



**QUALITY MANAGEMENT PRACTICE AND PERFORMANCE OF COFFEE
PROCESSING AND EXPORTING FIRMS IN ETHIOPIA**

By

BERHANU GEZAHEGN: SGS/0629/2011A

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BY

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(SGS/0629/2011A)

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**SCHOOL OF GRADUATE STUDIES
INSTITUTE OF QUALITY AND PRODUCTIVITY MANAGEMENT**

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DECLARATION

I, the undersigned declare that this thesis entitled “Quality Management Practice and Performance of Coffee processing and Exporting Firms in Ethiopia” , is my original work prepared under the guidance of Amare Matebu (PhD) .All sources of materials used for the thesis have been acknowledged. I further confirm that this study has not been submitted in part or full for any degree completion to any University or Collage.

BERHANUGEZAHEGN

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ABBREVIATIONS AND ACRONYMS

AAU	Addis Ababa University
DMAIC	Define, Measure, Analyze, Improve and Control
DOE	Design of Experiments
EC	Ethiopian Calendar
ECTA	Ethiopian Coffee and Tea Authority
EFQM	European Federation Quality Model
EQA	Ethiopian Quality Award
ES	Ethiopian Standard
GTP	Growth Transformation Plan
ICO	International Coffee organization
ISO	International Standard Organization
MBNQA	Malcolm Baldrige National Quality Award
QA	Quality Award
QFD	Quality Function Deployment
QMI	Quality management Implementation
QMP	Quality Management Practice
QMS	Quality Management System
PDCA	Plan, Do, Check and Act

USD United State Dollar

WIC Walta Information Center

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ABSTRACT

The coffee industry contributes to the economies of both exporting and importing countries. A firm's performance is a function of how well managers use quality management practices to improve the quality of products and services. In today's global environment, organizations are constantly looking for ways to expand and improve their businesses in terms of quality to enhance performance. Quality management practices have been used by export coffee processing and export firms in Ethiopia to improve performance to compete with the world coffee market. However, international customers are still complaining that the quality of the coffee. This study aims to examine the quality management practice and performance of coffee processing and exporting firms in Ethiopia in terms of to assess the type of coffee quality standard adopted by coffee exporting and processing firms, to assess the type & degree of utilization of the quality tools, techniques & methods utilized by coffee exporting and processing firms, to study the level of implementation of the quality management practice adopted by coffee exporters, to assess the moderating effect of the operating environment on the relationship between quality management practices and performance, to establish the mediating effect of organizational capacity on the relationship between quality management practices and performance and to find out the possible factors that influence the implementation of quality improvement. The study used descriptive and explanatory as research design and stratified sampling technique to collect primary data as an approach to primary data that was collected using self-administered questionnaires. The validity of the instruments ensured through face, content validity and reliability tested using Cronbach's Alpha with a coefficient of 0.7, which was considered acceptable. Data analyzed using descriptive and inferential statistics. Descriptive statistics used to summarize data while inferential statistics, specifically Multiple Linear Regressions, used to test the hypothesis. The results presented using tables and findings indicate that continuous improvement had a positive and significant effect on the performance of export coffee processing and exporting firms. Customer and market focus found to be significant in explaining the variation of performance and top management commitment found to have a significant effect on the performance of export coffee processing and exporting firms.

Organizational capability had a partial mediating effect on the relationship between quality management practices and performance. The operating environment had a moderating effect on the relationship between quality management practices and performance. The study recommends that the management should be committed to quality by providing strategic direction concerning quality management practices, which should be aligned to the firms' objectives. Policymakers should create a quality framework geared towards improving performance and ensure it is adhered to by all stakeholders in the export coffee processing and exporting firms in Ethiopia. Finally, the study recommends similar research be done in the coffee value chain in Ethiopia coffee industries.

Key words: *QMP, firm performance, operating environment and organizational capability*

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Coffee is one of the most important tropical commodities and provides economic benefits at each step of the global value chain that links growers to consumers. The coffee industry contributes to the economies of both exporting and importing countries. As a beverage, it brings joy to a growing number of consumers around the world. At origin, the production of coffee provides a livelihood for up to 25 million farmers and their families. Additional economic benefits are accrued by actors along the global value chain, be they traders, roasters, retailers, and their workforce or other stakeholders. Since 1990, the global coffee sector has expanded significantly as production has increased by more than 65% (ICO, 2019a). The main driver of growth has been raising consumption in emerging economies and coffee-producing countries. Demand in traditional markets with already high per capita consumption has been reinvigorated by the growth of high-value market segments, such as specialty coffee, and as a result of product innovations that provide new flavors and more convenience to consumers.

As an export commodity, coffee realizes important foreign exchange earnings amounting to USD20 billion globally in 2017/18. The share of coffee in total merchandise exports varies across countries. Today, Brazil, Vietnam, and Colombia, the three largest coffee-producing countries, show relatively low dependence on coffee with a share in total exports of 3%, 2%, and 6%, respectively. In some medium-sized producers, such as Honduras and Ethiopia, this share exceeds 20%. Other smaller producers, such as Uganda, Rwanda, and Burundi, are also highly dependent on coffee exports. Generally, those countries with a high dependency on coffee fall in the category of low and lower-middle-income countries (ICO, 2019a).

The improvement of coffee farm performance is a central and effective strategy to ensure that coffee growers are profitable and improve their livelihoods. Farm performance refers to productivity, efficiency, quality, and resilience. These performance areas are influenced by some factors within the control of the coffee producer, but some outcomes, like productivity, are to a large extent dependent on factors beyond the smallholder's sphere of control. These include the

impact of weather patterns or changes in input costs. Coffee producers may not always be able to respond robustly to changing circumstances even within their control, such as pests and disease outbreaks or market preferences, due to the constraints associated with tree crops, including access to pest- and disease-resistant varieties or the time delay for new plantings to become productive (ICO, 2019b).

Quality can be an important determinant of the price received by coffee growers and thus drives farm profitability. Quality improvement is a complementary strategy to productivity enhancements (in cases where the market rewards it) and can put a coffee producer on the pathway to value addition and capture, e.g. through tapping into high-value market segments. A typical role that can be undertaken by the public or semi-public sector in producing countries is quality management. Introducing and enforcing sector-wide quality standards creates a level playing field and can help to improve a country's reputation and promote value capture through quality premiums (*ibid*).

Along with improving farm performance, productivity measures can strengthen the resiliency of farms to adapt to pests and disease outbreaks, soil erosion, and adverse weather events, like drought caused by climate change. A resilient and high-performing coffee farm requires sufficient resources, knowledge, and access to services. However, farm resilience is largely impeded by inadequate service delivery models for channeling the necessary training, inputs, and finance, with smallholders and female producers running a higher risk of being marginalized (ICO, 2019b).

Smallholder coffee producers – often the most affected by low price environments – can organize to overcome poor basic infrastructure in rural areas to engage collectively as commercial actors accessing inputs, services and output markets. Aggregation can take several different forms, including cooperatives, associations, clusters, supply chain networks, out-grower schemes, service provider networks, area-based schemes or sector-wide organization. For example, out-grower schemes (a type of contract farming) are based on agreements made between a buyer and producers that pre-determine production quantity and quality, (future) date of delivery and price levels (either fixed at contract signing or market-based at delivery).

Typically, out-grower schemes include service delivery by the buyer to producers (e.g. seed, inputs or finance). Key success factors for smallholder aggregation are professional management, viable business models and accountable governance structures (ICO, 2019b).

Value addition is a measure that has clear advantages. Coffee growers can give strategic attention to cup quality, product differentiation, and other relevant innovations. They can ensure good practices on-farm and in primary processing, thereby laying the foundation for adding value in roasting, blending, and marketing. The decision to vertically integrate coffee growing and processing assumes that the market will adequately reward such value creation. Integrated producers can target domestic consumer or export markets. However, domestic markets often still lack a sufficient demand base despite steady growth in consumption, while export markets are difficult to penetrate due to tariff and non-tariff barriers and strong competition with highly professional, well-established brands. In some cases, these constraints have been successfully overcome. For example, Pachamama, a global cooperative with smallholder members across multiple coffee-producing countries owns roasting and retail operations in the US. A further example is Moyee in the Netherlands, which creates joint ventures with partners in Ethiopia to carry out roasting at origin while Moyee is responsible for marketing in consuming countries (ICO, 2019b).

Agriculture is the dominant sector in the Ethiopian economy. The predominant role of coffee (Coffee Arabica) in the Ethiopian economic, social, and cultural dimensions dates back to several centuries as the country is the primary center of origin and genetic diversity of the plant. According to history, Ethiopia is the world's oldest exporter of coffee that predates 1830 (EU, 2014). Currently, among the top three agricultural export commodities, coffee stands first followed by oilseeds and pulses. The significance of coffee in the Ethiopian economy is enormous in that: it accounts for 29 – 31% of export earnings of the nation, 4.7 million smallholders directly involved in producing coffee and about 25 million people directly or indirectly depend on the coffee sector for their livelihoods (EIAR, 2017).

Coffee exporting business is highly competitive in the quality of the green bean and it demands strategic planning to meet the customer expectations and to outwit the competitors. Strategic

planning seeks to develop the performance of a company to achieve strategic objectives along the route to a vision for the future, considering the coffee export business is a future market, long term contracts and agreements make strategic quality managements undeniably important. In consideration of coffee, quality is the result of several post-harvest management practices by coffee exporters, each activity of the process has to count and development of a strategic plan to meet the standards of its quality assumed necessity factors of success for competitiveness and to sustain their profitability in the marketplace. Greater awareness and commitment to quality throughout the organization and implementation of programs aimed at process improvement are becoming focal points to increase the company's overall performance.

Existing processing and value-addition technologies and guidelines are decades-old in Ethiopia. There are inadequate guidelines for coffee primary processing (e.g. fermentation process, storage duration, recycling of water, dry processing technology, and target moisture content after drying, and the advantages of dry vs. wet processing). There is also a lack of research knowledge about secondary processing and value-addition (e.g. impurity proportions after secondary processing, prevention of post-harvest losses, roasting and grinding levels, packaging design). Despite its much strength, the sector is limited by low quality, inadequate ease-of-business, and disorganized marketing systems and policies (Compressive Ethiopian coffee strategy ECTA, 2018).

Quality management (QM) has been widely viewed as a management paradigm that enables firms to gain a competitive advantage (Yeung et al., 2006). It presents a strategic option and an integrated management philosophy for organizations, which allows them to reach their objectives effectively and efficiently, and to achieve sustainable competitive advantage (Goldberg and Cole, 2002). Organizations have not found it so easy to implement quality management practices and to achieve the expected benefits (Kirk, 2000). Brown (2000) concluded that there are still organizations where, despite this criticism, the quality management philosophy continues to be a central focus of the business and a mechanism for contributing to better performances.

ISO 9004 recommends top management to implement Quality management principles as a framework to guide their organizations towards improved performance. Quality Management System aims to achieve continual improvement for an organization over the long term by

focusing on customer expectations and needs while addressing the needs of all other interested parties (ES ISO 9004, 2009). Birhanu(2013) in his study that assesses the quality management practice in Ethiopian manufacturing and service industries based on the Ethiopian Quality Award (EQA) self-assessment model the result justifies that quality will be the future challenges of competitiveness.

Cup quality is a complex character which depends on a series of factors such as the species or variety (genetic factors), environmental conditions (ecological factors), agronomical practices (cultivation factors), processing systems (post-harvest factors), storage conditions, industrial processing, preparation of the beverage and taste of the consumer (Moreno et al., 1995). Coffee quality is of critical importance to the coffee industry. Quality coffee is a product that has desirable characteristics such as clean raw and roasted appearance, attractive aroma, and good cup taste (Behailu et al., 2008).

As the result, the researcher seeks to study the quality management practice and performance of coffee processing and exporting firms in Ethiopia. Besides, the researcher is aiming to identify possible factors that may influence the implementation of change in continual quality improvement that makes coffee processors and exporters competitive in the international markets and eventually maximize the benefit that could be earned from the coffee sector.

1.2 Statement of the Problem

In the context of globalization, highly competitive markets, continuous technological advancement, and increasingly demanding customers, quality has become one of the most important elements in the strategies of making firms competitive (Ismyrlis & Moschidis, 2015). Quality Management System is a potential mean to improve the trading condition and agricultural product quality (Raharja et al., 2012). The quality system is purposed to identify all tasks which are related to quality, allocate responsibility, and establish cooperative relationships in the company (Insani et al., 2011). The quality system was also intended to build mechanisms in order to integrate all functions into a comprehensive system.

Numbers of studies are conducted on an assessment of quality management practice and it indicated that it is a crucial issue to be addressed by different scholars. Existing processing and value-addition technologies and guidelines are decades-old in Ethiopia. Despite its much strength, the sector is limited by low quality, inadequate ease-of-business, and disorganized marketing systems and policies (Compressive Ethiopian coffee strategy ECTA, 2018).

ISO9001:2008 quality management system and quality coffee is a product that has desirable characteristics such as clean raw and roasted appearance, attractive aroma, and good cup taste (Behailu et al., 2006). While the extent of adoption of the quality management system was low, the study established an over significance relationship between the extent of adoption of the quality management system and the coffee quality. Further, there was an overly significant relationship between the specific quality management system QMSs in use, internal QMS, and coffee quality.

Ethiopia has a good potential to catch-up on the high-value coffee market in the world since buyers increasingly appreciate it as high-quality coffee. However, Ethiopia is not benefited from this product because of two reasons: quality deteriorates along the value chain and the value addition is almost negligible (Birhanu et al., 2013). Although, some studies analyze the impact of various variables on the export and processing of coffee in general most of the studies are not incorporated the effects of coffee processing and exporting firms' quality management practice implementation to trade into the exporter supply model. Besides no one of the previous researchers assess quality management practice as a standard, tool & award in the Ethiopia coffee industry. Finally, to my observation and my involvement in the industry, coffee processors and exporters are faced with a variety of quality management implementation un centrality that appears unduly to restrict to be able them not have better coffee export operations and to address coffee products in multiple foreign markets.

1.3 Basic Research Question

Based on the research problem identified and framed, the following research questions will be answered through the research.

1. What quality standard, program, system, or customer requirements have been adopted by coffee exporting and processing firms in Ethiopia?
2. What are the type and utilization levels of quality tools, techniques & methods employed by coffee exporting and processing firms in Ethiopia?
3. What are the levels of implementation of the quality management practice adopted by coffee exporters' in meeting the categorical requirements of the Quality Award Program?
4. What is the influence of Organizational capability and operating environment on Quality management and performance in coffee export processing and exporting firm?
5. What are the main factors that influence the implementation of quality improvement change among coffee exporting and processing firms in Ethiopia?

1.4 Objectives of the Study

To examine the quality management practice and firm performance of coffee processing and exporting firms in Ethiopia.

The specific objectives of the study are:

1. To assess the type of coffee quality standard adopted by coffee exporting and processing firms.
2. To assess the type & degree of utilization of the quality tools, techniques & methods utilized by coffee exporting and processing firms in Ethiopia as quality improvement tools (problem-solving & continuous improvement).
3. To study the level of implementation of the quality management practice adopted by coffee exporters' in meeting the categorical requirements of the Business Excellence self-assessment model and organization performance.
4. To assess the moderating effect of the operating environment on the relationship between quality management practices and performance of coffee processing and exporting firms.
5. To establish the mediating effect of organizational capacity on the relationship between quality management practices and performance of coffee processing and exporting firms.
6. To find out the possible factors that may influence the implementation of quality improvement change in the coffee exporting and processing firms in Ethiopia and also to propose a possible solution to improve the quality management practice of the coffee industry.

1.5 Research Hypotheses

H₀₁ : There is no relationship between Quality management practice and Firm performance in coffee export processing and exporting firms.

H₀₂: There is no moderating effect of Operating environment on the relationship between Quality management practice and performance of coffee export processing and exporting firms.

H₀₃: Organizational capability has no mediating effect on the relationship between Quality management practice and performance of coffee export processing and exporting firms

1.6 Definition of Terms

Continuous improvement : Involves continuous training of employees and ensuring the presence of systems and process improvement, continuous quality audits and benchmarking.

Customer focus : Putting emphasis and energy into quality customer service, leading to firm performance and ensuring there is customer retention through reduction of customer complaints.

Firm performance : It has to do with the manner in which the resources available to firms are used to achieve output in form of productivity, effectiveness, employee satisfaction and profitability.

Organizational capability : It is any activity through which a company exploits its resources through process orientation, employee empowerment, systems integration and quality culture to realize its objectives.

Effectiveness: It is the ability of an organization to provide the best product within the most effective structure.

Operating environment: This is the prevailing external factors which a company has no control over but which influence a firm's performance, such as competitors, industry regulators and market conditions.

Productivity: This is a ratio for measuring how well an organization converts input resources into goods and services.

Quality management practices: These are practices developed by the international organizations for standardization, and it serves as a framework for quality management systems, aimed at meeting the firm's performance.

1.7 Significance of the Study

The study will contribute to the body of knowledge on quality management implementation through assessing quality management practices as multiple constructs as standard, tools, and awards in coffee exporting and processing firms to improve organizational performance. Most previous studies were conducted in developed countries and there is a lack of empirical shreds of evidence that show the situation in Ethiopia, so the study will make its own contribution in that regard. The findings of the study will enable firms in the coffee industry to know the status of implementation of quality management practices & also to identify the possible factors that may influence the implementation of change in continuous quality improvement. The finding also enables firms to make use of the recommendations that will be forwarded by the study to improve their performance.

The study will also serve as an input for Ethiopia national standard authority & private standard certifiers since the finding will show the exporters' future plan on implementation of standard & the anticipated challenge firms may face in implementing quality standard. Identifying the possible factors that may influence implementation of change in continuous quality improvement and understanding the status of implementation of quality management practices in the coffee industry will indicate the priority area that development partners & policy makers should focus. This will help coffee exporting firms to meet and excised customer requirement and hence gain export market.

1.8 Delimitation/Scope of the Study

This study focuses on an empirical study on quality management practice and the performance of coffee processing and exporting firms in Ethiopia. The study is limited to selected coffee processing and exporting firms that are active in coffee processing and exporting firms based around Addis Ababa and Dire Dawa.

1.9 Organization of the thesis

This study comprises five chapters. Chapter One covers the introduction of the study, and it explains the background of the study, the statement of the problem, basic research question, study objectives, the significance of the study, and the delimitation/ scope of the study. Chapter

Two comprises the theoretical review, empirical review research gaps, and conceptual framework.

