2001) on the impact of quality practices on customer satisfaction and business results, using a national quality survey from 482 companies in Sweden, investigated how internal quality practices of product versus service organizations (employee management, process orientation and customer orientation) influence customer satisfaction and business results. The research supported the claim that organizations with a quality foundation are in a better position to adopt a customer orientation. In another study by Richard et al (2000) on total quality management and sustainable competitive advantage, by drawing on the market-based

theory of competitive advantage, resource-based theory and system theory, it was deduced that the content of TQM is capable of producing a cost or differentiation-based advantage and that the tactiness and complexity that are inherent in the process of TQM have the potential to generate the barriers to imitation that are necessary for sustainability.

Studies done on QM practices in firms revealed a host of issues as well as benefits of applying these practices. Most of the studies done have concentrated on the non-agricultural commercial and manufacturing sectors. The research questions in this study aims at bridging this gap by investigating quality management in Kenyas' tea sector which is a major agricultural sector contributor to the county's economy.

### **1.3.1 Research Questions**

The purpose of this paper is to investigate implementation of quality management in the Kenyan tea sector. This will be dealt with by answering the following research questions:

1. What are the quality management practices employed by the tea firms in the Kenyan tea sector?
2. How has the performance of tea firms changed on ISO certification?
3. What is the relationship between Quality and Performance in tea firms?

### **1.3.2 Research Objectives**

The main objectives of this study are:

1. To establish the quality management practices employed by tea firms in the Kenyan tea sector
2. To investigate how the tea firms performance has changed after ISO certification.
3. To investigate the relationship between Quality and Performance of tea firms.

#### **1.4 Value of the Study**

This study will help Kenyan tea factory management and other players in the tea sector on the implementation and knowledge gaps in the quality management practices employed and this will enable them put in place corrective and preventive measures which will foster improvement. The findings of this study will help certification bodies on the gaps that may need to be addressed in the trainings they may need to conduct as well as review their training methodology. Scholars will find this study useful as it may form a basis for further investigations into the quality management issues.



## **CHAPTER TWO: LITERATURE REVIEW**

### **2.0 Introduction**

This chapter presents information on literature reviewed in line with the topic and objectives of the study. It seeks to set the study subject in broader perspective through investigation of relevant literature.

### **2.1 Theoretical Foundation of the Study**

Organizations are increasingly recognizing the strategic benefits of quality management and this has led to the belief that effective quality management can enhance their competitive ability in the market. According to Deming (1992), QM provides the framework for implementing effective quality and productivity initiatives that can increase profitability and competitiveness of organizations. The Japanese economy was rapidly revitalized by adoption of QM principles proposed by Deming, a quality guru. According to Benson et al (1991), quality management is becoming a top priority in many U.S firms. Since quality management is an organization wide function, organization theory should be used to describe, explain and improve it. Organization theory has contributed significantly to the practice of quality management, and in turn, improved quality performance and company performance.

### **2.2 Quality Management**

Fiiegenbaum (1961) defined quality as the total composite product and service characteristics of marketing, engineering, manufacture and maintenance through which the product and service will meet the expectations of the customer. Crosby (1979) defined quality as conformance to requirements ; Goetsch and Davis (2010) defined quality as a dynamic state associated with products, services, people, processes and environments that meets or exceeds customer expectations and help produce superior value. As per Fiiegenbaum, quality management (QM) is an effective system for integrating the quality development, quality maintenance and quality improvement efforts of various groups in an organization so as to enable marketing, engineering, production and service at the most economical levels which allow for full customer satisfaction. QM, also called TQM evolved from many different

management practices and improvement processes. Quality requires building a total quality management environment because quality cannot be inspected into a product. Yongless (2000) put it that rather than trying to inspect the quality of products and services after they have been completed, QM instills a philosophy of doing the job correctly the first time. The concepts of quality assurance, Good manufacturing Practices (GMP) and Quality Control (QC) are interrelated aspects of quality management.

### **2.2.1 Quality Management System**

The basic element of quality management is an appropriate infrastructure or quality system encompassing the organizational structure, procedures, process and resources; systematic action necessary to ensure adequate confidence that a product or service will satisfy given requirements for quality. An organization will benefit from establishing an effective quality management system (Department of Trade and Industry, British Government, 2007). The cornerstone of a quality organization is the concept of the customer and the supplier working together for their mutual benefit. For this to become effective, the customer- supplier interfaces must extend into and outside of, the organization, beyond the immediate customers and suppliers (DTI, 2007).

There is a global effort to standardize food safety procedures through the Global Food Safety Initiative - GFSI (Chountalas, Tsarouchas, &Lagodimos, 2009). In 2012, researchers at the University of Arkansas showed that food manufacturers achieving certification with one of the GFSI internationally benchmarked schemes strengthen their food safety programs, resulting in safer food for consumers. A food safety management system aims to assure that there are no weak links in the food supply chain, and one of its important elements is the systems approach based on ISO 9001 quality management system (QMS) principles (Bertolini, Rizzi, &Bevilacqua, 2007). According to Carter and Rogers (2008), ISO 22000 is a derivative of ISO 9000 and is applicable to the food sector requirements. ISO 22000:2005 specifies requirements for food safety management system where an organization in the food chain needs to

demonstrate its ability to control food safety hazards in order to ensure that food is safe at the time of human consumption (Richard, 2004).

### **2.2.2 Quality Management Practices**

According to Knowles, (2011), there are a number of principles which are central to the practice of quality management. These principles include: Customer focus; if value for the customer is to be created, there is need to understand ones customers, their requirements and expectations. Strategic Focus; Quality management must be a strategic undertaking. If companies survive and thrive through delivering value to their customers, then this ought to be treated as a key strategic objective by developing a strategic vision and deploying this throughout the organization in associated goals and actions. This would therefore mean a long-term commitment and focus. Leadership focus; for things to move in any organization there ought to be commitment of leaders of the organization and their active driving of the strategy with constant positive engagement with its application. Process focus; emphasis needs to move from assessment of outcomes performance to the development and control of processes to deliver customer value. People focus; Quality management is fundamentally about people. Processes are only effective in delivering customer value if they are associated with appropriate behaviors from the individuals involved. An important aspect of managing quality is the creation of a motivated and empowered workforce able to work with and on the processes to maximize customer value. Scientific focus; quality management is fundamentally based on scientific method- Plan, Do, Study, Act.- where decisions are evaluated based on evidence and data, and these evaluations are in turn used to drive further iterations of action. This forms the basis for factual approach to decision making. Continual Improvement, Innovation and Learning; Dissatisfaction with the status quo is at the heart of quality management. Process improvement for an organization is not merely responding to problems but also proactively seeking to learn about customers, processes, behaviors, in order to improve on existing practices and develop new markets, processes and practices.

Quality management practices are key ingredients in achieving quality services to customers, some of the quality management practices used by manufacturing firms are: continuous improvement, benchmarking, supplier partnering, International Organization for Standardization (ISO), Six Sigma and Quality awards. In practice, the importance of quality management is emphasized in the awards given to organizations that achieve high standards of quality. The most widely-recognized quality awards are the Deming Prize which began as the Japan Quality Medal in 1951; European Quality Award presented by EFQM since 1991 and Malcolm Baldrige National Quality award which is an American award for performance excellence created in 1987.

## **2.3 Performance Measurement**

Performance of an organization can be defined as the final achievement of an organization and contains measures, such as the existence of certain targets to be achieved and has a period of time in achieving these targets and the realization of efficiency and effectiveness (Gibson et al., 2010). (Koontz and Donnell, 2003) defined performance as the ability of an enterprise to achieve such objectives as high profit, quality product, large market share, good financial results, and survival at pre-determined time using relevant strategy for action. Performance measurement according to Neely (2002) is the process of quantifying the efficiency and effectiveness of past actions, while Moullin (2007) defines it as the process of evaluating how well organizations are managed and the value they deliver for customers and other stakeholders. Performance measurement should be an overall management system involving prevention and detection aimed at achieving conformance of the work product or service to customer requirements. Performance measures are an important element of all TQM programs.

### **2.3.1 Quality and Performance**

Quality gurus suggest that quality is the key to the improvement of performance (Deming, 1982; Juran, 1988). Several empirical studies in developed and developing countries support this conclusion, finding a positive relationship between quality

management and performance (Flynn et al., (1995); Powell, (1995); Leppert, (1997); Easton and Jarrell, (1998); Kaynak, (2003); Prajogo and Sohal, (2006); Sila, (2007); Chung et al., (2008); Tseng and Lin (2008)).

Total quality management has been a widely applied process of improving competitiveness around the world, but with mixed success. A study of one thousand two hundred Australian and New Zealand manufacturing organizations showed that the relationship between TQM practice and organizational performance was significant in a cross-sectional sense, in that TQM practice intensely explains a significant proportion of variance in performance. Some but not all TQM practices were particularly strong predictors of performance. The categories of leadership, management of people and customer focus were the strongest significant predictors of operational performance (Samson and Terziovski, 1999).

A study done by Xingxing et al (2008) sought to find out how the practice of Six Sigma as a quality management practice influenced performance. There was criticism that six sigma simply puts traditional QM in a new package. A sample of 226 US manufacturing plants revealed that the three six sigma practices are distinct practices different from traditional quality management and that they compliment the traditional quality management practices in improving performance. Another study by Kaynak and Hartley (2005) sought to find out whether QM can also be a source of competitive advantage for high tech firms. High tech firms compete on the basis of being able to respond to dynamic environment and to quickly develop innovative new products. The study investigated the relationship between the extent of QM implementation and performance in high tech manufacturing firms. Cluster analysis done on three performance variables of total inventory turnover, product quality and sales growth showed that the high performing firms had implemented QM more extensively than low performing high tech firms.

## **2.4 Firm Characteristics**

A firm characteristic is a distinguishing feature or quality or trait of a business entity. Mohd (2005) asserted that firm characteristics seem to play a critical role in determining the overall performance of the firm. Dean, Bulent & Christopher (2000) documented that firm characteristics are essential determinants of firm performance and success. Firm size is one of the most acknowledged determinants of a firm's profit (Beard & Dess, 1981). Firm size helps achieve economies of scale and thanks to increasing production volumes the firm might reduce average unit cost. Firm age (measured as the number of years a company is operating in the market since it was founded) is an important determinant of firm dynamics. Past research shows that the profitability of firm growth, firm failure and the variability of firm growth decreases as a firm age (Evans, 1987; Yasuda, 2005). Maturities of firms bring stability in growth as firms learn more precisely their market positioning, cost structures and efficiency levels.

In a study on firm characteristics, TQM and financial performance (Kevin & Vinod, 2001), the characteristics they examined were firm size, the degree of capital intensity, the degree of diversification, the timing of TQM implementation and the maturity of the program. They found out that smaller firms do significantly better than larger firms. The evidence weakly supported the hypothesis that less capital intensive firm do better than more capital intensive firms and more focused firms do better than more diversified firms. The implications of these results are that many organizations' characteristics moderate the benefits of TQM implementation.