Chapter Three explains the research methodology, which presents the research philosophy, research design, empirical model, target population, sampling design and procedure, data collection instruments, validity and reliability of the instruments, data collection procedure, data analysis, normality testing, and ethical considerations. Chapter Four sets result and discussion, presenting the background information on descriptive statistics and inferential statistics. Finally, Chapter Five provides a summary, conclusion, and recommendations for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this reviews the theoretical and empirical literature suitable to answer the research hypothesis of this study. The review begins by discussing the main theories the study relied on to build the research framework. The review then presents the specific literature for the study, with a focus on the main variables whose relationship was being investigated. The conceptual framework was also developed after reviewing the relevant literature.

2.2 Theoretical Review

The study was underpinned by three quality management theories advanced by several scholars who tried to explain the effect of quality management practices and performance on coffee exporting and processing firms.

2.2.1 Resource-Based View Theory

Resource-Based View Theory postulates that internal organizational resources that are valuable, rare, unique, and without a substitute are a source of sustainable competitive advantage (Penrose, 1959), and therefore enhance performance. The Resource-Based View Theory suggests that performance is driven by the resource profile of the firm, whereas the source of superior performance is embedded in the possession and deployment of distinctive resources that are difficult to imitate (Wernerfelt, 1984).

Resource-Based View Theory posits that firms achieve sustainable competitive advantage if they possess certain key resources and if they effectively deploy these resources in their chosen markets (Barney, 2007). O'cass *et al.* (2004) argue that a company's specific characteristics are capable of producing core resources that are difficult to imitate and which determine the performance variation among competitors.

The Resource-Based View Theory further says that the fundamental sources and drivers of a firm's competitive advantage and superior performance are mainly associated with the attributes of their resources and capabilities, which are rare, valuable, difficult to imitate, and not

substitutable. The Resource-Based View (RBV) theory postulates that a firm's performance depends on its specific resources and capabilities (Fotopoulos, Kafetzopoulos & Psomas, 2009).

According to Barney (2001), a firm develops a competitive advantage by not only acquiring but also developing, combining, and effectively deploying its physical, human, and organizational resources in ways that add unique value and are difficult for competitors to imitate. The resource-Based View Theory postulates that competitive advantage comes from the internal resources that are possessed by an organization (Wernerfelt, 1984). The Resource-Based View Theory is an economic tool used to determine the strategic resources available to a firm and that the fundamental principle behind the theory is that the basis for the competitive advantage of a firm lies primarily in the application of a bundle of valuable resources at the firm's disposal (Wernerfelt, 1984; Orlando, 2000).

RBV models assume that a corporation is a bundle of resources. A firm's resources include all tangible and intangible assets that enable the firm to conceive of, develop and implement strategies that improve its efficiency and effectiveness (Daft, 1983; Johnson *et al.* 2004). Tangible resources are physical substances that an organization possesses, such as facilities, raw materials, and equipment. Intangible resources include the corporate brand name, organizational values, networks, and processes that are not included in normal managerial-accounting information. Unlike tangible resources, intangible resources, like product quality, are more likely to generate superior performance (Rouse & Daellenbach, 2009; Kenneth *et al.*, 2011).

The Resource-Based View Theory is largely based on the behavioral and sociological paradigm and considers organizational factors and their fit with the environment as the major determinants of success. Strategy models with this internal orientation have a strong 'inside-out' approach that considers internal process variables (such as quality improvement, product development, and flexibility and cost efficiency) as the most potent success factors.

Barney (2007) suggests that to transform a short-run competitive advantage into a sustained competitive advantage requires that these resources be heterogeneous and not perfectly mobile. This in effect results from invaluable resources that are neither perfectly imitable nor sustainable

without great effort (Hockman & Grenville, 2004). Barney (2007) pointed out that if these conditions hold, the firm's bundle of resources can assist the firm to sustain above-average returns. This theory is relevant to this study because quality management practices are a resource for creating a quality image, which an organization uses to improve the firm's performance. The quality management practices must be valuable, rare, inimitable, and not substitutable for manufacturing firms to achieve competitive advantage and thus realize performance.

According to Klassen and Whybark (1999), the theoretical implications for environmental management are multifaceted of primary importance is the fact that environmental and economic performances are related to one or more strategic resources yielding multiple competitive advantages. The environmental policies can be associated with superior performance if the prerequisite strategic organizational resources have been developed as a part of the management initiatives. For example, a firm may put the continuous improvement in place to achieve international certification for quality in terms of a standard like the ISO 9000. This strategic resource can be transferred and applied to the implementation of preventive environmental technologies (Hart, 1995), providing a theoretical basis for integrated approaches, such as total quality environmental management (Willig, 1994).

In the RBV, a distinction has emerged between resources and capabilities (Makadok, 2001). A resource is an observable (but not necessarily tangible) asset that can be valued and traded as a brand or a patent. A capability, on the other hand, is not observable and is hence intangible and hard to value (Karthi *et al.*, 2012). Two key features distinguish a capability from a resource: one, a capability is firm-specific since it is embedded in the organization and its processes; and, two; the primary purpose of a capability is to enhance the productivity of the other resources that the firm possesses (Makadok, 2001). Since organizational resources reflect a great deal of the features of capabilities, this study also focused on the performance implications of some internal attributes of the firms (Barney, 2001), in this case, organizational capabilities, continuous improvement, and customer focus.

In disparity, the critical argument of the Resource-Based View Theory is that rare, inimitable, non-substitutable resources create a firm's heterogeneity and that successful firms are those that

obtain and preserve valuable and peculiar resources that result to a company's good performance arising from the sustainable competitive advantage that arises thereof (DiMaggio & Powell, 1991).

Organizational preparedness determines what kind of quality management systems to pursue, since the resources that an organization has will influence what the firm does or does not do. The strategies so undertaken will then influence the performance of the firm and help the firm gain a competitive advantage in the market place, resulting in enhanced performance. Therefore, this theory supports variables of continuous improvement, customer focus, and the commitment of the top management.

2.2.2 Quality Improvement Theory

Quality Improvement Theory postulates that a feature of quality management doctrine is that it places responsibility for manufacturing organizations/processing organization/ squarely at the door of top management (Deming, 1986). The theory states that the management is responsible for the systems and that it is the system that generates 80 percent of the problems in firms (Hill, 1995). Deming (1986) noted that no quality management system could succeed without top management commitment; it is the management that invests in the processes, creates corporate culture, and also selects suppliers and develops long-term relationships. Deming's Quality Improvement Theory provides business with a plan to eliminate poor quality control issues through effective managerial techniques. It's a fact that management's behavior shapes the corporate attitude and defines what is important for the success and survival of the firm.

Hubert (2000) has detailed the theoretical approach of Deming (1986) concerning the quality management system, and it envisages the creation of an organizational system that fosters cooperation and learning to facilitate the implementation of process management practices. This, in turn, leads to the continual improvement of the processes, products, and services and helps to instill employee satisfaction. These are critical to promoting customer focus, and, ultimately, helping in the survival of any organization. Deming (1986) believed in a systematic approach to problem-solving and promoted the widely known Plan Do Check Act cycle. The Plan Do Check Act (PDCA) cycle of continuous improvement is a universal quality improvement concept whose

aim is to constantly improve performance, thereby reducing the difference between customer requirements and the performance of the manufacturing firms (Goetsch & Davis, 2006).

The theoretical essence of the Quality Improvement Theory focused on quality concerns in the creation of an organizational system that fosters cooperation and learning for facilitating the implementation of process management practices, which, in turn, leads to performance (Anderson *et al.*, 1994). Oakland (2004) stressed that the responsibilities of top management should take the lead in changing processes and systems. Leadership plays a crucial role in ensuring the success of quality management because it is the top management's responsibility to create and communicate the vision to move the firm toward performance improvement.

Top management is responsible for most quality problems; it should give employees clear directions on what is considered acceptable work, and provide the methods to achieve it. These methods include an appropriate working environment and climate for work that is free of fault-finding, blame, or fear and instead provide clarity of issues, communicate effectively and provide an appropriate environment for work to enhance performance (Lamport *et al.*, 2010). The top management should be committed to applying the principles and practices of System of Profound Knowledge (SOPK), where a business can simultaneously reduce costs through reducing waste, rework, staff attrition and litigation while increasing quality, customer loyalty, worker satisfaction and, ultimately, profitability (Deming, 1986). Deming's Quality improvement Theory is relevant to study in that quality management practices are a quality management system that can be used to enhance the quality of products and services through continuous improvement and which organizations can use to realize performance.

2.2.3 The Institutional Theory

The Institutional Theory of Barney (2001) describes how organizations survive and succeed through the congruence between an organization and the expectations from their environments. Institutional theorists assert that the institutional environment can strongly influence the development of formal structures in an organization, often more profoundly than market pressures can. The institutional environment is composed of norms and values of stakeholders (customers, investors, government, collaborating organizations). The Institutional View argues

that organizations need legitimacy from their stakeholders. Legitimacy is defined as the general perspective that an organization's actions are desirable, proper, and appropriate within the environment's system of norms, values, and beliefs (Scott, 2004).

Firms perform well when they are perceived by the larger environment to have a legitimate right to exist. Organizations therefore, have to invest in areas that increase both the perceived and actual legitimacy that they command in their respective micro and macro environments. Thus, the Institutional View postulates that organizations adopt structures and processes to please outsiders, and these activities come to take on rule-like status in organizations. The institutional environment reflects what the greater society views as correct ways of organizing and behaving.

Organizations are highly interconnected. Institutional Theory focuses on the deeper and more resilient aspects of social structure. It considers the processes by which structures; including rules, norms, and routines, become established as authoritative guidelines for social behavior. Different components of Institutional Theory explain how these elements are created, diffused, adopted, and adapted over space and time and how they fall into decline and disuse (Jones *et al.*, 2004 & Daft, 2007).

2.3 Empirical Literature Review

2.3.1 Performance

Psomas and Kafetzopoulos (2012) argue that performance contributes to providing a competitive advantage to the firms in cut-throat competition in the market. The company takes advantage of its competitors and performs better in business. Cup quality is a complex character which depends on a series of factors such as the species or variety (genetic factors), environmental conditions (ecological factors), agronomical practices (cultivation factors), processing systems (post-harvest factors), storage conditions, industrial processing, preparation of the beverage and taste of the consumer (Moreno *et al.*, 1995). Coffee quality is of critical importance to the coffee industry.

Ethiopia has a good potential to catch-up on the high-value coffee market in the world since buyers increasingly appreciate it as high-quality coffee. However, Ethiopia is not benefited from

this product because of two reasons: quality deteriorates along the value chain and the value addition is almost negligible (Birhanu *et al.*,2013). Quality coffee is a product that has desirable characteristics such as clean raw and roasted appearance, attractive aroma, and good cup taste (Behailu *et al.*, 2008). The current study focused on measures performance of coffee quality in industrial processing and export it was carried out in Ethiopia.

2.3.2 Coffee quality

According to the International Organization for Standardization (ISO) (2000), Quality is described as "the ability of a set of inherent characteristics of a product, system or process to fulfill the requirement of customers and other interested parties". These inherent characteristics can also be called "attributes". For coffee, the definition of quality and the attributes considered have probably evolved over the centuries. But nowadays, this definition varies along the production-to-consumer chain (Leroy *et al.*, 2006). At the farmer level, coffee quality is a combination of production level, price, and easiness of culture; at the exporter or importer level, coffee quality is linked to bean size, lack of defects and regularity of provision, tonnage available, physical characteristics and price; at the roaster level, coffee quality depends on moisture content, the stability of the characteristics, origin, price, biochemical compounds and organoleptic quality (Leroy *et al.*, 2006). It should be noted that each consumer market or country may define its own organoleptic qualities; at the consumer level: coffee quality deals with price, taste, and flavor, effects on health and alertness, geographical origin, environmental and sociological aspects (ISO, 2000).

More specifically, ISO (2004a) defined a standard for green coffee quality (ISO 9116 standard) as, it requires several pieces of information, like the geographical, and botanic origins of the coffee, the harvest year, the moisture content, the total defects, the proportion of insect-damaged beans and the bean size. These ISO standards define methods of measurements for several of these qualities such as, defects, moisture content, bean size, some chemical compounds, and preparation of samples to perform cup tasting.

According to the definition of quality and standards authority of Ethiopia (QSAE) (2000), quality is conformance with requirements or fitness for use in which the parties involved in the industry

(customer, processor, supplier, etc) should agree on the requirements and the requirements should be clear to all stakeholders involved in the process. On the other hand, Coffee quality control and auction Center was established with a key objective of maintaining coffee quality control, which in turn facilitates the coffee marketing system to be standard-based, and for the betterment or proper functioning of the long coffee supply chain of Ethiopia (Endale, 2008).

Globally, quality is the main determinant of coffee consumption. ISO 2000 defines quality as the ability of a set of natural features of product, system, or process to meet requirements of the customer's interest. These inherent characteristics can be called “attributes.” However, regarding coffee each end-users country defines its own organoleptic qualities at a different level; for example, at the consumer level: coffee quality deals with price, taste, and flavor, effects on health and alertness, geographical origin, environmental and sociological aspects: organic coffee, fair trade, etc. Coffee has only one value to give consumer pleasure and satisfaction through the flavor, aroma, and desirable physiological and psychological effects (Yigzaw, 2005). Therefore coffee quality determines both the relative price and usefulness of a given quantity of coffee. Cup qualification often referred to as drinking quality or liquor quality, is an essential attribute of coffee and acts as a yardstick for price determination (Agwanda *et al.*, 2003).

2.3.2.1 Organoleptic quality

When assessing organoleptic quality, one has to take into account that consumers have a specific taste according to their nationality, which leads to an unreliable definition of organoleptic quality (Wintgens, 2004; Leroy *et al.*, 2006). In addition, organoleptic characteristics must be stable, especially for the roaster and the consumer. The smell of the ground-roasted coffee before water added sometimes called fragrance. Then, one can smell the aroma, evaluate the body, and perceive taste and flavors. The organoleptic quality measurement relies on overall or sensory evaluation (Leroy *et al.*, 2006). Hence, assessment of coffee organoleptic quality is an extremely demanding exercise; indeed the flavor obtained in a coffee cup is the result of multiple aromatic compounds present in the coffee (more than 800 in the roasted coffee) (Clifford and Wilson, 1985).

2.3.2.2 Physical quality

The International Coffee Organization (ICO, 2001) implemented a Coffee Quality Improvement Program (CQIP) with recommendations to exporting countries. It is not recommended to export coffee with the characteristics having foreign material of non-coffee origin; foreign materials of non-bean origin, such as pieces of parchment or husk; abnormal beans for shape regularity or integrity; abnormal beans for visual appearance, such as black beans; abnormal beans for the taste of the cup after proper roasting and brewing.

Bean size, which is usually determined by screening, is of particular importance to roasters since bean of the same size would be expected to roast uniformly. In addition, these size and shape differences in coffee beans were influenced by botanical variety and environmental growth circumstances (Sivetz and Dosroisier, 1979; EAFCA, 2008).

2.3.2.3 Factors Affecting Coffee Quality

Cup quality is a complex character which depends on a series of factors such as the species or variety (genetic factors), environmental conditions (ecological factors), agronomical practices (cultivation factors), processing systems (post-harvest factors), storage conditions, industrial processing, preparation of the beverage and taste of the consumer (Moreno *et al.*, 1995). Coffee quality is of critical importance to the coffee industry. Quality coffee is a product that has desirable characteristics such as clean raw and roasted appearance, attractive aroma, and good cup taste (Behailu *et al.*, 2008).

However, in Ethiopia, the quality of coffee produced by farmers has been deteriorating from time to time. Moreover, factors that determine coffee quality are genotypes, climatic conditions, and soil characteristics of the area, agronomic practices, harvesting methods and timing, post-harvest processing techniques, grading, packing, storage conditions and transporting, all contribute either exaltation or deterioration of coffee (Behailu *et al.*, 2008). Similarly, Damanu (2008), reported coffee quality as a combination of the botanical variety, topographical conditions, and climatic conditions and the care taken during growing, harvesting, storage, export preparation, and transport. According to the author botanical variety and topographical conditions are constant and therefore dominate the inherent characters of a coffee whereas other factors except climatic conditions can be influenced by the human being and are a key factor in the determination of the

end quality of a green coffee. Furthermore, inadequate systems of harvesting, processing, storage, and transportation are responsible for the widespread failure to maintain the inherent quality of coffee produced in Ethiopia (Alemayehu *et al.*, 2008).

2.3.3 Quality Segmentation of Coffees

According to the coffee exporter's guide (ICT, 2011), quality segmentations of coffees can be divided into three commercial categories namely: exemplary quality, high quality or premium brands, and mainstream quality.

2.3.3.1 Exemplary quality

Coffees have a high intrinsic value with a fine or unique cup, usually of quite limited availability and mostly retailed under the straight estate or origin names. Usually very well presented washed coffees, including some superior washed robust as, but also includes some naturals (Ethiopian Harar, Yemeni Mochas, and some Indonesian Arabica) and top organic coffees, which are usually, but not always, roasted by comparatively small firms and marketed through fairly exclusive outlets, e.g. retail coffee shops or bars and up market delicatessens.

2.3.3.2 High quality or premium brands

Good cupping coffees, well presented, nevertheless not necessarily visually perfect that are retailed both as straight origins and as blends, include good quality, well prepared organic coffees, and washed as well as a superior quality natural robust as. The market for this quality band is much broader and includes a good percentage of today's specialty coffee. It is also produced by leading multinational coffee companies and marketed through normal retail outlets, such as supermarkets.

2.3.3.3 Mainstream quality

It is average quality, reasonably well presented, but certainly not visually perfect. It offers a decent, clean but not necessarily impressive cup. In today's specialty market all three types of coffee are represented: exemplary and high-quality coffees either as standalone or as a named blend component, and mainstream quality in many of the ready-to-drink and flavored drinks that are sold alongside filter coffee and espresso. Obviously, for smaller exporters of top quality

coffee, the exemplary segment initially offers more promise. However, producers or exporters of good quality coffee have three basic options open to them.

- Sell to the leading roasters (through the usual trade channels), if the volume of sales required and the coffee sold lacks the flavor characteristics necessary to be marketed on its own.
- Sell to specialty roasters either direct or through importers or agents. The latter is in most cases is a more realistic option as these importers or agents have wide coverage of the small roasters and other retail outlets, which are too small to import direct.
- Focus on specialty coffee retailers either by selling direct (for roasting in-store) through specialty wholesalers or by selling through specialty roasters. However, the number of specialty coffee retailers importing directly is extremely small (ITC, 2011).

2.3.4 Why is Quality Management needed?

In the context of globalization, highly competitive markets, continuous technological advancement, and increasingly demanding customers, quality has become one of the most important elements in the strategies of making firms competitive (Ismaylis & Moschidis, 2015). Quality Management System is a potential mean to improve the trading condition and agricultural product quality (Raharja et al., 2012). The quality system is purposed to identify all tasks which are related to quality, allocate responsibility, and establish cooperative relationships in the company (Insani et al., 2011). The quality system was also intended to build mechanisms in order to integrate all functions into a comprehensive system. Experience shows that success in achieving business goals and objectives depends heavily on large, complex, cross-functional business processes, such as product planning, product development, invoicing, patient care, purchasing, materials procurement, parts distribution, and the like.

A systems thinking approach to the management of a quality product can impact on an organization's ability to achieve its business objectives and to develop programs for increasing the competitive advantages of a company. Thus, this is an approach for continuously improving the quality of every aspect of the business process. This approach has been successfully applied in different aspects of quality management.

A business process is the logical organization of people, materials, energy, equipment, and information into work activities designed to produce a required result (product or service). There are three principal dimensions for measuring process quality: effectiveness, efficiency, and adaptability. The process is *effective* if the output meets customer needs. It is *efficient* when it is effective at the least cost. The process is *adaptable* when it remains effective and efficient in the face of the many changes that occur over time. Process orientation is vital if management is to meet customer needs and ensure organizational health (Joseph, Blanton, 1998).

2.3.5 Quality Management Practices

Quality management concerned with improving the quality of services and goods of an organization through the integration of efforts of all stakeholders to meet the needs and expectations of customers (Martinez & Jimenez, 2009). The quality practices of an organization (which take place within a quality culture or context) defined as the actions and procedures undertaken by a company or organization to ensure the delivery of a high-quality service or product. Sousa and Voss (2002), mention that “practices are the observable facet of QM, and it is through them that managers work to realize organizational improvements. Síría Barros (2014) describes Quality standards, Quality tools & Quality awards as dimensions of quality practice.

From a knowledge management perspective, Choo *et al.*, (2007) developed a knowledge-based framework for strategic quality management practices. They argue that such practices can make a balance between the effective implementation of prescribed methodology e.g. tools and techniques such as ISO-9000 and context e.g. leadership, organizational culture. This can be done to an extent that firms can manage such a balance and maintain a sustainable quality advantage. Previous studies on quality management address the role of processes and techniques such as Six Sigma as highly controlled process improvement systems. While there is agreement on the ability these processes have on enhancing operational performance, there is little understanding of the effect of strategic quality management on improving firm performance over time.

2.3. 5 Quality standards

Quality standards can be formulated by public organizations as mandatory (e.g. HACCP in the EU) or they can be proposed by private institutions, with voluntary adoption (e.g. Q&S, Europe GAP). Generally, legislation places extensive and stringent requirements on the quality and safety of agro-food products. Next to the legislative quality and food safety standards are relevant for implementation and improvement in the quality management part. Quality standards can contain requirements related to the production process, product quality, safety (e.g. pesticide residue), and authenticity (geographical origin). While compliance with these requirements will allow firms to access markets, with associated benefits, they will most likely imply a need for new investments and in increased operating costs Stephanie (2006).

2.3. 6 Quality methods, techniques and tools

Quality tools are essential for understanding and practicing quality management. Thus, they must be used in different quality systems and programs, such as in ISO 9000, TQM, Six Sigma, and the national quality awards. According to Mirko (2006). Tools are generally a means of accomplishing change. The most fundamental quality tools called the seven basic quality tools - 7QC tools. These seven quality tools which are basic for all other tools are Flow chart, Pareto diagram, Check sheet, Control chart, Histogram, Scatter plot, Cause-and-effect diagram. In contrast to tools, a technique consists of a set of tools associated with a solution to a given problem. Design of experiments (DOE), benchmarking, and quality function deployment (QFD) are examples of techniques. Whereas method indicates what to do, that is, the steps to follow to attain the goals. Examples of qualitative methods are the PDCA (plan, do check and act) and the DMAIC (define, measure, analyze, improve and control) the method of organization of project improvement used in the Six Sigma approach Augusto (2008).

The use of tools and techniques is a vital component of any successful improvement process. These tools and techniques can only be beneficial for any manufacturing industry after the proper training of their employees so that they understand these tools effectively. Mohit (2012) shows that it must also be admitted that some companies have not benefited from and improved their performance by using these techniques and tools. Continuous quality improvement process assumes and requires that a team of experts together with the company leadership actively use

quality tools in their improvement activities and decision-making process. Currently, there are a significant number of quality assurance and quality management tools available, so the selection of the most appropriate is not always an easy task. The challenge for the manufacturing and production industry is for: "Everyone to understand and use the improvements tools in their work".

2.3. 7 Quality management awards

Quality management awards determine quality criteria for competing firms to assess quality performance of companies. Rather than being a standard, as ISO 9000 is, the QA system is a voluntary set of criteria. Companies that want to be considered for the award must apply & provide evidence of adherence to its principles. The major quality award globally awards are : (1) Deming Prize (1951), Japan; (2) Malcolm Baldrige National Quality Award (1987), the USA; (3) European Quality Award (1992), the Europe; (4). Major focuses in TQM Awards are: Malcolm Baldrige Quality Award aims to achieve performance excellence in organizations; Deming Prize aims to achieve organizational quality and EFQM is to obtain business excellence. Gurhan (2012).

The establishment & utilization of quality management award as competitive strategy has becoming common in developed country. For instance, the Malcolm Baldrige Performance Excellence Program's mission is to improve the competitiveness and performance of U.S. organizations through organizational assessment and development for the benefit of all U.S. residents. The Award Program created to: identify and recognize role-model businesses establish criteria for evaluating improvement efforts & disseminate and share best practices (Malcolm, 2001).

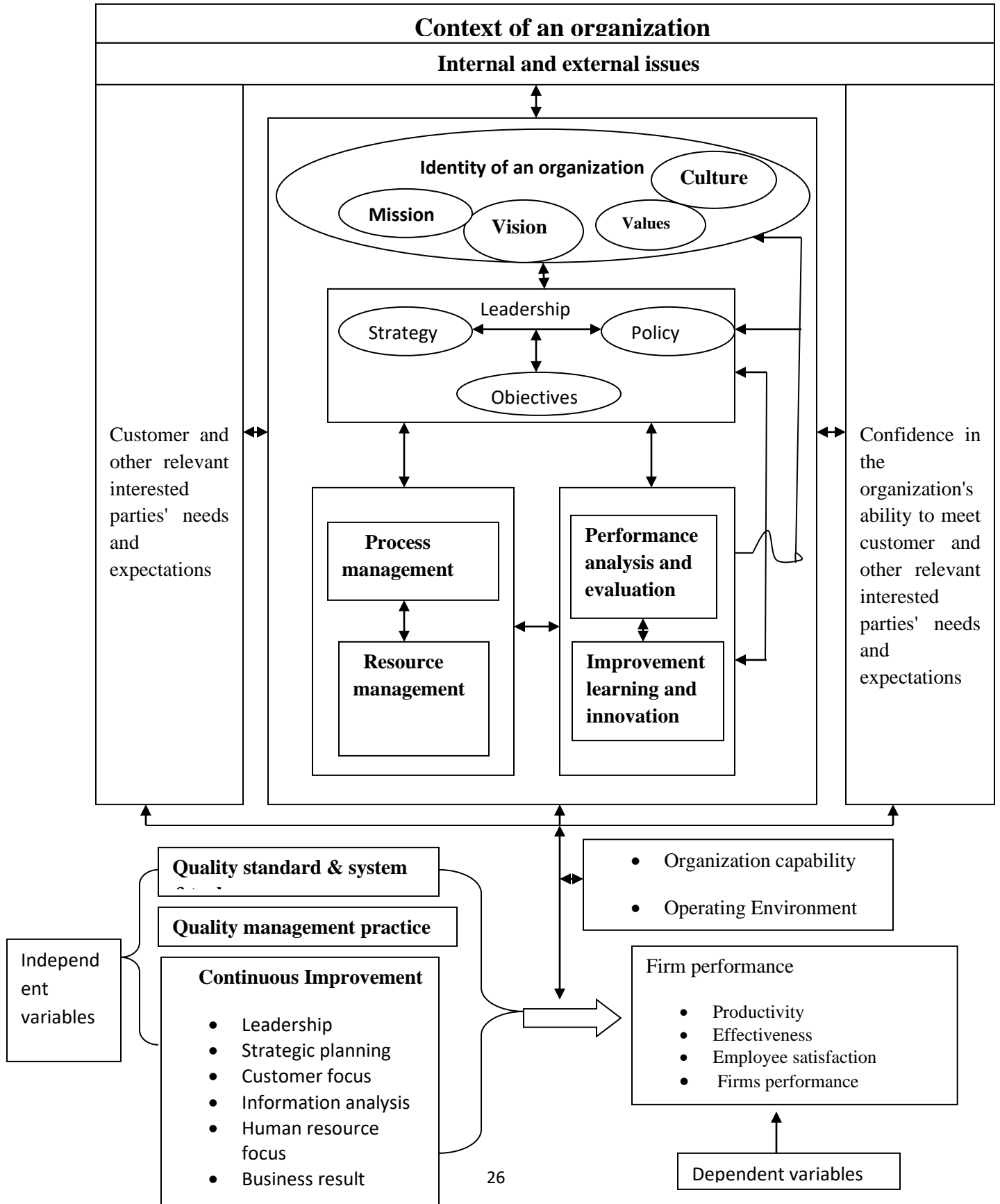
Since the inception of the MBNQA award program, relatively few companies have applied for the award, and very few have won it. However, it is used by many companies as a self-assessment tool. The U.S. Department of Commerce (2001) estimated that over two million copies of the criteria have been circulated since the program began, and the benefits to cost ratio for companies that undergo such efforts have been estimated at \$2.17 billion to \$119 million. As of the time of this review, 44 states have developed award systems based upon the MBNQA.

Recognizing the need for implementation and integration of quality concepts in the operations of Ethiopian manufacturing and service industries, the Addis Ababa University (AAU) and Walta Information Center (WIC) had initiated the Ethiopian Quality Award (EQA) in 2007. Ethiopian quality award competition is held once every year. Ethiopian quality award competition manuals are prepared about international quality award organizations, especially American Malcolm Baldrige and European quality award organization competition manual were used as a reference. It uses self-assessment tools with 7 main criteria and sub-criteria that have assigned Weight. The major criteria under EQA are Leadership, Policy and strategy, Resource management, Process management, Customer satisfaction/focus, Business performance & Impact on society.

2.4 Conceptual Framework for the Study

In developing a conceptual framework for the study of quality management practice and performance of coffee processing and exporting firms the researcher use dimension of quality management practice developed by ES ISO: 9004:2018 and Síría Barros (2014). Siria (2014) describes Quality standards, Quality tools & Quality awards as dimensions of quality practice. The organization should go beyond the quality of its products and services and the needs and expectations of its customers. To achieve sustained success, the organization should focus on anticipating and meeting the needs and expectations of its interesting parts, with the intent of enhancing their satisfaction and overall experience.

Figure 1: Conceptual framework modified and adapted ES ISO 9004:2018



The independent variable was measured using continuous improvement; customer and market focus, and top management commitment, whereas the dependent variable, was firm's performance, measured using Productivity, Effectiveness, Employee satisfaction, and firm's performance. Employee productivity mediated the relationship between quality management practices and the firm's performance, and the operating environment was posted to moderate the relationship between Quality management practices and the firm's performance.

CHAPTER THREE

RESEARCH METODOLOGY

3.1 Introduction

This chapter explains the research methodology that was used in carrying out the study. The main areas presented are research philosophy, the design and the population of the study, sampling and sampling techniques, data collection, validity and reliability of the instrument, pilot study, and methods of data analysis that were employed.

3.2 Research philosophy

In social sciences, there are two main philosophies. These are positivism and phenomenological, which may also be viewed in two perspectives, namely, quantitative and qualitative approaches (Coopers & Schindler, 2004). This study adopted positivism research philosophy and its literature is characterized by testing hypotheses from existing theories through the measurement of observable social realities, using data originally collected from the field (Saunders *et al.*, 2007; Ericksson & Kovalaineen, 2008). This philosophy is upon values of reason, truths, and validity, and there is a focus purely on facts measured empirically on variables using quantitative methods survey, and statistical analysis of the data (Thorpe & Jackson, 2008). Under this paradigm, theoretical models were developed that can be generalized to explain the cause-and-effect relationships (Saunders *et al.*, 2007).

3.3 Research Design

There is no single design that exists in isolation (Saunders *et al.*, 2007); therefore, combining different designs in one study enables triangulation and increases the validity of the findings. The study will employ a combination of both explanatory and descriptive research designs to explain quality management Implementation and organization performance.

3.4 Instruments of data collection

Questionnaires, interviews, and direct observations are mentioned as the most important means of data collection tools (Kothari, 1985). Accordingly, open-ended and close-ended questionnaires and semi-structured interviews were used to collect primary data from coffee exporting and processing firm's top management, middle management, lower management, and

workers using stratified sampling methods, and also secondary data will be collected from coffee exporting and processing firms and quality regulatory and inspection bodies.

3.5 Empirical Model

This study used the Regression Model because the dependent variable is continuous, as recommended by Muthen and Muthen (2007). Multiple Linear Regression was used to establish the combined effect of all independent variables on the dependent variable and Step-by-step Method used to analyze the effect of moderating and mediating variable effect on the relationship between the predictor variable and dependent variable (Field, 2009).

The model was presented using a linear equation. Using multiple linear regression analysis, it was possible to calculate the values of the constant-coefficient (β_0) and the slope coefficient (β) from data already collected.

The overall equation of the effect of independent variables on firm's performance

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \dots \dots \dots (3.1)$$

Where;

Y= Firms performance

B₀= Constant (intercept)

β_1 - β_3 = Coefficients of independent variable

X₁- X₃= Composite index of independent variable

ε = Error term.

3.5.1 Testing for moderation

To establish the effect of the operating environment as a moderating variable on the relationship between quality management practices and performance of coffee processing and exporting companies or determine whether it is simply an explanatory variable, the following steps wise regressions were to be estimated. First, Model (3.1) was estimated as the base model to determine the relationship between the dependent variable and the independent variable. Second, Model (3.2) which included the operating environment as the moderating variable was estimated.

$$Y = \beta_0 + \beta_1 X + \beta_2 MO + \varepsilon \dots \dots \dots (3.2)$$

Where;

Y= firms performance

X = quality management practices

MO= Operating environment

Finally, Model 3.3 was estimated to give the direction and effect of the moderator on the independent variable and its total effect on the dependent variable.

$$Y = \beta_0 + \beta_1 X + \beta_2 OE + \beta_3 X * OE + \epsilon \dots \dots \dots (3.3)$$

Where,

X*OE= quality management practices * operating environment (Interaction term)

If the operating environment was significant when introduced into Model (3.1), then this explains the first condition of explanatory where all variables should be significant (Mackinnon *et al.*, 2007). Model (3.2) was estimated where products of the operating environment and quality management practices were used to estimate the moderating effects. If the coefficients in Model (3.2) are not significant and the operating environment in Model (3.3) is significant, there is no moderating effect. Thus, the operating environment is just an explanatory variable.

Table 3.1 :Decision –making for moderation

Model 3.2	Model 3.3	Total effect	Conclusion
β_1 is not significant (p>0.05)		-	No overall effect to moderate
β_1 is significant (p>0.05)	β_2 is not significant (p>0.05)	-	Moderating variable is an explanatory variable
β_1 is significant (p>0.05)	β_2 is significant (p>0.05)	β_3	Moderating variable has a moderating effect

Source; Whisman and McClelland, (2005)

Table 3.1 indicates that in case of moderation is significant, the coefficient (β_3) of the interaction term (Quality management practices Vs Operating environment) in Model 3.3 would yield the strength and direction of the moderating variable.

3.5.2 Testing for Mediation

To determine whether organizational capability mediated the independent variable and the dependent variable, the three models were to be estimated as recommended by Baron and Kenny (1986). Model 3.4 was estimated as the base model to determine the relationship between the independent variable (QMP) and the dependent variable Firm's performance. Model 3.5 estimated the relationship between the mediating variable (Organizational capability) and the independent variable (QMP). Finally, Model 3.6 was estimated to determine whether there was complete, partial, or no mediation between the independent variable and the dependent variable.

Regression equation of quality management practices (X) predicting OC (M)

$$M = \beta_0 + \beta_1 X + \varepsilon \dots\dots\dots \text{Model (3.4)}$$

Regression equation of firm's performance (Y) certification predicting OC (M)

$$Y = \beta_0 + \beta_1 M + \varepsilon \dots\dots\dots \text{Model (3.5)}$$

Regression equation of quality management practices (X) and OC (M) predicting CP (Y)

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \varepsilon \dots\dots\dots \text{Model (3.6)}$$

Where;

Y = firms performance

M =mediating Variable (organizational capability)

β_1 and β_2 are parameters to be estimated .

β_1 =Error term

For decision-making criteria on the type of mediation, Table 3.2 was adopted from Baron and Kenny (1986).

Table 3.2 Mediation Decision Making Criteria

	Outcomes	Conclusions
1	If β_1 is significant in model 3.4	Complete Mediation
	If β_1 are significant in model 3.5	
	If β_1 , are not significant and β_2 is significant in model 3.6	
2	If β_1 is significant in model 3.4	Partial Mediation
	If β_1 in model 3.5 is significant but β_1 not significant in model 3.6 and β_2 is significant in model 3.6	
3	If β_1 is not significant in model 3.4	No Mediation
	If β_1 are not significant in model 3.5	
	If β_1 in model 3.4 are significant and equal to β_1 in model 3.6 and β_2 is not significant in model 3.6	

Source; Baron and Kenny (1986)

In a complete mediation, β_1 in Model 3.4 and 3.5 must be significant but insignificant in Model 3.6, and β_2 must be significant in Model 3.6. For partial mediation, β_1 in Models 3.4 and 3.5 must be significant but β_1 in model 3.5 should be significant but β_1 should not be significant in Model 3.6 and β_2 should be significant in model 3.6. In no mediation, β_1 in Models 3.4 and 3.5 must not be significant, but β_1 should be significant in model 3.6.