## **2.5 Summary and Research Gaps**

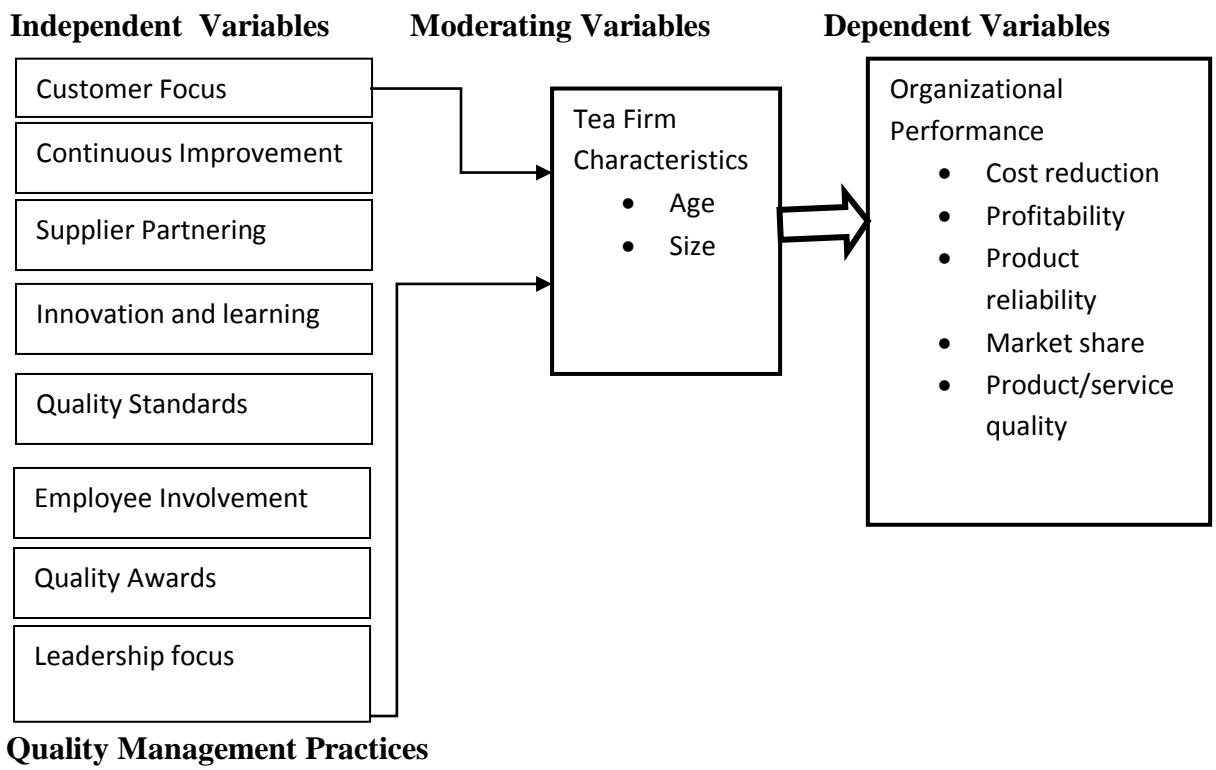
From the literature reviewed, quality management is an important aspect in business pas it has the potential to impact on an organizations performance. Fiegenbaum put it that in an increasingly competitive world, quality is no longer an optional extra; it is an essential strategy and that without quality an organization cannot survive. The generation of quality products and services demand total commitment from the entire organization i.e. it requires TQM. TQM in an organization brings all the people

together to ensure improvement in product-process quality, the work environment and working culture.

Quality management is a way of planning, organizing and directing that will facilitate and integrate capabilities of all employees for continuous improvement of anything and everything in an organization to attain excellence. Numerous researches have been done on quality management for different sectors. Recent study by Mutua (2014) on quality management in cement factories, Ogada (2012) on quality management practices in Kenyan sugar companies and Sigei (2014) on TQM and performance in pharmaceutical forms in Nairobi reveal the importance of quality management adoption by organizations. Only a few studies have been done focusing on quality management in the agricultural sector, especially the tea sub-sector. To this extent, this study aims to focus on quality management in the Kenyan tea sector and hence bridge this gap.

## **2.6 Conceptual Framework**

The relationship between the quality management practices as the independent variables and the organizational performance as the dependent variable with the moderating variables of firm characteristics is as presented in figure 3.1 below.



**Figure 3.1: Conceptual Framework**



## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.0 Introduction**

This chapter describes the research design, population of study, data collection methods, data analysis techniques used and a summary of the chapter.

### **3.1 Research Design**

A descriptive research design was chosen for the study. Ogada (2012) in her study on quality management practices adopted by sugar manufacturing in western Kenya and Sigei (2014) in his study on total quality management and performance of multinational pharmaceutical firms in Nairobi used similar research design for their study. The research design was found appropriate because according to Rick (2014), it gathers quantifiable information that can be used for statistical inference on the target population through data analysis. The research design also captures the population as is at the time of the study and thus no alterations are done to influence the outcome of the information gathered.

### **3.2 Target Population**

The targeted population includes both KTDA managed factories and privately owned tea processing factories west of the rift valley. Most of tea in Kenya is grown in the western region of the Rift valley. The region is home to the largest tea private firms in the country. In this region, there are twenty KTDA managed factories and fourteen privately owned factories.

The study will be done through a sample survey to determine and evaluate the quality management practices and their influence on performance of tea factories engaged in tea production in the region west of the rift valley. A 50% sample of both KTDA managed and privately owned tea factories will be used to come up with the desired data. This will translate to a sample size of seventeen factories.

### **3.3 Data Collection**

Both primary and secondary data will be collected for the study. Primary data will be collected using questionnaires. In each factory, the quality manager or equivalent will fill the questionnaire. This group of respondents is chosen as they are deemed to understand the quality management practices adopted by the firms and their impact in the factory's performance. Secondary data will be obtained from the Tea Directorate and audited financial reports for the companies.

### **3.4 Data Analysis**

After data collection, all the questionnaires will be checked for accuracy and completeness. To satisfy the first objective, quantitative data collected will be analyzed using descriptive statistics as percentages, means and standard deviation and presented in charts and tables. A regression model will be used to determine the relationship between quality and performance of the tea firms and thereby satisfy objective two. The regression model would be in the form:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + e$$

Where: Y is organizational performance;  $\beta_0$  is the regression constant,  $\beta_i$  ( $i = 1 - 7$ ) is the regression coefficient; e is the error term, and  $X_1$ - $X_7$  is leadership focus, customer focus, process focus, employee involvement, continuous involvement, innovation and learning, supplier quality management and statistical quality techniques.

## CHAPTER FOUR: RESULTS AND DISCUSSION

### 4.0 Introduction

This chapter presents the findings, analysis and interpretation of the data from the study. The study sought to establish the quality management practices adopted by tea firms in Kenya and to investigate the relationship between quality and performance of these tea firms.

### 4.1 Response Rate

Out of the 34 questionnaires given to the targeted respondents, 26 of them were collected back dully responded to while for the remaining 8, the respondents were not available citing busy schedules as reasons for not being available. This translated to a 76.4% response rate which is in line with the findings of Coopers & Schindler (2000) who said that a questionnaire response rate of at least 75% is adequate for a study to continue.

### 4.2 Demographic Characteristics of Respondents

The study sought to find out the demographic chacteristics of respondents such as number of years served in the company and functional position of the respondents in terms of job title.

#### 4.2.1 Functional position of Respondents

The functional positions of the respondents were sought by the researcher and the responses are as shown in table 4.1 below.