3.6 Measurement of variables

The dependent variable in this study was the firm's performance, while quality management practices indicators (Quality tools, techniques and methods, continuous improvement, customer focus, and top management support) were independent variables. The study considered the organizational capability to be the mediating variable, and the operating environment was considered the moderating variable. These are summarized in Table: 3.2.

Table: 3.3 Measurement of variables.

Category	Variable	Indicators	Operationalization	Measurement
Dependent Variable	Firms' performance	Productivity	Ability to attain and improve output per unit of input of the quality initiatives made.	Aggregated Index of 1-5 point scale
		Effectiveness	Ability of an organization to provide the best products within a given structure	
		Employee satisfaction	Workers are involved and happy with their job and their needs and working conditions are met	
		Firms performance	Customers needs and expectations are met	
Independent Variable	Continuous Improvement	Employees training	Providing Opportunities for employees to learn and acquire knowledge and skills	Aggregated index of 1-5 point scale
		Systems measurements	How well QMP and processes are doing.	
		Continuous quality audits	Improved quality management systems through continuous review of quality systems	
		Benchmarking	Setting quality standards in relation to best performance	
	Customer and market Focus	Customer complaints handling	Customers problems and requirements are reviewed regularly	
		Customer feedback systems	Interaction with customers about Satisfaction or dissatisfaction with products or services.	
		Customer retentions methods	The activity the organization undertakes in order to reduce customer defections	
		Market based	Firms respond to customer service through gathering information from	

Category	Variable	Indicators	Operationalization	Measurement
		research	customers and giving feedback.	
	Top management Commitment	Visionary direction	Planning and meeting set goals.	
		Resources allocation	Supplies are availed/ Provided when required.	
		Quality leadership	Commitment to quality	
		Quality policies	Guidelines are reviewed regularly to meet the needs of the customers.	
	Quality tools	The seven quality tools	Made the seven quality tools for problem identification and analysis for quality improvement	Aggregated index of 1-5 point scale
Moderating Variable	Operating environment	Competition	The company uses its opportunities and strengths to be ahead of the others in the same industry	Aggregated index of 1-6 point scale
		Market conditions	A company advertises and promotes its products aggressively and on time.	
		Industry regulators	There is increased awareness of industry regulations and legal requirements in the company.	
Mediating Variable	Organizational capability	Process orientation	A collection of activities that takes one or more kinds of input and creates an output that is of value to the customer.	
		Employee empowerment	The company involves employees in the decision making process.	
		Quality culture	There is positive quality customs and cooperation within the company.	
		System	The process of bringing together	

Category	Variable	Indicators	Operationalization	Measurement
		integration	all the firms' activities into one and ensuring that they function together as a system	

(Source: Researcher, 2020)

3.7 Target population

The target population of the study consists of 160 export coffee processor and active exporters of coffee in Ethiopia according to ECTA 10 year's data whose covers 85% of country's coffee export share in terms of value and volume every year based in Addis Ababa and Dire Dawa . These firms targeted for the survey, as they represent the coffee industry in Ethiopia.

3.8 Sampling design and procedure

Respondents selected through a stratified sampling technique for adequate representation of the population in the sample. Top management, middle-level management, and quality workers considered appropriate respondents for the study, hence the three respondents from coffee export processors and exporting firms, 160 active exporters which cover 85% of the country's coffee export share in terms of value and volume as a population from this we take 40 companies those who export more than 3,500tons as highest exporters, in between 3,500- 1,500 tons as medium exporters and below 1,500 tons lowest exporters by volume. Top management responsible for policy formulation and industry regulation, while middle management carries out implementation and maintenance of quality management practice and is assumed to be knowledgeable in the area. This was consistent with the view of Gerhart (2000) that quality management system surveys based on single respondents are significantly undermined by the presence of measurement error, hence the choice of two respondents.

3.9 Data collection instruments

Primary data was collected using self-administered questionnaires (Appendix). The questionnaires were then used to explore the quality manager's and internal auditor's views and observations on the study variables identified in the conceptual framework. Structured self-administered questionnaires were used by the researchers to get first-hand information (Kanji,

2003). The questionnaire consisted of nine parts: part one general information, part two organizational capacity, part three operating environment, part four top management commitment, part five firms performance, part six quality standard and system implementation, part seven quality tools, technique and method implementation and continuous improvement assessment using Baldrige National quality program criteria

3.10 Validity and Reliability of instruments

3.10.1 Validity

To ensure content validity, a pilot test was carried out with 12 respondents, where the results were used to make adjustments where necessary to ensure the instrument measures what it was supposed to measure (Saunders *et al.*, 2007). The pilot study tested whether the respondents experienced difficulties in understanding items, whether they omitted items, estimate the time respondents took to complete the instrument and gave an indication of how the data collecting instrument would perform in the field. The results revealed that the questionnaires were easy to understand and respond to within a good range of time, but, it needs Amharic translation for the lower level worker to understand easily.

For the validity of the instruments, the researcher ensured that the questions conformed with the study objectives. Expert opinion was sought from quality experts to evaluate the relevance, wording, and clarity of questions in the instrument as recommended by Gay (1996). Construct validity was achieved by ensuring that the relationship between the operationalize variables was by the represented theoretical constructs as acquired in the literature review. The variables of the study were operationalized to reflect the theoretical assumptions that underpinned the conceptual framework for the study. The study also relied on instruments developed in other related studies as well as concepts generated from a broad range of appropriate literature (Arumugum *et al.*, 2008).

3.10.2 Reliability

The reliability of this study was censured by using Cronbach's alpha coefficient of internal consistency because it provides a unique quantitative estimate of the internal consistency of the scale (Zikmund, 2009). According (Tavakol & Dennick, 2011), for the instrument to be reliable,

the coefficient has to be above 0.7. In general, a score of more than 0.7 is usually okay, however some authors suggest higher value 0.9 to 0.95.

Table: 3.4 Reliability Analyses

Variable	Cronbach Alpha coefficient score	No. of Items	Internal consistency	Comments Above 0.7 Reliable
Quality standard & system	0.874	19	Good	Reliable
Quality tools, methods & techniques	0.825	14	Good	Reliable
Organizational capability	0.913	13	Excellent	Reliable
Operating environments	0.812	8	Good	Reliable
Top management commitment	0.931	13	Excellent	Reliable
Firms performance	0.940	14	Excellent	Reliable
Quality management implementation self-assessment tools	0.938	47	Excellent	Reliable
Continuous improvement	0.950	13	Excellent	Reliable

(Source: Researcher, 2020)

3.11 Methods of Data Analysis

Data analysis is the process of bringing order, structure, and meaning to the mass of information collected (Mugenda & Mugenda, 2003). The quality of the data needs to be confirmed before the data can be accepted for the actual statistical analysis. Data were analyzed using both descriptive and inferential statistics in the Statistical Package for Social Sciences (SPSS) v Version 20.0 software. Interpretations were made consistent with the provisions of each test. Descriptive statistics, including measures of mean and standard deviation, were calculated to profile organization, individual respondents, and the study variables.

Pearson’s Product Moment Correlation (r) was derived to show the nature and strength of the relationship. The coefficient of determination (R^2) was used to measure the amount of variation in the dependent variable (firm’s performance) explained by the independent variables (Quality

management practice). The F-ratio generated in the ANOVA table measured the probability of chance, a departure from the straight line (line of best fit). The p-value of the F-ratio generated should be less than 0.05 for the equation to be statistically significant at a 5% level of significance. When the p-value is greater than 0.05, the model is not statistically significant. For a p-value of less than 0.05, the relationship was considered significant at a 5% level of significance (Hair *et al.*, 2010).

To derive the composite index for the variable of the study, the harmonic mean formula was used (Gupta, 2008).

$$C_i = \frac{\sum f_i W_i}{\sum f_i} \dots\dots\dots 3.7$$

Where;

C_i = composite index for variable i

f = Total number of respondents

W_i = aggregate of the weighted company

i = Total number of companies.

3.11.1 Diagnostic tests

The most important assumption was that the data for analysis were drawn from a normally distributed population. Therefore, before conducting the regression analysis, several diagnostic tests, such as Normality, Linearity, and Multicollinearity tests were conducted to establish the appropriateness of the data for making inference (Field, 2009). It was noted that violations of assumptions of multiple regression analysis may result in a biased estimate of relationships, over- or under the confidence of regression of the precision coefficients and untrustworthy confidence interval and significance tests (Chatterjee & Hadi, 2012).

3.11.1.1 Normality test

Normality means the assumption that the error term is normally distributed with a mean of zero and a constant variance. To test for normality, Shapiro–Wilk test was used, which has the power to detect departure from normality due to skewness or kurtosis or both. Its statistic ranges from -0.1 – +1.0 and the figures higher than 0.05 indicate that data is normal (Razali & Wah, 2011). Shapiro-Wilk test assesses whether data is normally distributed against the null hypothesis, such that the sample does not follow a normal distribution. The test of significance cannot be conducted since tests of significance are based on the normal distribution.

3.11.1.2 Linearity test

Pearson's correlation coefficient used to test the linearity of the relationship between the variables as recommended by (Dancey, 2004). The correlation coefficient indicates the strength and direction of a linear relationship. A negative coefficient indicates an inverse relationship where an increase in one variable caused a decrease in the other, whereas a positive correlation indicates a direct influence, where an increase in one variable causes an increase in the other variable (Field, 2009).

3.11.1.3 Test for Homogeneity

The assumption for homoscedasticity requires the variance of the disturbance term to be constant for all observations, and a violation of this assumption gives rise to the problem of heteroscedasticity. The presence of heteroscedasticity will render the estimates inefficient. Levine test (1960) for equality was computed using a one-way ANOVA procedure. It used to assess the equality of variances for a variable calculated for two or more groups. The level of significance for the study was $\alpha = 5\%$, for $p \geq 0.05$ fail to reject, while for $p < 0.05$ rejected and conclude that there is a difference between variances of the population. The result shows the significance level for Levine's test is greater than 0.05, indicate variances homogeneity (Tabachnick & Fidell, 1996).

3.11.1.4 Multicollinearity test

Multicollinearity occurs when two or more predictors in the model are highly correlated and provide redundant information about a response. The assumption of non-multicollinearity requires that none of the explanatory variables in the model should be correlated with any other explanatory variable or with any linear combination of those explanatory variables. The presence of explanatory variables means that it is difficult to separate the impact of x_1 on y from that of x_2 , which makes regression results misleading.

Variance inflation factor (VIF) quantifies the severity of multicollinearity in regression analysis and it provides an index that measures how much the variance of an estimated regression coefficient increased because of multicollinearity. A mean VIF for all the independent and dependent variables less than 3 ($VIF \leq 3$) indicated no multicollinearity (Hair *et al.*, 2010). Furthermore, Field (2009) has suggested that if the variance inflation factors (VIFs) are more

than 10, then there is cause for concern about multicollinearity. Menard (1995) suggested that a Tolerance value of ≥ 0.1 indicates no multicollinearity. Multicollinearity poses a problem for multiple regression models, since as multicollinearity increases, the standard error of coefficients also increases, making them less trustworthy.

Hypotheses were tested to determine whether influence by the independent variable was significant or not. If $p < 0.05$, then the null hypothesis was rejected and vice-versa. SPSS Version 20 used to aid in data analysis. Tables were used to summarize, organize, and present the data collected and analyzed. The results and discussions were provided in Chapter Four.

3.12 Ethical considerations

The researcher prepares and takes an official letter from St. Mary's University to inform and assure the respective organs who are taking part in the study that the data collection is mainly for academic purposes. During data collection, a brief explanation will be given to the respondents about the benefit obtained from the research activity. Confidentiality and anonymity of the respondents will be ensured throughout the execution of the study. Participants will not be forced to disclose their personal information.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This chapter presents the study findings, starting with descriptive statistics, followed by estimation of diagnostic tests and finally, the empirical results are presented and discussed.

4.2. Response Rate

Data were coded and cleaned to ensure consistency. Data collected from 120 respondents which are top managers, middle managers, and workers of 40 coffee processing and exporting firms, and the response rate was 80% and 32 respondents which are 11 top management 11 middle management and 10 company workers interviewed by phone .

Table: 4.1 Response rate.

	Questionnaires Administered	Questionnaires filled and Returned	Percentage
Respondents	120	96	80%

(Source; Survey data, 2020)

As indicated in Table 4.1, out of 120 questionnaires distributed, 96 did correctly filled and returned. This constitutes a response rate of 80%, which was satisfactory to make conclusions for the study. According to Mugenda and Mugenda (2003), Rogelberg and Stanton (2007) and Saunders *et al.* (2007), a response rate of 50% is adequate; a rate of 60% is good and a response rate of 70% and over is very good. Based on this awareness, the response rate in this study was considered to be very good for the study.

4.2.1 General Profile of companies and respondents

Profiles of the firms sampled, sources of coffee bean for export and industrial processing, the capacity of the processing plant, capacity of roasting and grounding, and level of education are presented in Table: 4.2.

Table: 4.2 Results for General Profile of companies and respondents

Type of Company	Frequency	Percent (%)
Private	84	87.5
Cooperative Union	12	12.5
Total	96	100
Export processing		
Own	89	92.7
Rented	7	7.3
Total	96	100
Sources of coffee bean for export & Industrial process		
Own farm only	11	11.5
Purchasing ECX only	17	17.7
Both own farm & ECX	56	58.3
Cooperative members farmers	12	12.5
Total	96	100
Level of Education		
Below 10 th Grade	2	2.08
10 th /12 Complete	6	6.25
Diploma	8	8.34
Degree	66	68.75
Master	14	14.58
Total	96	100

(Source: Survey Data, 2020)

The results presented in Table 4.2 show that 87.5 % of the coffee processing and exporting firms were private and 12.5% cooperative union, which was equivalent to 92.7% firms have their export processing plant the rest 7.3 % exporter use export processing by rent. This was consistent with the population under study, which had more coffee processor and exporter firms. This was a good indication that the firms had enough facilities to support quality management practices and to sustain the quality management system. Therefore, the study findings, which were based on a sample of 40 coffee processing and exporting firms 92.7% of coffee processor and exporter 7.3% coffee export only done by the exporters which are under the study, can be used to make generalizations for the entire population. When we observe and interview the selected companies 40% of them have modern new full optical sorter export processing facilities with high capacity which provide the best solution in color sorting of defects.

The coffee processing and exporting firms' uses a different source of coffee bean for export and industrial processing, which are as Table: 4.2 indicated 11.5% from their farm, 17.7 % purchasing from Ethiopian commodity Exchange, 58.3 % both purchasing Ethiopian commodity exchange and own farm and 12.5% by collecting cooperative member's farmers. This indicated that those who use a source of coffee bean form their farm and cooperative members can have the advantage to use certification schemes or standards like Fair Trade, Organic Coffee, Bird-Friendly, UTZ, and Global Forest Alliance and tractability.

4.3 Descriptive statistics

4.3.1 Quality standard & system

The variable Quality standard & system Focus measured using indicators comprising Implementation of quality management standard & system whether internal, external, adopted, self-imposed, buyer imposed, and/or regulator imposed. The descriptive statistics for each of these indicators are presented and discussed in Table 4.3.

Table 4.3: Quality standard & system that affect performance

Descriptions	N	Mean	Std. Deviation
Quality management system	96	1.02	0.14
ISO 9001:2015 QMS implementation	96	1.69	0.47
ISO 22000:2005 food safety management system	96	1.79	0.41
ISO 14001: 2005 Environmental safety system	96	1.94	0.24
Kiazen	96	2.00	0.00
Six sigma	96	1.97	0.17
HACCP	96	1.96	0.20
GLOBAL GAP	96	1.85	0.35
CAFÉ practice	96	1.85	0.35
Rainforest Alliance	96	1.60	0.49
UTZ	96	1.63	0.48
Fair Trade	96	1.81	0.39
Organic Coffee	96	1.63	0.49
Traceability system	96	1.95	0.22
Certification against private standard	96	1.54	1.50
Supplier code of conduct by buying firm	96	1.53	0.50
Aggregate scores	96	1.70	0.38

(Source: Survey data, 2020)

The results in Table 4.3 reveal that the mean score for the items used to measure quality standard and system was 1.70 and the standard deviation was 0.38. The overall mean score of 1.70 indicated that most of the firms not implemented quality standards and systems. If we take the implementation of Kaizen as a quality management standard (mean 2.0 SD 0.0) this indicates all companies not implemented Kaizen except few companies.

There are several measures of coffee quality in the Ethiopian market place. They include, most importantly, certification, which affects marketability and prices, but not necessarily the intrinsic quality of the coffee; geographical indications of origin; grades; and washing. Certification and traceability have become major new requirements in the global food trade (Swinnen, 2007), with such certification schemes often implemented to add value to a product (Jena et al., 2012). By guaranteeing the product origin, fair prices to producers, ethical standards of production and processing, environmental sustainability in production, and safety and quality safeguards for a product, international buyers and consumers are often willing to pay extra for a product. Conversely, adhering to those new requirements can be costly. In the global coffee sector, it is estimated that around 16 percent of current coffee production is certified. This share should reach over 25 percent by 2015 (Panhuisen and Van Reenen, 2012).

There are currently a number of certification schemes in place, most importantly Fair Trade, Organic Coffee, Bird-Friendly, UTZ, and Global Forest Alliance. In the case of Ethiopia, the share of certified coffee is increasing but is significantly lower than in other countries. For example, data from the Coffee & Tea Authority show that only 2 percent of coffee transactions over the period 2006-2018 done under the Fair Trade scheme as Table: 4.3 indicated only cooperative union and commercial farms use these standards. This suggests that Ethiopia likely foregoes the commercial rewards of the price premiums associated with these certification schemes.

4.3.2 Utilization of Quality tools, techniques & methods

The variable Quality tools, techniques & methods were measured using indicators comprising utilization of seven quality tools, Techniques, and quality methods. The descriptive statistics for each of these indicators are presented and discussed in Table 4.4.

Table: 4.4 Utilization of Quality tools, techniques & methods that affect performance

Descriptions	N	Mean	Std. Deviation
Process flow chart	96	2.74	1.17
Pareto diagram	96	3.53	1.07
Check sheet	96	3.00	1.11
Histogram	96	2.34	1.36
Cause and effect diagram	96	3.61	0.95
Scatter charts	96	3.60	0.94
Bench marking	96	2.90	1.07
Self-assessment	96	2.77	1.23
Internal control system	96	1.71	0.86
Market survey	96	1.86	0.92
Customer satisfaction survey	96	2.09	0.93
PDCA(plan, do, check & act)	96	2.33	1.09
DMAIC (define, measure, analyze, improve & control	96	2.41	1.18
Aggregate scores	96	2.59	1.05

(Source: Survey data, 2020)

As shown in Table 4.4, the overall mean score of 2.59 indicates that firms uses rarely quality tools, techniques, and methods to improve the performance of coffee processing and exporting firms. However, it was noticeable from the results above that respondents frequently use the internal control system to improve quality in the firm, which are scored (mean 1.71, SD 0.86) better than the other quality management tools, techniques and methods. In the interview section, most of the company says they frequently use Self-assessment, internal control system, market survey, and PDCA(plan, do check & act) to improve the quality of the firm.