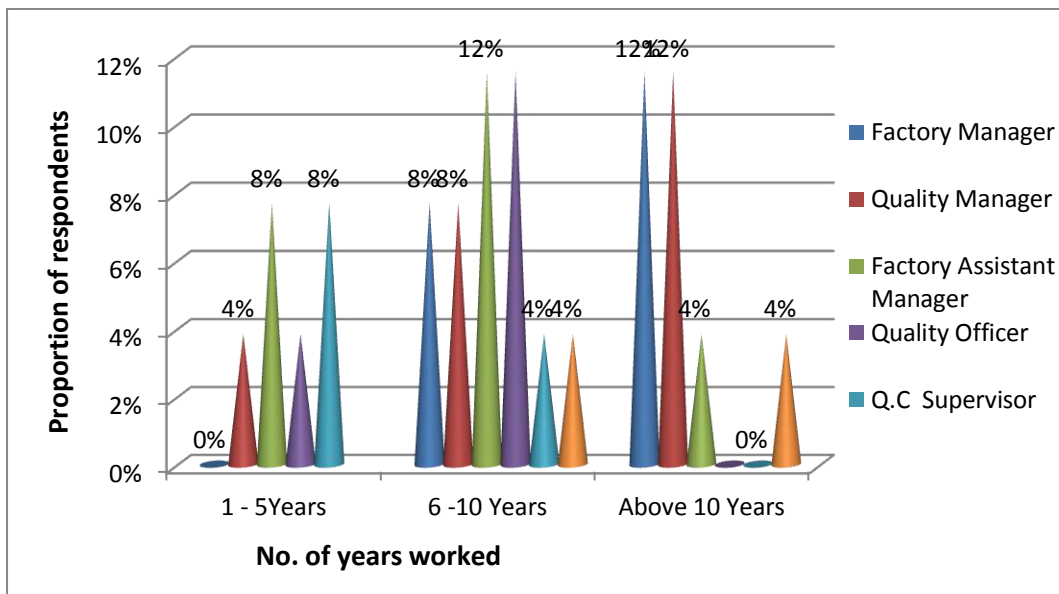
**Table 4.15: Functional Positions of Respondents**

Functional Position	Frequency	Percentage
Factory Manager	5	19.2%
Factory Assistant Manager	6	23.1%
Quality Manager	6	23.1%
Quality Officer	4	15.4%
Q.C Supervisor	3	11.5%
Q.A Assistant	2	7.7%
Total	26	100%

From the analysis it is evident that the respondents were top workers in the operations and quality of the tea firms and are therefore knowledgeable on the issues of quality in the respective tea firms.

### 4.2.2 Years of Experience of Respondents

The study sought to find out the number of years that the respondents had served in the companies they worked for as presented in figure 4.1 below.



**Figure 4.1: Respondents years of service in the firms**

The data collected showed that the average number of years worked by each respondent is 8 years. The majority of the respondents, at a total of 77%, had served for 6 years and above. This indicates that they had the experience and knowledge on quality management issues in the firms they were working for and therefore could respond to the questionnaires knowledgeably.

### 4.3 Quality Management Practices adopted by the tea firms.

The first objective of the study sought to find out the quality management practices employed by the tea firms. The quality management practices that were explored were leadership focus, customer focus, process focus, employee involvement, continuous

improvement, innovation and learning, supplier quality management, statistical quality techniques, quality standards and awards. Using a 5 point Likert scale questionnaire presented to the respondents, the study sought to find out whether these practices were employed in the tea firms. The respondents were to indicate to what extent the indicated quality management practices were used in their firms. Their responses were scored as follows: To a very large extent had a score of 5, To a large extent had a score of 4, Moderate extent had a score of 3, To a small extent had a score of 2 and Not at all had a score of 1. For each of the questions explored in the quality management practices, the scores of the responses were summed up and divided by the total number of respondents to give a mean score of the response; a standard deviation of the responses were computed to give a standard error of the response. A mean score greater than 3.5 meant that the aspect was practiced while a mean score less than 2.5 meant that the aspect was not practiced; on the other hand a mean score between 2.5 and 3.5 meant that the respondents were neutral on whether or not the aspect was practiced.

### 4.3.1 Leadership Focus

Four elements were used to evaluate the leadership focus practice and the results are as presented in table 4.2 below:

**Table 4.16: Elements of leadership Focus**

<b>Elements of Leadership Focus</b>	<b>Mean Score</b>	<b>S.D</b>
Management is actively involved in quality improvement	3.92	0.3922
Management provides adequate resources to carry out activities efficiently	3.85	0.3679
Management pursues long-term quality objectives	3.88	0.3258
Departmental heads accept responsibility for quality of products.	2.88	0.5159

The analysis of the responses on elements of leadership focus revealed that management of tea firms does provide adequate resources for activities to be carried

out efficiently, is involved in quality improvement and that it pursues long-term quality objectives. The respondents were however neutral on whether the departmental heads who form part of management of the tea firm whether they accept responsibility for quality of products or not.

### 4.3.2 Customer Focus

Three elements in relation to customer focus were evaluated as presented in table 4.3 below.

**Table 4.17: Elements of Customer Focus**

<b>Elements of Customer Focus</b>	<b>Mean Score</b>	<b>S.D</b>
The company has effective process for resolving customer complaints.	4.04	0.4455
Employees are encouraged to consider customers needs and expectations	3.96	0.4455
Company carries out market research to determine its customers' needs and wants	2.71	0.4629

From the findings on customer focus in table 3 above, the most practiced element is that the companies have effective processes for resolving customer complaints with a mean score of 4.04. The respondents however were neutral on the practice of carrying out of market research on customers' needs and wants.

### 4.3.3 Process Focus

The study sought to evaluate the process focus aspect of quality management of tea firms using three elements as presented in the table 4.4 as follows:

**Table 4.18: Elements of Process Focus**

<b>Elements of Process Focus</b>	<b>Mean Score</b>	<b>S. D</b>
Company has a clear set of standard operating procedures(SOPs) clearly understood by operating staff	3.65	0.6288
The company has a clear set of work instructions	3.62	0.6373
Company has a clear quality manual	3.58	0.6433

From the table above, the mean scores for all the elements for process focus were above 3.5 implying that all the aspects of process focus are practiced by the tea firms. The most largely practiced element was that the companies have a clear set of standard operating procedures clearly understood by operating staff with a mean score of 3.68 closely followed by the practice companies have clear set of work instructions at a mean score of 3.62. The company has a clear quality manual ranked third with a mean score of 3.58.

#### **4.3.4 Employee Involvement**

The study explored the practice of employee involvement using elements as demonstrated in the table 4.5 below:

**Table 4.19: Employee Involvement**

<b>Elements of Employee Involvement</b>	<b>Mean Score</b>	<b>S.D</b>
Employees are involved in meeting company objectives	3.65	0.4852
Employees cooperate and work in teams	3.31	0.4707
All staff attend regular departmental meetings	2.38	0.4961
Employees are responsible for the tasks they perform.	3.81	0.4019
High level of integrity and ethics in employees is achieved	3.42	0.5038
Employees are given feedback on performance	4.08	0.5602

From the analysis on table 5 above, three of the six elements explored had mean score greater than 3.5 implying that they are largely practiced in the tea firms. The most practiced element is giving feedback to employees on performance followed by employees are responsible for the task they perform. The respondents were however neutral on the practice of two of the remaining three elements which had mean score between 2.5 and 3.5. One element on regular attendance of departmental meetings by staff had a mean score of less than 2.5 and it is concluded that this element is not practiced.

### 4.3.5 Continuous Improvement, Innovation and Learning

The study sought to investigate the continuous improvement, innovation and learning practice among the tea firms. The results are as shown in the table 4.6 below:

**Table 4.20: Continuous Improvement, Innovation and Learning**

<b>Elements of Continuous Improvement, Innovation and Learning</b>	<b>Mean Score</b>	<b>S.D</b>
Work processes are frequently reviewed for improvement	3.73	0.4523
Training needs for employees are frequently evaluated	3.15	0.6127
The company improves employees competencies through trainings	3.23	0.7104
Employees are seen to apply better methods after learning new skills.	2.58	0.6433
Company encourages employees to come up with new ideas for improvement.	3.85	0.5435
The company undertakes quality audits and evaluation regularly	4.04	0.4455

From the analysis on the table above, the most practiced element is the undertaking of regular quality audits by the tea firms at a mean score of 4.04 followed by the element on employees being encouraged to come up with new ideas at a mean score of 3.85.



The respondents were neutral on the practice of three aspects i.e. frequent evaluation of employees training needs mean score at 3.15, improvement of employees' competencies through trainings mean score at 3.23 and that employees are seen to apply better methods after learning new skills at a mean score of 2.58.

#### 4.3.6 Supplier Quality Management

The researcher sought to find out the practice of supplier quality management by tea firms in Kenya. The responses by the respondents are as shown in the table 4.7 below:

**Table 4.21: Supplier Quality Management**

Elements of Supplier Quality Management	Mean Score	S.D
The company has an updated list of competent suppliers	3.62	0.6972
The company purchases materials only from qualified suppliers	3.69	0.5491
Company offers technical assistance to suppliers	2.81	0.6337
The company works closely with the suppliers to improve processes.	3.31	0.6794

The mean score of two of the four elements investigated had mean scores above 3.5 implying that they are practiced by the firms. The respondents were of the opinion that the firms have updated list of competent suppliers and that they purchase materials and services from qualified suppliers. The respondents however were neutral on the aspects of the firms offering technical assistance to suppliers (mean score 2.81) and the firms working closely with suppliers to improve processes (mean score 3.31).

### 4.3.7 Statistical Quality Techniques

The study also sought to explore the use of statistical quality control in the tea firms using two elements and the results are as presented in table 4.8 below

**Table 4.22: Statistical Quality Techniques**

Elements of Statistical Quality Techniques	Mean Score	S.D
Statistical techniques are used for product release	3.42	0.6433
Management encourages use of statistical techniques	2.46	0.6469

From the analysis on table 8 above, the respondents were neutral on the use of statistical techniques for product release which had a mean score of 3.42. The aspect of management encouraging use of statistical techniques in the firms had a mean score of 2.46 and thus it's not practiced in the tea firms.

### 4.3.8 Quality Standards and Awards

In relation to quality standards and awards, the study sought to find out whether or not the firms had the three elements used to explore this practice. The findings are as presented in table 4.9 below:

**Table 4.23: Quality Standards and awards**

Elements of Quality Standards and Awards	Yes	No
Quality management is included in the company vision	●	
The company is certified for Rainforest Alliance'	●	
The company has been given a quality award (Specify)		●

The Responses indicate that the firms have quality management included in the vision statements of the firms and that some of the firms were rainforest alliance certified. The companies however had not received any quality awards.

### 4.3.9 Ranking of Quality Management Practices adopted by tea firms

From the study, an overall rating of all the quality management practices explored i.e. leadership focus, customer focus, process focus, employee involvement, statistical quality control, supplier quality management and continuous improvement, innovation and learning was done. The results are as shown in the table 4.10 below:

**Table 4.24: Quality Management Practices**

Quality Management Practice	Mean Score	S.D
Leadership Focus	3.63	0.4005
Customer focus	3.57	0.4513
Process Focus	3.62	0.6365
Employee involvement	3.44	0.4863
Continuous improvement, Innovation and Learning	3.43	0.5679
Supplier Quality Management	3.36	0.6399
Statistical Quality Techniques	2.94	0.6451

The most practiced quality management practice was leadership focus with a mean score of 3.63. This was closely followed by process focus with a mean score of 3.62. The third was customer focus with a mean score of 3.57 followed by employee involvement at a mean score of 3.44. The fifth was continuous improvement innovation and learning which had a mean score of 3.43 and was followed by supplier quality management at a mean score of 3.36. The last one was statistical quality techniques which had a mean score of 2.94.

From the above analysis, it is evident the importance that tea firms accord to leadership focus as far as quality management is concerned. Leaders in an organization ought to be seen at the forefront of initiatives geared towards the realization of an organizations strategic objective. Similarly, customer focus and process focus are also practiced in the tea firms. The tea firms are seen to understand their customers' requirements and expectations. On process focus, these firms are

seen to be active in development and control of processes to deliver customer value. The analysis shows that tea firms practice statistical quality techniques to a lesser extent. In statistical quality techniques, decisions are evaluated based on evidence and data, and these evaluations are in turn used to drive further iterations of action. This forms the basis for factual approach to decision making.

#### **4.4 Organizational Performance**

The study sought to investigate the performance of the tea forms after they got ISO certification and also the relationship between the presence of quality management practices and firms performance if any.