4.3.3 Organizational capability

This sub-section presents the descriptive statistics for the mediating study variable, organizational capability.

Table: 4.5 Organizational capabilities

Descriptions	N	Mean	Std. Deviation
There is positive quality culture and cooperation within the company	96	4.38	0.68
Employees work as a team to realize the firm's goals	96	4.32	0.70
There is culture of co-operation between management and employees	96	4.00	0.73
The employees have positive culture change on QMS issues	96	3.80	0.77
The firm involves employees in decision making process	96	3.69	0.77
Employees are involved in decision-making in all quality matters within the company	96	3.66	0.86
Employees are trained on quality management issues when need arises	96	4.00	0.75
Processes are structured to achieve efficiency in the company	96	4.07	0.76
The firm structures facilitate high performance	96	3.99	0.71
Production procedures are efficient for quality products	96	4.18	0.69
Systems enhance coordination of firms activities and service delivery	96	4.00	0.79
The firm has good performance management systems, leading to employee satisfaction	96	3.81	0.94
There are appropriate systems for employee training to enhance performance	96	3.61	0.99
Aggregate scores	96	3.96	0.78

(Source: Survey data, 2020)

As presented in Table 4.5, the overall mean score and standard deviation stand at 3.96 and 0.78 respectively. The mean indicates that firms can support quality management practices, leading to performance enhancement. The findings respondents strongly agreed that processes structured to achieve firms' efficiency as shown by a mean 4.18, the firms' structures facilitate high performance indicated by a mean 3.99, systems enhance coordination of firms' activities and

service delivery as shown by a mean 4.00, and production procedures are efficient for quality products as shown by a mean 4.18.

4.3.4 Operating Environment.

Coffee processing and exporting companies operate in a highly complex and unstable external environment. The external environment the same for all firms in the industry, yet the way managers perceive and interpret the environment may vary, and this in turn affects the overall individual firm’s performance. The respondents asked to indicate the level of disagreement and agreement to which they responded to various quality management practices. The results summarized in Table 4.6.

Table: 4.6 Operating Environment

Descriptions	N	Mean	Std. Deviation
Top management responds quickly and effectively to satisfy customer needs as per industry regulations.	96	3.93	0.82
Company’s product specification is labeled according to legal requirements	96	4.04	0.73
There is increased awareness of government regulations and regal requirements in the company	96	4.05	0.72
The company uses its opportunities and strengths to be ahead of competition.	96	4.22	0.66
Company produces quality products to beat competition.	96	4.24	0.84
Company advertizes and promotes its products aggressively and in a timely manner.	96	4.35	0.64
Company products are priced competitively.	96	4.39	0.72
There is set time limit to meet the product delivery	96	4.45	0.64
Aggregate scores	96	4.21	0.72

(Source: Survey data, 2020)

The results presented in Table 4.6 show the average mean score of the operating environment as (4.21, SE 0.72). The results imply that the operating environment moderately affects the level of a company’s performance. The table also shows that responses that the company’s product priced competitively had the highest mean score (4.39, and SE 0.72). This suggests that industry product price is constantly changing competitively, hence the need for firms to scan the

environment since customers are continuously in search of innovative products that will meet their needs and wants and provide as per quality management practices. Whereas, in interview sections, most companies respond to the organizational capacity to compete in the international market, not strong needs improvement and also institutional capacity.

4.3.5 Top management commitment

Top management commitment examined using indicators comprising quality vision, resource allocation, and quality leadership and quality policies. The descriptive statistics for top management commitment are presented below.

Table: 4.7 Top management commitment

Descriptions	N	Mean	Std. Deviation
Quality management is embraced in the vision of the company	96	3.62	0.88
Top management reviews the organization's QMP at planned intervals to ensure continuity, adequacy and effectiveness	96	3.67	0.82
Employees are motivated towards the organization's goals and objectives	96	3.80	0.79
Top management devotes resources for development and support for quality management	96	3.83	0.77
There is provision of resources for training and freedom to act with responsibility and accountability	96	3.84	0.92
Quality policies and procedures are documented and communicated to all employees	96	3.85	0.77
Quality policies are reviewed regularly to meet the needs of the organization	96	3.87	0.83
Quality policies are communicated and understood throughout the company	96	3.91	0.86
Management takes leading position on guiding quality teams	96	3.94	0.84
Top management establish trust and commitment to quality improvement by eliminating fear	96	4.04	0.91
The management allows participative and engagement of employees in making decisions on quality issues	96	4.08	0.85
Authorities and responsibilities are defined and communicated throughout the firms by management	96	4.09	0.84
There is creation and sustenance of shared values and fairness at all levels of the company	96	4.18	0.85
Aggregate scores	96	3.90	0.84

(Source: Survey data, 2020)

The result in Table 4.7 indicates a mean score of 3.90 and a standard deviation of 0.84. There are creation and sustenance of shared values and fairness at all levels of the company who had the highest level of agreement (mean score 4.18, SD 0.85). This shows that most respondents agreed that shared values and fairness at all levels of the company are important to the firm for effective management of quality management practices to enhance the firm's performance. The lowest score noted by the respondents was Quality management embraced in the vision of the company (mean score 3.62, SD 0.88). Whereas when interviewed middle and lower-level workers top management always concerned profitability not devotes resources for development and support for quality management.

4.3.6 Firms' performance

The respondent opinion on performance of the firm in relation to employee satisfaction, effectiveness, performance and productivity the result summarized in Table: 4.8.

Table: 4.8 Firm Performance

Descriptions	N	Mean	Std. Deviation
The management involve employees in decision-making on all quality matters	96	3.68	1.01
Company offers employees opportunity for career growth through training and development	96	3.57	0.99
There is improved information flow between top management and employees within the company	96	3.70	0.95
Employees are well trained on quality matters to enhance efficiency	96	3.71	0.90
Company products are delivered to customers on time	96	3.96	0.91
Employees are able to meet strict deadlines	96	3.71	0.82
Employees are recognized and rewarded for performance	96	3.78	0.68
Company provides quality products which are pocket friendly to customers	96	3.63	0.89
There was less customers complaints	96	3.78	0.84
The management ensures products meet customer expectations through feed back	96	3.79	0.85
The firm has high customer retention and growth	96	3.73	0.92
The company has fewer defects and less wastage	96	3.64	0.81
There is improved lead time up to delivery	96	3.76	0.89
There is high cost reduction after quality management practices	96	3.56	0.84
Aggregate scores	96	3.71	0.88

(Source: Survey data, 2020)

The results in Table 4.8 indicates that majority of the respondents agreed that continuous improvement contributed highly to a firm's performance with an overall mean score of (mean 3.71, SD 0.88). This indicated by the mean score range of 3.56to 3.96. There was another category of respondents who moderately agreed there was improved information flow between top management and employees within the company, with a mean score of 3.70 consequently, with a mean score of 3.96, respondents agreed that their firms' products are delivered to customers on time.

4.3.7 Quality management implementation by self-assessment tools

The domain of operational excellence must be expanded to include safety, environmental integrity, profitability, good citizenship, risk, reliability, and asset integrity, and human performance improvement, as well as operational efficiency. The assessment model helps to know the organization strength, area of improvement, comprehensively measure what is important to your customers and others who receive your product or service, demonstrate continuous improvement against target and results are caused by approaches which help to assess the level of quality management implementation by Malcolm Baldrige National Quality Award self-assessment model summarized in Table: 4.9.

Table: 4.9 Quality Management implementation MBNQA self-assessment model

Descriptions	N	Mean	Std. Deviation
Leadership			
Senior executives always emphasize the importance of customer orientation	96	3.73	0.97
Senior executives take our product and service quality seriously	96	3.90	0.99
Senior executives adapt their business strategies to market trends	96	4.32	5.19
We always use ethical business practices	96	3.97	0.87
We anticipate public concerns about our products, services, and operations	96	3.98	0.93
We participate enthusiastically in social and community services	96	3.98	0.88
Senior executives take employees' feedback and surveys seriously	96	3.64	0.93
Aggregate scores	96	3.93	1.54
Strategic planning			
We have clear strategic objectives for our organization	96	4.15	0.76
In defining our strategic objectives, we carefully considered various potential factors such as market trends, competitive environment, and our capability	96	4.02	0.94
We develop realistic short-term and long-term plans and corresponding actions	96	3.84	1.01
Every employee in our organization is clear about our strategic objective and the action plans to accomplish it	96	3.43	0.92
Every employee in our organization agrees with and supports our strategic objective and action plans	96	3.71	0.86

Descriptions	N	Mean	Std. Deviation
When selecting our suppliers, their capability to meet our quality requirements is the primary consideration	96	3.90	0.86
Aggregate scores	96	3.83	0.90
Customer and market focus			
We understand our target customers, customer groups, and market segments well	96	4.12	0.78
We take our customers' opinions and suggestions seriously	96	4.33	0.69
We study our customers' requirements and disseminate our customer knowledge in a timely manner	96	4.09	0.84
We have a well-established communication channel with our customers, allowing customers to seek help and information, or to make a complaint	96	4.26	0.90
We have an effective customer management system, which solves customer complaints or problems in a timely manner	96	3.92	0.81
We closely monitor our competitors' actions	96	3.98	0.81
We are fully aware of market trends	96	4.18	0.72
Aggregate scores	96	4.12	0.79
Information analysis			
We have an effective system to assess our business performance	96	3.99	0.92
We have a clear appraisal system for every department, unit, and employee	96	3.79	0.86
All employees understand their performance indicators well and take them seriously	96	3.66	0.79
We adjust our performance indicators and appraisal systems according to the evolving internal and external business environment	96	3.79	0.77
Senior executives adjust policy and strategy by analyzing information and facts	96	3.84	0.98
Aggregate scores	96	3.81	0.86
Human resource focus			
We empower our employees	96	3.84	0.98
We have an transparent and effective appraisal system for recognizing and rewarding employees for their efforts	96	3.86	0.93
We stress teamwork and team spirit	96	3.61	0.95
We train our employees in quality concepts, taking care of their needs and developing their competencies	96	3.78	0.95
We provide a safe and healthy work environment	96	3.89	1.06
We provide special training for employees to serve our customers well	96	3.40	1.05

Descriptions	N	Mean	Std. Deviation
Aggregate scores	96	3.73	0.99
Process management			
When designing business processes, we carefully consider various factors, such as design quality, process cycle time, costs, new technology and productivity	96	3.77	1.07
Before applying a new production or delivery process, we conduct comprehensive tests to assure its quality	96	3.71	0.98
We have appropriate management measures to control and improve the production or delivery processes	96	3.75	0.92
We continuously improve our production or delivery processes, enhancing the overall product and service quality	96	3.90	0.82
We share our experience in process improvement with other departments or units	96	3.55	0.96
We improve our business processes to achieve better performance and to keep them up to date with business needs and directions	96	3.88	0.77
We closely cooperate with our suppliers	96	3.95	0.89
Aggregate scores	96	3.73	0.99
Business results			
Customers are satisfied with our products and/or services	96	4.21	0.81
Our company's profitability is quite good	96	3.75	0.81
Our remuneration and benefits are quite good	96	3.69	0.89
Employees are satisfied with the department for which they work	96	3.72	0.96
Our business has been growing steadily	96	3.79	0.82
Our product quality has been improving steadily	96	4.04	0.83
Our productivity has been rising steadily	96	3.89	0.90
Customer evaluation of our performance has been improving	96	3.93	1.06
Aggregate scores	96	3.88	0.88
Over all aggregates	96	3.87	0.99

(Source: Survey data, 2020)

As shown in Table 4.9, the overall mean score of 3.87 indicates that firms are moderately good positions when assessing the level of implementation of quality management practice by the MBQNA self-assessment model. However, it was noticeable from the results above respondents

agreed on customer and market focus, leadership sub-categories of the assessment we take our customers' opinions and suggestions seriously (mean 4.33, SD 0.68) Senior executives adapt their business strategies to market trends(mean 4.32, SD 5.19) as in good position implementation of quality management. Subsequently, the majority of the respondents from leadership, strategic planning, customer and market focus, information analysis, human resource focus, process management, and business result assessment tools scored mean 3.43-4.33 and SD 0.77-5.19).

4.3.8 Continuous improvement

The variable Continuous improvement measured using indicators comprising quality improvement priority, management support and engagement, internal audit, performance review, and quality improvement process using response level not at all, very little, somewhat, good, strong and don't know through answer question the level of quality management implementation and evaluation by the department or division which have decision-making authority. The descriptive statistics for each of these indicators are presented and discussed in Table 4.10.

Table: 4.10 Continuous improvement that affects performance

Descriptions	N	Mean	Std. Deviation
Quality improvement is part of organizational strategic direction statements	96	3.53	1.00
Education on quality and standard is provided to staff	96	3.14	1.03
Quality and safety policies are in place	96	3.52	0.97
Quality improvement processes are in place	96	3.48	0.97
Senior management or executive are aware and supportive of quality improvement activities	96	3.65	1.07
Middle/line management are supportive of quality improvement activities	96	3.41	0.99
Quality is a part of the routine agenda of all management meetings	96	3.43	0.93
Routine processes are in place for the collection and reporting of internal audit data	96	3.37	1.06
There is a multidisciplinary forum for discussion of internal audit and quality standard	96	3.14	1.10
Systems accountability are in place for the implementation of quality improvement recommendations from internal audit	96	3.22	1.12
Systems are in place for regular review of performance against standards or benchmarks	96	3.09	1.06
There are appointed staff who are responsible for quality improvement	96	3.51	1.22
Accreditation by an appropriate accreditation agency is in place?	96	2.68	1.40
Aggregate scores	96	3.32	107

(Source: Survey data, 2020)

The results in Table 4.10 reveal that the mean score for the items used to measure quality improvement as a priority within the firms was 3.53 and the standard deviation was 1.00. The overall mean score of 3.32 indicated that quality management implements in some areas. This indicated that traditionally, business executives focused on profitability, and operating personal focused on efficiency. There was a clear separation between business and operations, and business fared quite well. But over a decade, this separation of responsibility has led to underperformance.

4.4 Regression Analysis

The regression model using a step-by-step approach was used for the entire research question. However, it was necessary to carry out diagnostic tests to confirm whether the data collected fit well in the model.

4.4.1 Diagnostic tests

The following diagnostic tests were carried out before the regression Analyses test; Normality, Linearity, Homoscedasticity and Multicollinearity tests.

a) Normality Test

Normality tested using the Shapiro-Wilk test, detect departure from normality. The statistic ranges from zero to one figure and $p > 0.05$ indicates the data is normal (Razali & Wah, 2011). Shapiro-Wilk test assesses data is normally distributed against the null hypothesis (H₀) that the sample does not follow a normal distribution. The results are as presented in Table 4.11.

Table: 4.11 Shapiro-Tests

Variables	Statistic	df	Sig.
Top management support	0.657	95	0.000
Continuous improvement	0.743	95	0.000
Customer and market focus	0.733	95	0.001
Firm's performance	0.699	95	0.000

(Source: Survey data, 2020)

Table 4.11 shows that among the research variables, had figures ranging from -0.1 to +1.0 and most of them skewed toward +1.0. The performance had the highest value of calculated probability (0.743), whereas top management commitment had the lowest value of calculated probability (0.657). In this case, the result of calculated probability values for all the research variables is greater than 0.05; therefore, at a 5% level of significance, the sample follows a normal distribution as recommended by Razali & Wah (2011). Normality was also met since there was a large number of participants (120 respondents) used.

b) Linearity Test

Linearity test was done using Pearson's moment correlation coefficient between firm's performance, continuous improvement, customer focus and top management commitment. The results are as shown in Table 4.12.

Table: 4.12 Linearity test

		Firms performance
Top management commitment	Pearson Correlation	0.430**
	Sig. (2-tailed)	0.01
	N	96
Customer and market focus	Pearson Correlation	0.390**
	Sig. (2-tailed)	0.01
	N	96
Continuous improvement	Pearson Correlation	0.612**
	Sig. (2-tailed)	0.000
	N	96
**p < 0.05		

(Source: Survey data, 2020)

Table 4.12 indicates that there is a positive and significant linear relationship between a firm's performance and top management commitment, customer and market focus, and continuous improvement, at a 5 percent level of significance.

The results indicate that top management commitment is ($r=0.430$, $p<0.05$), customer and market focus ($r =0.390$, $p<0.05$), and continuous improvement ($r =0.612$, $p< 0.05$); thus, as continuous improvement increases, so does the firm's performance. A weak but significant relationship was also found between customer and market focus and performance at ($r= 0.390$, $p<0.05$). Top management commitment has a positive relationship, with performance at ($r =0.430$, $p <0.05$). Results implied that there was co-movement of variables and in the same direction. However, it is critical to note that correlation does not necessarily mean that there is a causal relationship

(Woolridge, 2000). Thus, there is a need to conduct a regression analysis to estimate the causal relationship. Therefore, linear regression is suitable and can be estimated in this study.

C) Test for Homogeneity

Homoscedasticity tested using Levene’s Test of Homogeneity of Variances. Homogeneity of variances assumes that the dependent variable exhibits equal variance across the range of predictor variables. If the variances in the two groups are different from each other, then adding the two together is not appropriate and will not yield an estimate of the common within-group variances. Therefore, the Levene Test for Homogeneity of the Variance used to measure the equality of variances for the variables. If the test is significant (calculated probability > 0.05), the two variances are not significantly different and thus approximately equal (Gastwirth, Gel & Miao, 2009). Results are as tabulated in Table 4.13.

Table 4.13: Levine test

Variables	Levine Statistic	df	Sig.
Continuous improvement	1.027	1	0.381
Customer and market focus	1.863	1	0.135
Top management commitment	1.772	1	0.152
Organizational capability	6.049	1	0.079
Operating environment	2.401	1	0.067

(Source: Survey data, 2020)

Table 4.13 reveals that the calculated probability is $p > 0.05$ for all the variables. The calculated probability values generated from this test ranged between 0.067 for Operating Environment and 0.381 for Continuous improvement. The result shows that the significance level of the Levene Test is greater than 0.05, indicating variance homogeneity (Gastwirth *et al.*, 2009).

d) Multicollinearity test

To establish whether multicollinearity would pose a problem, regression analysis was conducted. Tolerance and Variance inflation factors (VIF) are given below in Table 4.14

Table 4.14 : Results of Multicollinearity test

Model	Collinearity Statistics	
	Tolerance	mean VIF
Continuous improvement	0.246	4.956
Customer and market focus	0.438	2.503
Top management commitment	0.349	3.100
Organizational capability	0.439	2.337
Operating environment	0.546	1.946
Dependent variable: Firm's performance		

(Source: Survey data, 2020)

Table 4.14 indicates the VIFs less than 10 and Tolerance greater than 0.1 respectively. VIF of greater than 10 and Tolerance less than 0.1 suggests multicollinearity (Landau & Everitt, 2004). This implies that there was no multicollinearity and thus all the predictor variables maintained in the regression model, within the threshold recommended by Landau and Everett (2004).

4.5 Test of Hypotheses

4.5.1 Quality management practices on firm performance

This section presented the findings based on the objectives. The validity and reliability of the findings are established by the section's discussions of pre-estimation diagnostics, followed by interpretation of results, based on the objectives and tests of the hypothesis. The hypotheses tested at a 5 percent level of significance as a statistic basis for concluding.

H₀ There is no relationship between Quality management practice and Firm performance

Table 4.15: Regression of quality management practice on performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854 ^a	.730	.705	.44110

a) Dependent variable: firm's performance

(Source: Survey data, 2020)

Table 4.15 indicates R and R² values. The *R-value* represents the simple correlation and is 0.854 (the "**R**" Column), indicates a high degree of correlation. The R² value (the "**R Square**" column) indicates how much of the total variation in the dependent variable, Firm performance, can be explained by the independent variable, quality management practice. In this case, 73.0% can be explained, which is very large.

Table 4.16: ANOVA of quality management practice

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	192.597	3	5.836	29.995	.000 ^b
	Residual	71.408	92	.195		
	Total	264.005	95			
a. Dependent variable: firm's performance						

The ANOVA results, Table 4.16, show a statistically significant relationship between quality management practices and firm performance. The F-test results (33, 367) = 29.995, was positive and significant at $p = 0.000 < 0.05$. Therefore, the null hypothesis was rejected and concluded that there was a significant relationship between quality management practices and the firm's performance (i.e., it is a good fit for the data).

Table 4.17 Coefficient of quality management practices and firm's performance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	2.312	.306		7.556	.000
	Quality management practice	.307	.103	.259	6.761	.001
a. Dependent variable: firm's performance						

(Source: Survey data, 2020)

Results in Table 4.17 indicate a multiple linear regression of quality management practices and firm's performance.

$$\text{Firm performance} = 2.312 + 0.307(\text{Quality management practice}) + e \dots\dots\dots 3.1$$

The finding of the study indicates that the composite index of quality management practices was significant, and thus all variables had an effect on performance. Unstandardized Coefficients indicates how much the dependent variable (Firm performance) varies with an independent variable (quality management practice) are held constant. The regression coefficient provides the expected change of the dependent variable (Firm performance) for a one-unit increase in the independent variable (quality management practice). Referring to the coefficient (Table 4.17) above the Unstandardized Coefficient for quality management practice is 0.307. This means for every unit increase (quality management practice) in firms, there are 0.307 firm performance increases per company.

These findings confirm with Feng *et al.* (2008) that quality management practices lead to improved firm performance, The findings concur with study findings by Magd (2008) that quality management practices had effects on performance. The findings further agree with Ab-Wahid and Corner (2009) and Rosemarie (2016) that top management and other employees are critical to the success of quality management systems in organizations.

4.5.2 The moderating role of operating environment

H₀: There is no moderating effect of operating environment on the relationship between quality management practices and performance of export coffee processing and exporting firms in Ethiopia.

The fourth objective sought to assess the moderating effect of the operating environment on the relationship between quality management practices and performance. To test the moderating effect of the operating environment on the relationship between quality management practice and performance, two regression models used as recommended by Whisman and MacClelland (2005). In the first model (3.5), quality management practices, and operating environments regressed on performance. However, in the second model (3.6), quality management practices, operating environment, and the interaction quality management practices and operating

environment regressed on performance. The regression analysis results are presented in Table 4.18.

Table 4.18: Regression of operating environment on performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.553 ^a	.306	.292	.79942
2	.904 ^b	.817	.787	.43792
Dependent variable: firm's performance				
Predictors: (Constant), quality management practices				
Predictors: (Constant), QMP ,and Operating Environment				

(Source: Survey data, 2020)

The results in Table 4.18 show adjusted $R^2 = 0.306$. This implies that the operating environment explains 30.6% variation in Firm's Performance and 69.4 % explained by variables not fitted in the model.

Table 4.19: Analysis of variance statistics

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	110.364	1	13.796	21.587	.000
Residual	250.518	94	.639		
Total	360.883	95			
2 Regression	294.721	3	5.359	27.942	.000
Residual	66.162	92	.192		
Total	360.883	95			
Dependent variable: firm's performance					

(Source: Survey data, 2020)

The results in Table 4.19 indicate that the regression model with interaction term is statistically significant at $F(55, 345) = 27.942$ and $P = 0.000$.

Table 4.20: Coefficient of Operating Environment

Model		Unstandardized Coefficients		standardized Coefficients	t-value	Sig. (p-value)
		B	std error	Beta		
1	(Constant)	2.125	0 .373		5.701	0.000
	QMP	0.307	0.103	0.259	6.761	0.001
	Operating environment	0.303	0.615	0.131	1.297	0.044
2	(Constant)	5.148	0.398		12.945	0.000
	QMP	0.307	0.103	0.259	6.761	0.001
	Operating environment	0.381	0.539	0.185	2.323	0.049
	Product of QMP and operating environment	0.039	1.172	-0.172	0.292	0.010

(Source: Survey data, 2020)

Results in Table 4.20 in Model 3.2 represent the interaction between quality management practices and operating environment. Furthermore, the change in the coefficient of determination (p-value = 0.049) reveals that there is a significant operating effect of the operating environment on the relationship between quality management practices and the firm’s performance at a 5% level of significance.

$$CP = 2.125 + 0.259 QMP + 0.185OP + \varepsilon \dots \dots \dots (3.2).$$

Where:

CP=firms Performance

QMP= quality management practices

OP=Operating environment

E = error term

In Model 3.2, quality management practices is statistically significant at $\beta = 0.259$, $t = 2.650$; $p = 0.001$, suggesting that there is a relationship between quality management practices and performance that could be moderated.

$$CP = 5.148 + 0.259QMP + 0.0.185OP - 0.172QMP * OP + \varepsilon \dots\dots\dots (3.3).$$

Where:

CP=Firms Performance

QMP= quality management practices

OP= operating environment

QMP*OP= Interaction term

ε = error term.

The regression results in Table 4.20 for model 3.3 reveal that at 5% level of significance, the coefficients are statistically significant, with quality management practices at $\beta = 0.259$; $t = 6.761$; $p=0.001$, operating environment at $\beta =0.185$; $t = 2.323$; $p =0.049$, and the interaction term at $\beta = -0.172$; $t= 0.292$; $p = 0.049$. This result concurs with decision criteria on Table 3.1 in Chapter Three.

This implies that changes in the operating environment were significant and negatively affect the relationship between quality management practices and the performance of export coffee processing and export firms in Ethiopia. Therefore, at a 5 % level of significance, the null hypothesis is rejected, implying that the argument that the operating environment has a moderating effect on the relationship between quality management practices and performance is not supported.

The operating environment revealed a moderating effect on the relationship between quality management practices and the company’s performance as the strength and direction reduced when the interaction term of quality management practices and the operating environment introduced. The current study findings echo the assertion of previous studies used that operating environmental factors such as industry regulations and competitive forces to moderate the relationship between quality management practices and firm performance (Psomas *et al.*, 2010). The findings also agree with Maull *et al.* (2001) findings of the operating environment strengthens performance. Besides, the findings support from Lee *et al.* (2009).

Finally, Institutional Theory supports the findings scanning and monitoring of the operating environment, and acting proactively leads to high performance (Daft, 2007). This supported by

the findings of Maull *et al.* (2001) who noted the operating environment of business has factors outside the control of the business which has an impact on business performance. Dowell (2006) noted changes in the operating environment affect business performance, and this can only be averted if the management was able to scan the environment and make changes accordingly. The null hypothesis that the operating environment has no moderating effect on quality management practices and the firm's performance relationship was therefore not supported.

4.5.3 The mediating effect of organizational capability

The study set out to assess the mediating effect of the organizational capability on the relationship between quality management practices and firm's performance.

H₀: Organizational capability has no mediating effect on the relationship between quality management practices and the performance of export coffee processing and exporting firms in Ethiopia

The fifth objective sought to establish the mediating effect of organizational capacity on the relationship between quality management practices and the performance of export coffee processing and exporting firms in Ethiopia. To derive the composite index for the independent variables of the study, the harmonic mean formula was used (Gupta, 2008). Three models, (3.4) through (3.5), were estimated and the decision made as recommended by Baron and Kenny (1986) in Chapter Three.

First, the mediating role examined by undertaking a first and second-order test of the proposed equation. The first test began with regressing quality management practices on a firm's performance to determine if a relationship existed. The second step examines the existence of a significant relationship between the independent variable (Quality Management Practices) and the mediating variable (Organizational Capability) and, if it does exist, move to the next step of examining if there is a relationship between quality management practices and firm's performance.

To determine whether the relationship still exists even after the introduction of organizational capability in the regression model, Firm's Performance regressed on the composite index of

Quality Management Practices and the Standardized regression coefficients (beta) examined to determine the magnitude and direction of the relationship and whether it was statistically significant. If this relationship is not statistically significant, there can be no mediation. The pertinent results are summarized in Table

4.5.3.1 Relationship between QMP and firms performance

The first step in testing the mediated relationship was to determine the nature of the relationship between QMP and the firm’s performance. The predicted model relating QMP and firm’s performance presented in a simple linear regression model as:

$$FP = \beta_0 + \beta_1 QMP + \epsilon \dots\dots\dots 3.1$$

FP= Firms performance

QMP=Quality management practices.

In this equation, β_0 was the estimate of the intercept, ϵ was the associated regression error term, β_1 was the beta value associated with QMP, and FP stood for firm Performance and QMP stood for quality management practices. The relationship between these variables presented below. The composite construct of quality management practices (made up of continuous improvement, customer and market focus, and top management commitment) regressed against the firm’s performance. The model summary associated with the relationship between quality management practices and the firm’s performance presented in Table 4.21.

Table 4.21: Regression results for mediation of organizational capability

Table 4.21: Goodness of fit for quality management practices and firm’s performance

R	R square	Adjusted R square	Std. Error of the Estimate
0.627	0.416	0.400	0.6888

(Source: Survey data, 2020)

Table 4.21 indicates that the adjusted $R^2 = 0.416$, which means that quality management practices explained 41.6 percent of the variations in the firm’s performance, leaving 58.8 percent of the variations explained by variables not fitted in the model. Quality management practices, therefore, provided a moderate fit in explaining variations in a firm’s performance.

Table 4.22: Analysis of variance statistics of quality management practices and firm's performance

	Sums of square	df	Mean Square	F	Sig. (p value)
Regression	258.369	2	8.074	38.677	.000
Residue	76.823	93	.209		
Total	335.192	95			
Dependent variable: firm's performance					

(Source: Survey data, 2020)

The ANOVA Table 4.22, shows the model had an F value (32, 38.677), p-value = 0.000. This meant that the model was significant at the $\alpha = 0.05$ level in explaining the linear relationship between quality management practices and the firm's performance.

Table 4.23: Coefficient of quality management practices and firm's performance

	Unstandardized Coefficients		Standardized Coefficients	t-statistics	Sig. (p-value)
	B	Std. Error	Beta		
Constant	1.637	0.358		4.577	0.000
Quality management practices	0.564	1.676	0.154	6.608	0.008
Predictors: (Constant), quality management practices					
Dependent Variable: Firms Performance					

(Source: Survey data, 2020)

The coefficients of the model presented in Table 4.23 show the results were significant (P-value = 0.008). This meant quality management practices significantly predicting changes in the firm's performance. Following this result, the null hypothesis rejected at $\alpha = 0.05$ level, and therefore there a significant relationship between quality management practices and the firm's performance.

On evaluating the model relating quality management practices and firm's performance, the following relationship was derived:

$$CP = 1.637 + 0.154 QMP + \varepsilon \dots\dots\dots 3.2$$

$$R_2 = 0.416$$

Where;

CP= firms performance

QMP = Quality management practices

The unstandardized beta coefficient in the equation above shows that quality management practices had a beta value (β_1) of 0.154. This meant a unit increase in quality management practices would result in a 15.4 percent increase in the firm's performance. The regression model in the equation above shows a positive significant relationship between quality management practices and the firm's performance. This meant that the higher the levels of quality management practices, the higher the levels of firm performance of coffee export processing and export firms in Ethiopia.

After establishing the existence of a significant relationship between quality management practices and firm performance and that β_1 related to quality management practices was not equal to zero, the test of whether the mediating effect of organizational capability is direct or mediated undertaken. To do this, two regression equations estimated (equation 3.5 and 3.6).

In the second step (Model 3.5), regression analysis to assess the relationship between quality management practices and organizational capability conducted. In this step, quality management practices treated as the independent variable and organizational capability as the dependent variable. The results summarized in Table 4.24

Table 4.24 Model of fit for quality management practices on Organizational capability

R	R square	Adjusted R square	Std. Error of the Estimate
.525	.276	.252	.79189

(Source: Survey data, 2020)

Table 4.24 results portray that quality management practices explain 27.6 percent of the variation in organizational capability (adjusted $R^2 = 0.276$), while 72.4 percent is explained by variables not fitted in the model.

Table 4.25 :Analysis of variance statistics

	Sums of square	df	Mean Square	F	Sig. (p value)
Regression	92.506	1	7.116	11.347	.000
Residue	242.686	94	.627		
Total	335.192	95			

Dependent variable: firm's performance

(Source: Survey data, 2020)

Table 4.25 indicates the results of the overall model and reveals that the relationship between quality management practices and organizational capability is positive and statistically significant at $p < 0.05$ level of significance, where $F = 11.347$, $p\text{-value} = 0.000$. This means that organizational capability plays a role in the relationship between quality management practices and the performance of coffee export processing and export firms in Ethiopia.

Table 4.26 Coefficient of Organizational capacity affects quality management

	Unstandardized Coefficients		Standardized Coefficients	t-statistics	Sig. (p-value)
	B	Std. Error	Beta		
Constant	1.750	0.321		5.371	.000
Organizational Capability	0.819	0.605	0.747	11.251	0.007

Predictors: (Constant), quality management practices
Dependent Variable: Organizational Capability

(Source: Survey data, 2020)

Table 4.26 indicates that, the model had a beta coefficient (β) = 0.747, $p = 0.007$ meaning that the model provided a weak but significant fit.

$$CP = 1.750 + 0.747 OC + \varepsilon \dots \dots \dots (3.5)$$

CP = Firms Performance

OC = Organizational Capability

Results in Table 4.26 implies that the standardized Beta coefficient is statistically significant at ($\beta= 0.747$, $p= 0.007$). This means a unit change in organizational capability results in a 74.7 percent change in quality management practices. The findings imply that the Beta coefficient indicates there is a statistically significant relationship between organizational capability and quality management practices at ($\beta=0.747$, $p= 0.007 < 0.05$). Lee and Sandri (2001) noted there was a positive relationship between quality management practices and organizational capability and supported the study findings. Further, the findings agreed to Yeung *et al.* (2003) and Rosemarie(2016) who established that top management commitment enhances resource allocation, leading to enhanced organizational capability.

The findings of Zakuan *et al.* (2010) established that quality management practices, like continuous improvement, directly influence organizational capability. Terziovski *et al.* (2007) also established there is a positive relationship between continuous improvement in quality management practices and organizational capability, also supporting the findings.

4.5.3.2 Organizational capability and firm's performance

In the third step (Model 3.5), regression analysis to assess the relationship between organizational capability and firm performance conducted. In this step, Organizational Capability treated as the independent variable and Firm's Performance as the dependent variable. The results summarized in Table 4.26.

Table 4.27: Model of fit on organizational capability and firm's performance

R	R square	Adjusted R square	Std. Error of the Estimate
.500	.250	.225	.59728

(Source: Survey data, 2020)

The model summary in Table 4.27 indicates that adjusted $R^2 = 0.250$, which meant that organizational capability explained 25.0 percent of the variations in the firm's performance, leaving 75.0 percent of the variations unexplained. Organizational capability, therefore, provided a moderate fit in explaining variations in firm performance.

Table 4.28: Analysis of variance statistics of Organizational capability and firm's performance

	Sums of square	df	Mean Square	F	Sig. (p value)
Regression	46.067	1	3.544	9.937	.000
Residue	138.057	94	.357		
Total	184.125	95			
Dependent variable: firm's performance					
Predictors: (Constant), organizational capability					

(Source: Survey data, 2020)

The ANOVA results associated with the model presented in Table 4.28 and show that F value =9.937 and the p-value were 0.000. This meant the model was significant and that there was a significant relationship between organizational capability and the firm's performance

Table 4.29: Coefficients of Organizational Capability and Firm's Performance

	Unstandardized Coefficients		Standardized Coefficients	t-statistics	Sig. (p-value)
	B	Std. Error	Beta		
Constant	1.994	0.246	0.480	8.117	0.000
Organizational Capability	0.392	0.353	0.480	7.706	0.008
Predictors; Organizational capability					
Dependent variable: firms performance					

(Source: Survey data, 2020)

The coefficients of the model organizational capability and firm's performance presented in Table 4.29, the organizational capability has a significant p-value = 0.000, which meant that corporate image significant in predicting changes in the firm's performance.

The model rejected at $\alpha = 0.05$ there was a significant relationship between organizational capability and the firm's performance. These results meant the final step of assessing the meditated effect could be undertaken. The model result evaluated and the coefficient of determination ($R^2 = 0.250$), which meant the model provided a weak fit. Finally, a regression

analysis performed and the Beta examined for the strength, direction, and significance of the relationship. In Step One, quality management practices regressed on the Firm's performance, in Step Two; Organizational Capability regressed on Firm's Performance to assess a significant relationship. When controlling for the effect of organizational capability on a firm's performance, the effect of quality management practices on the firm's performance is not statistically significant at $p < 0.05$ level of significance, shows full mediation. The regression results in Table 4.30.