##### **4.4.1 Firms performance after ISO Certification**

The second objective of the study was to determine how the firms’ performance had changed with ISO certification. The respondents were required to indicate to what extent their firm’s performance had changed after ISO certification. They were to indicate whether the firm’s performance had declined, remained the same, improved by 0-10%, 11-20%, 21-25% or by over 30%. The responses by the respondents are as in the table below:

**Table 4.25: Firm's performance after ISO certification**

<b>Observed Change</b>	<b>No. of Respondents</b>	<b>Percentage</b>
Remained the same	5	19.2%
Declined	0	0%
Improved by 0-10	10	38.5%
Improved by 11 to 20	11	42.3%
Improved by 21 to 25	0	0%
Improved by Over 30%	0	0%

From table 11 above, 19.2% of the respondents were of the opinion that the firm’s performance had remained the same even after ISO certification while 38.5%

indicated that the firm's performance had improved by a 0-10% margin. The remaining 42.3% of the respondents were of the opinion that the performance had improve by 11-20% 'margin. None of the respondents indicated that the performance had declined.

The observation that the performance of these firms had mostly improved concurs with the expectation that ISO certification is supposed to lead to advantages in the processes of organizations. These benefits include such things as improvement in throughput time, increase in technical flexibility, improvement of co-ordination of activities, improvement in product or service specifications, increase in internal and external delivery performance and improvement in efficiency. The firms from which data was collected were ISO 9001:2008 certified and hence according to Gotzamani & Tsiotras (2001), they are able to better manage and synchronize operations through documentation of processes, clearing out ambiguities and clearly defining duties and responsibilities among employees. More importantly it introduces a preventive way of managing quality, focusing mainly on the prevention of errors

#### **4.4.2 Quality Management Practices and Performance**

The study, in its third objective, sought to investigate the relationship between the practice of quality management and the firm's performance. The elements of a firms performance used were reduction in costs, increase in market share, improved order processing, improved product/service quality, increase in profitability and improved product reliability. The respondents were requested to respond to the above elements as to whether the performance had either declined, remained the same, or improved by a 0 -10%, 11 -20%, 21 -25% or by over 30%. Score assigned to each were: decline had a -1, remained the same scored zero, improved by 0 -10% scored 1, 11 -20% scored 2, 21-25% scored 3, 26-30% scored 4 and over 30% scored 5. The average scores for the respondents are shown in table 4.12 below:

**Table 4.26: Performance Measures**

<b>Performance Measure</b>	<b>Mean score</b>	<b>S.D</b>
Reduction in costs	1	0.5099
Increase in market share	1	0.4836
Improved order processing	3	0.6127
Improved product/service quality	2	0.6373
Increase in profitability	1	0.6481
Improved product reliability	2	0.6276

From the table above, it can be deduced that performance measures of reduction in costs, increase in market share and increase in profitability scored 1 and this implies that these measures had 0-10% improvement. Improvement in product/service quality and improvement in product reliability had a mean score of 2 implying that these measures had an 11-20% increase.

## **4.5 Regression Analysis**

Regression analysis was used to show the relationship between quality management practices and performance of tea manufacturing firms.

### **4.5.1 Regression Equation**

The regression equation to show the relationship between performance and the quality management practices was found to be:

Performance = 0.0080 Leadership focus + 0.698 Customer focus + 0.502 Process focus + 0.418 Employee involvement + 0.473 Continuous improvement, innovation and learning + 0.122 Supplier quality management+ 0.337 Statistical quality techniques.

The table 4.13 below shows the regression equation coefficients.

**Table 4.27: Regression Equation Coefficients**

<b>Predictor</b>	<b>Coef</b>	<b>SE Coef</b>	<b>t</b>	<b>P-value</b>
Leadership focus	0.00804	0.03965	0.20	0.040
Customer focus	0.6984	0.1769	3.95	0.000
Process focus	0.5018	0.1476	3.40	0.001
Employee involvement	0.4179	0.1924	2.17	0.033
Continuous improvement, innovation and learning	0.4728	0.1963	2.41	0.019
Supplier Quality Management	0.1223	0.1594	0.77	0.445
Statistical Quality Techniques	0.3365	0.1735	1.94	0.056

From the regression equation, an increase by one unit of each quality management practices improves the performance by a magnitude indicated by the coefficient value of the predictors. The p-values of the parameters on leadership focus, customer focus, process focus, employee involvement, continuous improvement, innovation and learning and statistical quality techniques are all lower than the pre-selected alpha-level of 5% and are therefore statistically significant implying that the association between the quality management practices and performance is statistically significant i.e. the association between these practices and performance is not as a result of chance. The p-value of supplier quality management, however, is greater than 0.05 and are therefore not statistically significant.

On considering the age and size as moderating variables, the regression equation becomes as follows:

$$\text{Performance} = 0.241 \text{ Leadership focus} + 0.200 \text{ Customer focus} + 0.359 \text{ Process focus} + 0.123 \text{ Employee involvement} + 0.414 \text{ Continuous improvement innovation and learning} + 0.247 \text{ Supplier quality management} + 0.269 \text{ Statistical quality techniques} + 0.0022 \text{ age} - 0.000087 \text{ size}$$

The regression equation coefficients after considering the moderating variables is as shown in table 4.14 below.

**Table 4.28: Regression Equation with moderating variables coefficients**

<b>Predictor</b>	<b>Coef</b>	<b>SE Coef</b>	<b>T</b>	<b>P</b>
Leadership focus	0.2406	0.1161	2.07	0.040
Customer focus	0.1998	0.1634	1.22	0.023
Process focus	0.3586	0.3140	2.68	0.008
Employee involvement	0.1230	0.1012	1.22	0.026
Continuous improvement, innovation and learning	0.41421	0.09773	4.24	0.000
Supplier Quality Management	0.2471	0.1148	2.15	0.033
Statistical Quality Techniques	0.2691	0.1665	1.62	0.0108
Age	0.00219	0.01032	0.21	0.032
Size	-0.000087	0.000095	0.92	0.050

From the regression equation, the inclusion of the moderating variables shows that as the firm ages its performance is positively influenced. However the analysis indicates that as the firms increase in size, its performance is to a small extent negatively affected. The p-values for all the variables are less than the alpha value and hence statistically significant. This therefore means that the observed relationship between the quality management practices and performance of the tea firms is not merely by chance. The practices therefore do actually affect firms' performance and that the age and size characteristics of the firms do influence the extent to which the quality management practices influence the firms' performance. The findings that the firm age positively influences the firms' performance supports past research findings that firm age (measured as the number of years a company is operating in the market since it was founded) is an important determinant of firm dynamics. The profitability of firm grows as the firm ages whereas firm failure and the variability of firm growth decreases as a firm age (Evans, 1987; Yasuda, 2005). Maturities of firms bring



stability in growth as firms learn more precisely their market positioning, cost structures and efficiency levels.