Table 4.30: Model of fit organizational Capability, quality management practices and Firm's performance

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	.500	.250	.225	.59728
2	.826	.683	.634	.41042

(Source: Survey data, 2020)

The results in Table 4.30 show that organizational capability explains 25.0 % of the variation in the firm's performance ($Adj. R^2 = 0.225$). In Step 2, quality management practices add significantly to the firm performance as the variation increased from 0.250 to 0.683 ($Adjusted R^2$ change = 0.433, p -value = .000).

Table 4.31: Analysis of variance statistics

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	46.069	1	3.544	9.933	.000
Residual	138.057	94	.357		
Total	184.125	95			
2 Regression	125.676	3	2.371	14.078	.000
Residual	58.449	92	.168		
Total	184.125	95			
Dependent variable: firm's performance					

(Source: Survey data, 2020)

The results in Table 4.31 reveal that the variance explained by organizational capability is significant ($F = 9.933$, p -value = .000 and $F = 14.078$, p -value = .000).

Table 4.32: Coefficients of model mediated by Organizational Capability

	Unstandardized Coefficients		Standardized Coefficients	t-statistics	Sig. (p-value)
	B	Std. Error	Beta		
Constant	1.994	0.246		8.117	0.000
Organizational Capability	0.392	0.353	0.480	7.706	0.008
Quality management	0.564	1.676	0.154	6.608	0.008
Predictors; Organizational capability Dependent variable: firms performance					

(Source: Survey data, 2020)

The results on Table 4.32 revealed that the regression coefficients for quality management practices increased from 0.154 to 0.480 when Organizational Capability was added to the regression, suggesting that Organizational Capability may be exerting a partial mediating effect. Table 4.33 presents a summary of the mediated regression analysis.

Table 4.33: Model of fit on Organizational Capability

Analysis	R	R square	R square change	B	Significance
Analysis one: Firms Performance on quality management practices	0.627	0.416		0.564	0.008
Analysis two: Organizational capability on quality management practices	0.525	0.276		0.819	0.007
Analysis three: Firms Performance on Organizational capability	0.500	0.250		0.392	0.008
Analysis four: Step 1; Organizational capability on quality management practices					
Step 2; Firms' performance on quality management practices	0.627	0.416		0.564	0.008
Step 3; Firms Performance on quality management practices and Organizational capability	0.826	0.683	0.433	0.564	0.000

(Source: Survey data, 2020)

$$CP = \beta_0 + \beta_1 QMP + \beta_2 OC + \varepsilon \dots \dots \dots (3.6)$$

The pertinent results in Table 4.33 show that R2 increased from 0.250 to 0.683 when the organizational capability included (0.250+ 0.433= 0.683). The results imply that Organizational Capability explains an additional 43.3% of the variation in firm performance. The results indicate that the effect of quality management practices and organizational capability on the company’s performance in the final step of the analysis significant at a 5% level of significance. The regression coefficient increased from $\beta=.564$ to $\beta=.564$ and statistically significant at a 5% level of significance. This indicated partial mediation. That is, part of the effect of the quality management practices is mediated by the organizational capability, but other parts either direct or mediated by other variables not fitted in the model.

According to Baron and Kenny (1986), the model satisfies the three conditions of partial mediation where Model (3.4), Model (3.5), and Model (3.6) were all significant at a 5% level of significance. This implies that organizational capability has a partial mediating effect between the independent variable (quality management practices) and the dependent variable. The decision-making criterion was based on Table 3.2 in Chapter Three, which justifies partial mediation. Therefore, the null hypothesis rejected and stated that the mediating effect of organizational capacity on the relationship between quality management practices and firm performance.

This shows that organizational capability has a partial effect on the influence of quality management practices on the performance of coffee export processing and export firms in Ethiopia. These findings are in agreement with Arumugam *et al.* (2008) and Rosemarie (2016) that organizational capability mediates the relationship between quality management practices and firm performance. Jang and Lin (2008) also support the findings that organizational capability heavily depends on top management support and operating environment, thus mediating the relationship between the operating environment and performance.

4.6 Factors influencing implementation of Quality management and performance

This is due to highly variable yields, which respond to weather conditions and other factors that differ between seasons. Typical for agricultural production and compounded by the perennial tree crop nature of coffee, the price elasticity of supply is low. Output can adjust only slowly and with a lag to price signals.

Demand is also inelastic. Consumers do not adjust their consumption significantly when prices change due to the lack of close substitutes. As a result, the coffee market finds itself in a persistent disequilibrium of demand and supply, moving cyclically between surplus and deficit. This makes the coffee industry highly competitive, Coffee trading and processing have undergone a process of market concentration. According to the Coffee Barometer (Panhuysen and Pierrot, 2018), the five largest trade houses have a combined global market share greater than 25%. Further downstream the value chain, the top-10 roasting companies process 35% of global coffee output.

It is a great challenge to be competitive unless the coffee exports processing and exporting firms implement a quality management system. The study on quality management practice and performance of coffee processing and exporting firms in Ethiopia shows the implementation not strong enough to compete in the world coffee market. To respond to the highly competitive external environment and the customers' expectations, enterprises have to look effective approaches to enhance their management capabilities; the study identifies factors that influence the implementation of quality management practice :

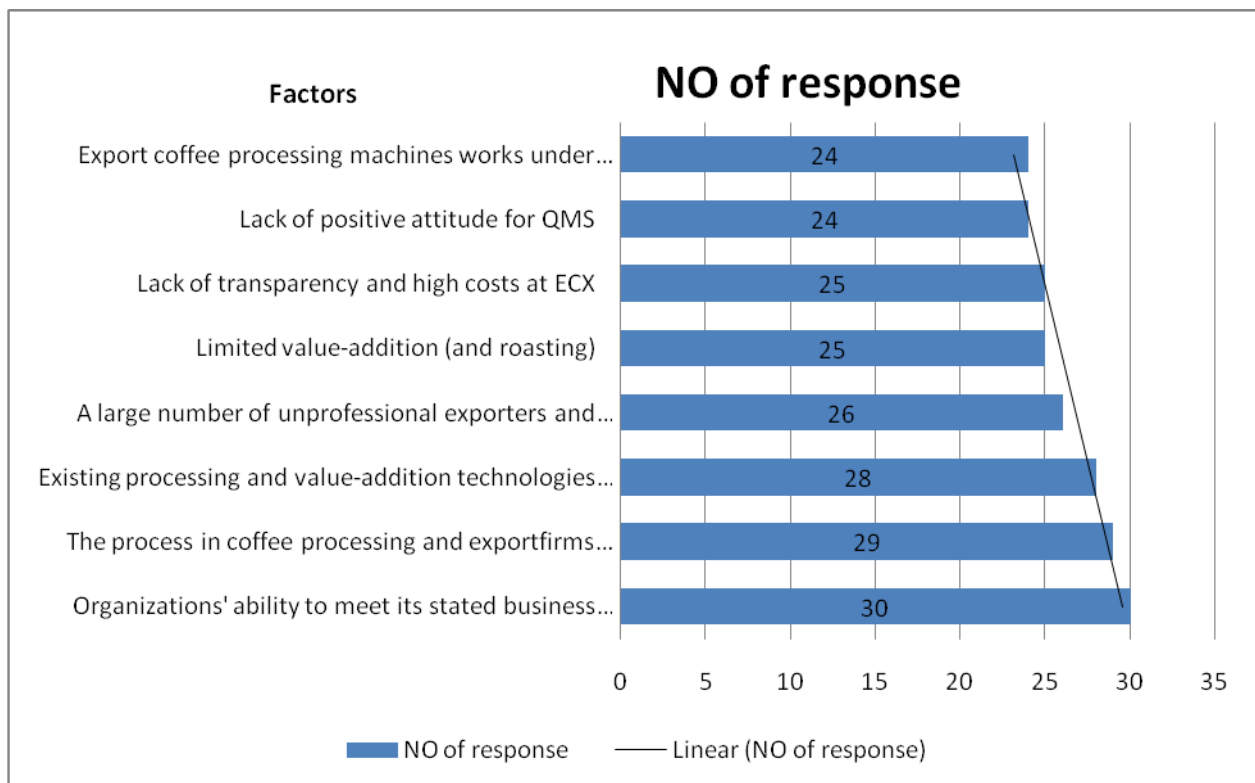
- Organizations' ability to meet its stated business goals and objectives. Experience shows that success in achieving business goals and objectives depends heavily on large, complex, cross-functional business processes, such as product planning, product development, invoicing, patient care, purchasing, materials procurement, parts distribution, and the like.
- The process in coffee export processing and export firms lack three principal dimensions of measuring process quality. Effectiveness, efficiency, and adaptability. The process

is *effective* if the output meets customer needs. It is *efficient* when it is effective at the least cost. The process is *adaptable* when it remains effective and efficient in the face of the many changes that occur over time. Process orientation is vital if management is to meet customer needs and ensure organizational health (Joseph, Blanton, 1998).

- Existing processing and value-addition technologies and guidelines are decades-old in Ethiopia
- A large number of unprofessional exporters and processors
- Limited value-addition (and roasting)
- Lack of transparency and high costs at ECX
- Lack of positive attitude for QMS
- Export coffee processing machines works under capacity

During interview 32 respondent which are 11 top management, 11 middle management and 10 workers of the export coffee processing and export firms prioritize factors which influence quality management implementation as follows

Table 4.34: Factors affecting QMI



(Source: Survey data, 2020)

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusion and contributions of the study to knowledge, recommendations and areas for further research.

5.2 SUMMARY

Ethiopia has a good potential to catch-up the high value coffee market in the world since buyers increasingly appreciate it as high quality coffee. The performance of coffee export processing and exporting firms in Ethiopia has wanted for a long period despite the adoption of quality management practices low. Previous studies analyze the impact of various variables on the export coffee processing and export of coffee but in general most of the studies are not incorporated the effects of coffee processing and exporting firms' quality management practice implementation to trade into the exporter supply model. Besides no one of the previous researchers assess quality management practice as a standard, tool & award in Ethiopia coffee industry.

Finally, to my observation and my involvement in the industry, coffee processors and exporters are faced with a variety of quality management implementation un centrality that appear unduly to restrict to be able them not have better coffee export operations and to address coffee products in multiple foreign markets. The current study sought to establish the relationship between quality management practices and performance of coffee export processing and export firms in Ethiopia.

Consequently, a comprehensive conceptual framework was developed and tested empirically, guided by the following objectives: To assess the type of coffee quality standard and system adopted by coffee exporting and processing firms, to assess the type & degree of utilization of the quality tools ,techniques & methods utilized by coffee exporting and processing firms in Ethiopia as quality improvement tools (problem solving & continuous improvement), to study the level of implementation of the quality management practice adopted by coffee exporters' in meeting the categorical requirements of the Business Excellence self-assessment model and

organization performance, to assess the moderating effect of the operating environment on the relationship between quality management practices and performance of coffee processing and exporting firms, to establish the mediating effect of organizational capability on the relationship between quality management practices and performance of coffee processing and exporting firms and to find out the possible factors that may influence implementation of quality improvement change in the coffee exporting and processing firms in Ethiopia and also to propose possible solution to improve quality management practice of coffee industry.

The study employed descriptive and explanatory research design, which was cross sectional in nature. Primary data was collected using a structured questionnaire and validated by secondary data. The data were analyzed using descriptive and inferential statistics. Descriptive statistics was used to describe and summarize data. Inferential statistics, particularly Pearson's Product Moment Correlation was used to quantify the strength and direction of the relationship between variables, and regression analysis was used to establish the hypothesized relationship among the study variables.

The findings indicated that most of the respondents were from private firms and cooperative union majority of the firms both processor and exporter (92.7%). This was an indication that the firms had facilities to implement, monitor and sustain quality management practices to improve the quality of products, thus enhancing performance. 58.3 % and 12.5% of the firms uses Sources of coffee bean for export & Industrial process from farms and cooperative member farms helps to implement sustainable standards such as CAFÉ practice, Rain forest Alliance, UTZ, Fair trade, organic coffee, Global Forest Alliance and traceability. Most of the respondents' educational skills 68.78% Degree and secondary Degree 14.58% it indicates lack of specialized skilled power. The indicators of quality management practices, continuous improvement, customer and market focus and top management commitments were traditional on implementation of quality management. This indicated that traditionally, business executives focused on profitability, and operating personal focused on efficiency. There was a clear separation between business and operations, and business fared quite well. But over decade, this separation of responsibility has led under performance.

The first objectives sought to assess the type of coffee quality standard and system adopted by coffee exporting and processing firms. The variable Quality standard & system Focus was measured using indicators comprising Implementation of quality management standard & system whether internal, external, adopted, self-imposed, buyer imposed and/or regulator imposed. The findings reveal that the mean score for the items used to measure quality standard and system was 1.70 and the standard deviation was 0.38. The overall mean score of 1.70 indicated that most of the firms not implemented quality standard and system. If we take the implementation of Kaizen as a quality management standard (mean 2.0 SD 0.0) this indicates all companies not implemented Kaizen except few companies. The quality standard and system adoption significantly affect continuous improvement of firms’.

The second objective of the study to assess the type & degree of utilization of the quality tools ,techniques & methods utilized by coffee exporting and processing firms in Ethiopia as quality improvement tools (problem solving & continuous improvement). The finding indicates that the overall mean score of 2.59 indicates that firms uses rarely quality tools, techniques and methods to improve performance of coffee processing and exporting firms. However, it was noticeable from the results above that respondents frequently use the internal control system to improve quality in the firm, which are scored (mean 1.71, SD 0.86) better than the other quality management tools, techniques and methods. In order to find out the relationship between continuous improvement and performance, the researcher tested the hypothesis on the relationship between the two variables. The findings indicate positive significant relationship between continuous improvement and performance on coffee export processing and export firm in Ethiopia. This implies that firm performance triggers performance.

The third objective of the study to study the level of implementation of the quality management practice adopted by coffee exporters’ in meeting the categorical requirements of the Business Excellence self-assessment model and organization performance. The assessment model helps to know the organization strength, area of improvement, comprehensively measure what is important to your customers and others who receive your product or service, demonstrate continuous improvement against target and results are caused by approaches which helps to assess level of quality management implementation by Malcolm Baldrige National Quality

Award self-assessment model. The finding indicates the overall mean score of 3.87 indicates that firms are moderately good position when asses operation excellence by MBQNA self-assessment model. However, it was noticeable from the results above that respondents agreed customer and market focus ,leadership sub-categories of the assessment We take our customers' opinions and suggestions seriously (mean 4.33, SD 0.68) Senior executives adapt their business strategies to market trends(mean 4.32, SD 5.19) as in good position implementation of quality management. Subsequently, majority of the respondents from leadership, strategic planning, customer and market focus, information analysis, human resource focus, process management and business result assessment tools scored mean 3.43-4.33 and SD 0.77-5.19). The finding showed that Malcolm Baldrige National Quality Award self-assessment model criteria can measure implementation of quality management that influences performance.

The fourth objective was to assess the moderating effect of the operating environment on the relationship between quality management practices and performance of coffee processing and exporting firms in Ethiopia. The findings showed that operating environment moderated the relationship between quality management practices and performance of coffee export processing and export firms in Ethiopia. This implied that operating environment factors directly influence the relationship between quality management practices and performance of coffee export processing and export firms in Ethiopia; hence, the null hypothesis was rejected and the study established that the operating environment is a moderating variable that positively affects the relationship between quality management practices and firm performance in Ethiopia.

The fifth objective was to examine the extent to which organizational capability mediates the relationship between quality management practices and performance of coffee processing and exporting firms in Ethiopia. The findings indicated that organizational capability had a partial mediating effect on the relationship between quality management practices and performance. This implies that if the management can enhance systems integration, empower employees and foster quality culture, then firm's performance can be realized.

The Six objectives was and to find out the possible factors that may influence implementation of quality improvement change in the coffee exporting and processing firms in Ethiopia and also to

propose possible solution to improve quality management practice of coffee industry. The study identifies factors that influence implementation of quality management practice are:

- Organizations ability to meet its stated business goals and objectives. Experience shows that success in achieving business goals and objectives depends heavily on large, complex, cross-functional business processes, such as product planning, product development, invoicing, patient care, purchasing, materials procurement, parts distribution, and the like.
- The process in coffee export processing and export firms lack three principal dimensions of measuring process quality. Effectiveness, efficiency, and adaptability. The process is *effective* if the output meets customer needs. It is *efficient* when it is effective at the least cost. The process is *adaptable* when it remains effective and efficient in the face of the many changes that occur over time. A process orientation is vital if management is to meet customer needs and ensure organizational health (Joseph, Blanton, 1998).
- Existing processing and value-addition technologies and guidelines are decades-old in Ethiopia
- The sector is limited by low quality, inadequate ease-of-business, and disorganized marketing systems and policies.
- Large number of unprofessional exporters and processors
- Limited value-addition (like roasting and grinding)
- Lack of positive attitude for QMS
- Export coffee processing machines works under capacity

5.3 Conclusions

A typical role that can be undertaken by the public or semi-public sector in producing countries like Ethiopia is quality management. Introducing and enforcing sector-wide quality standards creates a level playing field and can help to improve a country's reputation and promote value capture through quality premiums.

Performance is a key focus of the company's management. This study investigated the relationship between quality management practices and firm performance. Based on the findings

of this study, it is reasonable to conclude that quality management practices contributed to the performance of coffee processing and exporting firms in Ethiopia. Based on the findings of the study, the researcher concreted some important conclusions. Continuous improvement found to be statistically significant in influencing the firm's performance; therefore, managers should look for ways of monitoring and sustaining performance through training employees and by ensuring continuous quality audits and system measurements of coffee processing and exporting firms.

Customer and market focus found to be positive and significant. The management of the firms should note that customers are economic assets, and they play a central role in the organization's performance. Today's consumers are highly knowledgeable and demanding. The managers of export coffee processing and exporting firms to succeed in operating requirements of their target customers better than their competitors. This calls firms to be customer-focused, competition-oriented, and ready to utilize the company's scarce resources efficiently. The results suggest that focusing on customers and markets is an important strategy for export coffee processing and exporting firms to consider when improving performance.

The study findings established top management commitment statistically significant. Top management is key in determining how the organization's resources allocated to realize performance. It is the role of the top management to define the vision, mission, and goals that promote quality culture and establish a set of shared values, leading to improved performance.