#### 4.5.2 Analysis of Variance

Source	DF	SS	MS	F	P
Regression	7	210.743	30.106	47.23	0.000
Residual Error	71	45.257	0.637		
Total	78	256.0			

S = 1.547    R-Sq = 17.94%    R-Sq (adjusted) = 17.48%

From the variance analysis, the P-value was found to be 0.000. Since this value is less than the pre-selected alpha value of 5%, this indicates that the linear predictors are not sufficient to explain the variation in performance. This is also evident from the R-Sq value of 17.94%. This value indicates that the quality management practices explain only 17% of the variations in the performance. This therefore means that there are other factors that are responsible for the variations in the firms' performance. Other factors such as changes in consumer preferences, climatic changes especially for agricultural oriented firms, political challenges among others could all affect a firms' performance.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION**

### **5.1 Introduction**

This chapter presents the summary of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were focused on addressing the objective of this study which was to investigate quality management practices and their influences in the performance of tea firms in Kenya.

### **5.2 Summary and Conclusion**

The study sought to investigate the quality management practices by tea firms in Kenya and their influence on the performance of these firms.

#### **5.2.1 Quality Management Practices**

The first objective of the study was to investigate the quality management practices employed by tea firms in Kenya. On leadership focus, the research established that the most practiced element was that management is actively involved in quality improvement and that management pursues long-term quality objectives. On process focus, the most practiced element was that the firms had clear set of standard operating procedures that are clearly understood by the operating staff. On customer focus, the presence of an effective process of resolving customer complaints was the most practiced element whereas on employee involvement, regular feedback to employees on performance was the most practiced element. The firms indicated that this feedback is given on a monthly basis and hence the employees are aware of their performance. Undertaking of regular quality audits and evaluations was the most practiced element of continuous improvement innovation and learning. On this, the respondents indicate that the firms conduct self-inspections and quality audits semi-annually. That the firms purchase raw materials from qualified suppliers only was the most practiced element of supplier quality management. On statistical quality techniques, the firms practiced the use of quality techniques for product release.

### **5.2.2 Quality Management and Performance**

On quality management and performance, the study sought to find out how the tea firms had performed after ISO certification as its second objective. The respondents were to compare the performance of their firm before and after ISO certification. The study found out that 81% of the firms had their performance improve in that period while 19% had remained at the same performance level. 38% of the firms had their performance improve by 0-10% while 42% had their performance improve by 11-20%. None of the firms had their overall performance decline in the period after ISO certification. These findings were in line with Thuo (2014) who established that ISO 9001 is beneficial in terms of improving operational performance of service organizations in Kenya.

The third objective of the study sought to find out the relationship between quality management and performance. The respondents were asked to indicate how the performance of their firms had changed over the last five year period. The performance measures that were investigated were changes in costs, market share, profitability, order processing, product/service quality and product reliability. The respondents were to respond whether these measures had declined, remained the same or improved by 0-10%, 11-20%, 21-25%, 26-30% or by over 30%. The study established that order processing had improved the most by 21-25% followed by product reliability and product/service quality which had improve by 11-20%. Market share and profitability had the least change as they improved by 0-10%. The research found out that quality management practices had a positive influence on the performance of the tea firms on all the measures that were investigated. The employment of the quality management practices was found to explain about 17.94% of the changes in performance. It can be concluded that the findings of this study are in line with Ardestani and Amirzadeh (2014), who observed a positive relationship among TQM and organizational performance. In a related study, Mutua (2014) did a research on quality management practices and financial performance of cement manufacturing firms in Kenya established that cement firms that practiced quality

management recorded higher sales turnover and hence improved financial performance.

### **5.3 Recommendations of the Study**

The evidence that quality management practices positively influences firms' performance is an important indicator to government that it needs to have regulation requiring organizations especially in the public sector have quality management systems that will encourage the adoption of these practices so as to improve the performance of the institutions. The regulatory bodies need to ensure that firms not only exhibit compliance to requirements for certification for systems such as ISO but also that there is continuous practice of the laid down requirements so that the firms and the recipients of their products and services can reap the benefits of the practices.

This study recommends that all tea manufacturing firms continue practicing quality management practices. It also recommends that those firms that have not adopted quality management practices do so as it is evident that this leads to improved performance for the firms. The establishment and implementation of quality management practices will form a strategic approach to practical and realistic actualization of the objectives of an organization.

### **5.4 Limitations of the Study**

A number of limitations were encountered in the course of this study. The most ideal approach to ascertain the presence of quality management practices would have been observation of the work practices, inspection of site and random staff interviews. There were issues of confidentiality with some companies hesitant to provide information fearing that it might not be used for the indicated purposes. The researcher also encountered some respondents who could not provide information citing their busy schedule. The time frame for the study was short and could not allow waiting until they got time to respond to the questions.

## **5.5 Suggestions for Further Research**

The study focused on those tea manufacturing firms that are ISO certified. It is suggested that a study could be done on the adoption of quality management practices and performance of those firms that are certified vis-a-is those that are not certified. The study established that quality management practices explain about 18% of the variation in performance of the tea firms. Further study could be done to establish the other factors that are responsible for the remaining 82% variation in performance that cannot be explained by quality management practices. This will help tea firms get awareness on all the factors that influence their performance.

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## APPENDICES

### APPENDIX I: RESEARCH QUESTIONNAIRE

Please indicate your responses to the questions in the spaces provided.

#### PART A: General Information

1. Employee name (optional)\_\_\_\_\_
2. Department\_\_\_\_\_
3. Job Title\_\_\_\_\_
4. Number of years worked in the company\_\_\_\_\_
5. Number of employees in the company\_\_\_\_\_

#### PART B: Quality Management Practices

The following statements relate to quality management practices. Please tick in the box that corresponds to your response for the question.

Quality Management Practices						
	<b>Section A</b>	<b>5-To a very large extent</b>	<b>4-To a large extent</b>	<b>3-Moderate Extent</b>	<b>2-To a small extent</b>	<b>1-Not At all</b>
1	Management is actively involved in quality improvement					
2	Management provides adequate resources to carry out activities efficiently					
3	Management pursues long-term quality objectives					
4	Departmental heads accept responsibility for quality of products.					
	<b>Section B</b>	<b>5-To a very large extent</b>	<b>4-To a large extent</b>	<b>3-Moderate Extent</b>	<b>2-To a small extent</b>	<b>1-Not At all</b>
1	The company has effective process for resolving customer complaints.					
2	Employees are encouraged to consider customers needs and expectations					
3	Company carries out market research to determine its customers' needs and wants					
	<b>Section C</b>	<b>5-To a very large extent</b>	<b>4-To a large extent</b>	<b>3-Moderate Extent</b>	<b>2-To a small extent</b>	<b>1-Not At all</b>

1	Company has a clear set of standard operating procedures(SOPs) clearly understood by operating staff (please provide a copy)					
2	The company has a clear set of work instructions (please show copy)					
3	Company has a clear quality manual (please show copy)					
	<b>Section D</b>	<b>5-To a very large extent</b>	<b>4-To a large extent</b>	<b>3-Moderate Extent</b>	<b>2-To a small extent</b>	<b>1-Not At all</b>
1	Employees are involved in meeting company objectives					
2	Employees cooperate and work in teams					
3	All staff attend regular departmental meetings					
4	Employees are responsible for the tasks they perform.					
5	High level of integrity and ethics in employees is achieved					
5	Employees are given feedback on performance					
	<b>Section E</b>	<b>5-To a very large extent</b>	<b>4-To a large extent</b>	<b>3-Moderate Extent</b>	<b>2-To a small extent</b>	<b>1-Not At all</b>
1	Work processes are frequently reviewed for improvement					
2	Training needs for employees are frequently evaluated					
3	The company improves employees competencies through trainings					
4	Employees are seen to apply better methods after learning new skills.					
5	Company encourages employees to come up with new ideas for improvement.					
6	The company undertakes quality audits and evaluation regularly					
	<b>Section F</b>	<b>5-To a very large extent</b>	<b>4-To a large extent</b>	<b>3-Moderate Extent</b>	<b>2-To a small extent</b>	<b>1-Not At all</b>
1	The company has an updated list of competent suppliers					
2	The company purchases materials only from qualified suppliers					
3	Company offers technical assistance to suppliers					
4	The company works closely with the suppliers to improve processes.					

	<b>Section G</b>	<b>5-To a very large extent</b>	<b>4-To a large extent</b>	<b>3-Moderate Extent</b>	<b>2-To a small extent</b>	<b>1-Not At all</b>
1	Statistical techniques are used for product release					
2	Management encourages use of statistical techniques					
	<b>Section H</b>	<b>YES</b>	<b>NO</b>			
1	Quality management is included in the company vision					
2	The company is certified for Rainforest Alliance'					
3	The company has been given a quality award (Specify)					

### Others

1. How often are self-inspections and quality audits done in the factory?

.....

2. How often are departmental meetings held in the company?

.....

3. How often are employees given feedback on performance?

.....

4. How often are employee training needs evaluated?

.....

5. How often are work processes reviewed for improvement?

.....

6. Which of the following do you use? (Tick all that are used in your factory)

- Control Charts
- Dash boards
- Process maps
- Balanced score cards
- Acceptance sampling

Any other(s).....

7. Please provide a copy of quality policy statement.

8. Please comment on any other Quality Management issue in your organization:

.....

.....

**PART C: Organizational Performance**

In terms of average percentage, indicate to what extent the following performance measures have changed over the last five years.

Performance Measure		Improved By					Remained the same	Declined
		1_ (0-10%)	2_ (11-20%)	3_ (21-25%)	4_ (26-30%)	5_ over 30%		
1	Reduction in costs							
2	Increase in market share							
3	Improved order processing							
4	Improved product/service quality							
5	Increase in profitability							
6	Improved product reliability							

1. When was your firm ISO certified? Year.....

2. Compare the performance of your firm before and after ISO certification

(Choose one)

- Improved by: 0-10%
- 11-20%
- 21-25%
- Over 30%
- Declined
- Remained the same

**Others**

1. Comment on any other performance issue in your organization

.....

.....

.....

.....

.....

2. Please provide me with the latest financial statement (if available)

## APPENDIX II: Introductory Letter



### UNIVERSITY OF NAIROBI SCHOOL OF BUSINESS MBA PROGRAMME

Telephone: 020-2059162  
Telegrams: "Varsity", Nairobi  
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P.O. Box 30197  
Nairobi, Kenya

DATE 18/8/2015

#### TO WHOM IT MAY CONCERN

The bearer of this letter LUCY W. MWANGI


Registration No. D61/65175/2013

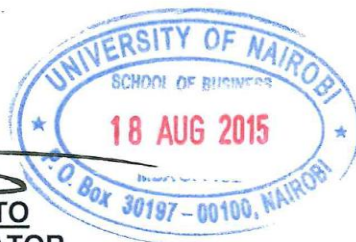
is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

  
**PATRICK NYABUTO**  
MBA ADMINISTRATOR  
SCHOOL OF BUSINESS



### **APPENDIX III: Tea factories operating west of Rift valley region**

1. Unilever Limited
2. James Finlays Kenya Limited
3. Williamson Tea
4. Nandi Tea Estates Limited
5. Kapchebet Tea Factory
6. Eastern Produce Kenya
7. The Sotik Tea Companies
8. Tinderet Tea Estates Limited
9. Kaimosi Tea Estates Limited
10. Kaisugu Limited
11. Emrock
12. Kabianga Tea.
13. Tegat Tea Factory Limited
14. Litein Tea Factory limited
15. Kapkatet Tea Factory
16. Momul Tea Factory
17. Kapkoros Tea Factory
18. Olenguruone Tea Factory
19. Mogogosiek Tea Factory
20. Nyasiongo Tea Factory
21. Nyakoba Tea Factory
22. Tombe Tea Factory
23. Kebirigo Tea Factory
24. Gianchore Tea Factory

25. Sanganyi Tea Factory
26. Ogembo Tea Factory
27. Kiamokama Tea Factory
28. Chebut Tea Factory
29. Kaptumo Tea Factory
30. Mudete Tea Factory
31. Kapsara Tea Factory.