The findings revealed that organizational capability partially mediated the relationship between quality management practices and performance. This implies that organizational capability plays a role in influencing performance. Therefore, the study concludes employee empowerment, systems integration, and quality culture need to be non-substitutable and incomparable for improved performance.

The results on the moderated effects of operating environment and performance show a positive and statistically significant relationship. The results implied that the operating environment has a moderating effect on the relationship between quality management practices and the performance of export coffee processing and exporting in Ethiopia. The results imply that in a

dynamic business environment, the export coffee processing and exporting firms should continuously scan the operating environment and act proactively to realize performance.

5.4 Contributions to knowledge

The study recommends that managers work at improving the quality of products and services and thus improve performance. This study focused on the relationship between quality management practices and the performance of export coffee processing and exporting firms in Ethiopia. Most prior empirical studies established that quality management practices have a significant relationship on performance. However, it was noted that the focus of those studies was sectors and organizations in developed countries and coffee-producing countries.

Besides, those studies had a couple of critical limitations relating to methodology, context, consistency of results, and conceptualization of research variables and models. Nevertheless, those studies took into account other aspects of quality management systems such as TQM, Just-in-Time (JIT), business process re-engineering (BPR), etc. But the current study contributes to the empirical literature by establishing that quality management practices has a positive influence on the performance of export coffee processing and exporting firms in Ethiopia.

Furthermore, the study adds to the existing body of empirical literature and contributes to the debates on the concern of the management and researchers on the factors that contribute to performance. The current study focuses on the conceptualization of the relationship between quality management practices and performance through the integration of mediating variables, organizational capability, and the moderating variable (operating environment). This integrated research has implications for both practitioners and researchers in the export coffee processing and exporting organizations. Moreover, the three critical factors that are utilized in the current study are a continuous improvement; customer and market focus, and top management commitment whose role is to enhance conceptualization of quality management practices framework.

The current study is unique in contributing to the literature by conducting a research analysis that statistically identifies the best predictors for the successful implementation and maintenance of

quality management practices. The results throw light on the confusion and contradictions which exist in the literature on the value of quality management practices on performance.

The study provides insight into different firms in terms of integrating quality indicators into its traditional economic indicators as a means of assessing the Ethiopian coffee industry's overall competitiveness index. This would be consistent with recent modifications to the concept of international competitiveness as stipulated by the global competitive report of ICO.

Finally, the study gives a model where quality standard, program, and system, Quality management practice (continuous improvement, customer and market focus, and top management commitment) can be looked at as independent variables, organizational capability as mediating variables, operating environment as having a moderating role, and firm performance as the dependent variable, measured through increased productivity, efficiency, employee satisfaction, and firm performance.

5.5 Recommendations

The findings confirmed the conceptual model and recommended several managerial actions. First, continuous improvement as a factor of quality management practices found to be positive and significant in contributing to performance. Therefore, managers of coffee export processing and export firms need to emphasize and invest in continuous improvement to reap the long-term benefits of having quality management practices in place to enhance performance. Operational excellence can be achieved and sustained with the right attitude, the right mindset, and the right competencies.

The managers through internal quality auditors are in a position to increase the value of quality management practice through continuous improvement to improve performance. They should be more focused on a process-based auditing system that seeks to establish the results the organization desire to achieve, determine whether these results take into account the customer needs and other interested parties, and then examine the way processes are managed to achieve the results and improve on performance. The government of Ethiopia should design policies to

ensure that the firms that have adopted QMS receive support during the period Quality management implementation.

Customer and market focus found to positively influence quality management practices and performance of coffee export processing and export firms in Ethiopia. Customer and market focus has been recognized as key to a firm's success and superior performance. The management should ensure that the objectives of the organization are linked to customer needs and expectation because firms depend on their customers and therefore should be keen on understanding current and future customer needs, should seek to meet customer requirements and strive to exceed customer expectations to improve performance.

Top management commitment found to be significant and positively influence the performance of coffee export processing and export firms in Ethiopia. This implies that top management should provide people with the required resources, training, and freedom to act with responsibility and accountability to improve performance. The export processing and export company's shareholders should show that they trust the management of the firms to eliminate fear in the latter and foster commitment so that the management can establish a clear vision for the organization and thus be able to craft strategies to improve performance.

Organizational Capability found to partially mediate the relationship between quality management practices and performance. This implies that in this context of increasingly demanding customers and continuous technological advancement, the management must ensure that the process orientation and system integrations meet the criteria required to change the culture of the organization and to improve on organizational performance. The top management must come up with training policies for employees and management to enhance their capacity, leading to improved quality services and products.

Operating Environment found to moderate the relationship between quality management practices and performance. This implies that in this era of ruthless competition and changing the marketing landscape, the operating environment directly affects the performance of export coffee processing and exporting firms. The government, through the coffee and tea authority, should

ensure that the export coffee processing and exporting firms are operating in the right environment. For export coffee processing and exporting firms to be efficient and effective, they must work closely with the industry regulators such as Ethiopian standard authority Standards to position themselves strategically by developing a better understanding of the operating environment dynamics for superior performance.

This study was a cross-sectional survey. It is hoped that a longitudinal survey will validate informed interpretations in future studies. Future research should further investigate the impacts of quality management practices, organizational capability, and the firm's performance. Further research should also validate the findings and conclusions of the study by undertaking replicate researches in other coffee value chains in Ethiopia.

Besides, further research should be carried out to investigate the moderating role of other variables on the relationship between quality management practices and performance.

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Appendix - A Survey Questionnaire

I am carrying out a research on an empirical study on quality management practice and performance of coffee exporting and processing firm in Ethiopia. You are selected to participate in this survey, and I would appreciate you for answering all the questions. Please answer the following questions as candidly as you can! It takes only 15-20 minutes. Please be assured that the responses you give are for academic purposes only and don't put your name on the questionnaire. No individual answers will be analyzed. Rather, only composite information will be used.

Part One: General profile of Responding Company & Respondents

1. Type of your company based on source of coffee bean/roasted or grounded being exported by your company

1.1 Export coffee bean produced from own farm

1.2 Export coffee bean by purchasing from Ethiopian commodity Exchange

1.3 Export both from own farm & by purchasing from ECX

1.4 Export coffee from vertical integration

1.5 Export coffee by collecting cooperative member farmers

2. . export processing done by yours processing plant or rented

2.1 If the export processing plant yours how many kg/hr it process?.....

2.2 On average how many tons/year do you process?.....

3. Do have industrial coffee processing ? Roasting and Grounding Roasting only

3.1 please specify the capacity per hour

3.2 How many tons on average do you roasted/grounded per year?.....

4. Characteristics of Respondents

- 5.1 Sex: Male Female
- 4.2 Age 18-29 years old 30-39 years old
- 40-49 years old 50 years old and above

- 4.3 Nationality Ethiopian
- Foreigner

4.4 Highest Educational Level:

- A. Below 10 Grades
- B. 10th/12th Complete
- C. College Diploma
- D. First Degree
- E. Master and above

Part Two: Type of Quality Standard & System currently implemented in your company

1. Does your company have a quality management system? Yes <input type="checkbox"/> No <input type="checkbox"/>		
2. Which of the following best describes the quality management system & Standards being implemented by your company (Please mark (√) on the space provided all that best describes your QMS)		
i. Internal <input type="checkbox"/> External <input type="checkbox"/>		
ii. Custom made <input type="checkbox"/> Adopted <input type="checkbox"/>		
iii. Self-imposed <input type="checkbox"/> Buyer imposed <input type="checkbox"/> Regulator imposed <input type="checkbox"/>		
iv. Other (please specify).....		
3.1 If adopted, which of the following private standards system do currently implemented in your company (Please mark (√) all that best describes your company)	3.2 If buyer imposed, which of the following standards currently implemented in your company (Please mark (√) all that best describes your company)	3.3 If Regulator imposed, which of the following legislative standards currently implemented in your company (Please list down the 3 most recently implemented regulatory standard in your company)
3.1.1 ISO 9001:2008 quality management system	3.2.1 Standard set by Buying firm	3.3.1 International standard
3.1.2 ISO 22000:2005 food safety management system	3.2.2 Standard due to Buying firm Contractual requirement	1.

3.1.3 ISO 14001:2005 food safety management system	3.2.3 Supplier code of conduct developed by buying firm	2.
3.1.4 Kiazen		
3.1.5 Six sigma	3.2.4 Any other standard (specify)	3.
3.1.6 HACCP	3.2.5 please specify and rank the 5 most critical requirement set by your current buyers	3.3.2 Continental standard
3.1.7 GLOBAL GAP	1 st	1.
3.1.8 Code of conduct for coffee community /4C/	2 nd	2.
3.1.9 C.A.F.E practice	3 rd	3.
3.1.10 Rainforest Alliance	4 th	3.3.3 Importing country standard
3.1.11 UTZ	5 th	1.
3.1.12 Fair Trade	3.2.6 please specify and rank the 3 most critical requirement set by your lost customer if any	2.
3.1.13 Organic Coffee	1 st	3.
3.1.14 Global Forest Alliance	2 nd	3.3.4 Exporting nation/Ethiopia/ standard
3.1.15 Traceability system	3 rd	1.
3.1.16 Any other private standard (specify)	3.2.7 List down & rank the 3 most requested third party private certification by your customers	2.
3.1.17 Do you hold certification(s) against any private standard list under 3.1.1- 3.1.15 Yes No.....	1 st	3.
	2 nd	3.3.5.Coffee sector industry standard
	3 rd	1.
		2.
		3
		3.3.6 Any other public standard (specify)
3.1.18 If yes to question 3.1.17 list down the type of certification you hold		3.3.7 Do you hold certification(s) or and registration against any public /legislative/ standard list under 3.3.1- 3.3.5 Yes No.....
1.....		
2.....		3.3.8 If yes to question 3.3.7 list down the type of certification-registration you hold
3.....		1.....
		2.....
		3.....

Part Three: Type & Degree of utilization Quality tools, techniques & Methods currently implemented in your company.

Kindly tick (✓) the area which reflects your view from frequently used to not used. These Quality tools or techniques or Methods are currently being used in our organization.

i	Quality tools ,techniques & Methods	Frequently	Some times	Rarely	Not used	Don't know
1	The seven quality tools					
1.1	Process flow chart					
1.2	Pareto diagram					
1.3	Check sheet					
1.4	Histogram					
1.5	Cause and effect diagram					
1.6	Scatter plot					
1.7	Control charts					
1.8	Other tools (specify)					
2	Techniques					
2.1	Bench marking					
2.2	Self-assessment					
2.3	Internal control system					
2.4	Market survey					
2.5	Customer satisfaction survey					
2.6	Other techniques (specify)					
3	Quality methods					
3.1	PDCA (plan, do, check and act)					

i	Quality tools ,techniques & Methods	Frequently	Some times	Rarely	Not used	Don't know
3.2	DMAIC (define, measure, analyze, improve and control)					
3.3	Other (specify)					

PART FOUR : ORGANIZATIONAL CAPABILITY

To what extent do you agree with the following statement with regards to organizational capability in your firm. Please indicate how strongly you agree or disagree with the following statements in your Company. (Tick appropriate: strongly agree=5, Agree=4 Neutral=3, Disagree=2 and strongly Disagree=1)

No	Statement	1	2	3	4	5
1	Quality culture; There is positive quality culture and cooperation within the company					
2	Employees work as a team to realize the company goal					
3	There is culture of co-operation between management and employee					
4	The employees have positive culture change on QMS issues					
5	Employee empowerment The firms involves employees in decision making process					
6	Employees are involved in decision making in all quality matters within the company					
7	Employees are trained on quality management issues when need arises					
8	Process integration; Processes are structured to achieve firms efficiency					

9	The company structures facilitates high performance					
10	Production procedures are efficient for quality products					
11	systems integration; Systems enhances coordination of firms activities and service delivery					
12	The company has good performance management systems leading to employee satisfaction					
13	There is appropriate systems for employee training to enhance performance					

PART FIVE : OPERATING ENVIRONMENT

Please indicate how strongly you agree or disagree with the following statements in relation to operating environment in your Company. ? Please indicate how strongly you agree or disagree with the following statements in your Firms (Tick appropriate: strongly agree=5, Agree=4 Neutral=3, Disagree=2 and strongly Disagree=1)

NO	Statement	1	2	3	4	5
1	Industry regulations Top management responds quickly and effectively to satisfy customer needs as per industry regulations.					
2	Company's products specification is labeled according to legal requirements					
3	The company meets the government regulations and legal requirements of products and services.					
4	Competition: The company uses its opportunities and strengths to be ahead of competition.					
5	The company produces quality products to beat competition.					
6	Market conditions; Company advertises and promotes its products aggressively and timely.					
7	The company products are priced competitively.					
8	There is set time limit to meet the products delivery					

PART SIX: TOP MANAGEMENT COMMITMENT.

To what extent are the following statements accurate or inaccurate on top management commitment in your company? Please indicate how strongly you agree or disagree with the following statements in your Company. (Tick appropriate: strongly agree=1, Agree=2 Neutral=3, Disagree=4 and strongly Disagree=5)

No	Statement for Top Management Commitment	1	2	3	4	5
1	Quality Vision Quality management is embraced in the vision of the company.					
2	Top management reviews organizations QMS at planned intervals to ensure continuity, adequacy and effectiveness.					
3	Employees are motivated towards the organizations goals and objectives					
4	Resource allocation; Top management devotes resources for development and support for Quality management					
5	There is provision of resources for training and freedom to act with responsibility and accountability					
6	Quality policies Quality policies and procedures are documented and communicated to all employees					
7	Quality policies are reviewed regularly to meet the needs of the organization					
8	Quality policies are communicated and understood throughout the company					
9	Quality leadership Management takes leading positions on guiding quality teams					
10	Top management establish trust and commitment to quality improvement by eliminating fear					

No	Statement for Top Management Commitment	1	2	3	4	5
11	The management allows participative and engagement of employees in making decisions on quality issues					
12	Authorities and responsibilities are defined and communicated throughout the firms by management					
13	There is creation and sustenance of shared values and fairness at all levels of the company					

PART SEVEN: FIRMS PERFORMANCE

To what extent do you agree or disagree with the following statement concerning your company's performance? Please indicate how strongly you agree or disagree with the following statements (Tick appropriate: strongly agree=5, Agree=4 Neutral=3, Disagree=2 and strongly Disagree=1)

No	Statement	1	2	3	4	5
1	Employee Satisfaction: The management involve employees on decision making on all quality matters					
2	The company offers employees opportunity for career growth through training and development					
3	There is improved information flow between top management and employees within the company					
4	Effectiveness Employee are well trained on quality matters to enhance efficiency					
5	Company products are delivered to customers on time					
6	There is maximum use of physical facilities					
7	High quality administrative systems are in place to support the efficiency of the firm					
8	Firms performance; Company provides quality products which are pocket friendly to customers					
9	There was less customers complaints					
10	The management ensures products meets customers expectations through feedback					

11	The company has high customer retention and growth					
12	Productivity ; The company has fewer defects and less wastage					
13	There is improved lead time up to delivery					
14	There is high cost reduction after quality management implementation					

Part Eight: What may influence change in implementation of quality improvement in your organization.

Please review the statement (activity) listed below and Kindly tick (√) the area which reflects your view from “No awareness or activity in this area” to “Implementation and Evaluation. Response levels are: (0) No awareness or activity in this area (1) Awareness and discussion (2) Implementation in some areas (3) implementation across the organization (4) Implementation and Evaluation

	Does your organization have?	No awareness or activity in this area(0)	Awareness & discussion (1)	Impleme ntation in some areas (2)	Implementati on across the organization (3)	Implement ation and evaluation (4)
1	Quality improvement as a priority within your organization:					
1.1	Quality improvement is part of organizational strategic direction statements.					
1.2	Education on quality and standards is provided to all staff.					
1.3	Quality and safety policies are in place.					
1.4	Quality improvement processes are in place					
2.	Management support and positive engagement:					
2.1	Senior management or executive are aware and supportive of quality improvement activities.					
2.2	Middle/line management are supportive of quality improvement activities.					
2.3	Quality is part of the routine agenda of all management meetings.					
3	Internal audit and performance review					
3.1	Routine processes are in place for the collection and reporting of internal audit data.					

	Does your organization have?	No awareness or activity in this area(0)	Awareness & discussion (1)	Implementation in some areas (2)	Implementation across the organization (3)	Implementation and evaluation (4)
3.2	There is a multidisciplinary forum for discussion of internal audit and quality standards outcome.					
3.3	Systems of accountability are in place for the implementation of quality improvement recommendations from internal audit.					
3.4	Systems are in place for regular review of performance against standards or benchmarks.					
4	Quality improvement processes:					
4.1	There are appointed staff who are responsible for quality improvement.					
4.2	Accreditation by an appropriate accreditation agency is in place?					

Part Nine: Level of implementation of the *Baldrige National Quality Program Criteria* sub-category by your organization.

Please review the principles listed below (each sub-categories) and circle the response that best describes the **level of implementation** of that sub-category in your organization. Answer the question in reference to the department or division for which you have decision-making authority, or in which you are employed. Response levels are: (1) Not at all, (2) Very Little, (3) Somewhat, (4) Good, and (5) Strong

	Baldrige Categories and Sub-Categories	Not at all	Very Little	Somewhat	Good	Strong	Don't know
	Leadership						
1.1	Senior executives always emphasize the importance of customer orientation						
1.2	Senior executives take our product and service quality seriously						
1.3	Senior executives adapt their business strategies to market trends						
1.4	We always use ethical business practices						
1.5	We anticipate public concerns about our products, services, and operations						

1.6	We participate enthusiastically in social and community services						
1.7	Senior executives take employees' feedback and surveys seriously						
	Strategic planning						
2.1	We have clear strategic objectives for our organization						
2.2	In defining our strategic objectives, we carefully considered various potential factors such as market trends, competitive environment, and our capability						
2.3	We develop realistic short-term and long-term plans and corresponding actions						
2.4	Every employee in our organization is clear about our strategic objective and the action plans to accomplish it						
2.5	Every employee in our organization agrees with and supports our strategic objective and action plans						
2.6	When selecting our suppliers, their capability to meet our quality requirements is the primary consideration						
	Customer and market focus						
3.1	We understand our target customers, customer groups, and market segments well						
3.2	We take our customers' opinions and suggestions seriously						
3.3	We study our customers' requirements and disseminate our customer knowledge in a timely manner						
3.4	We have a well-established communication channel with our customers, allowing customers to seek help and information, or to make a complaint						
3.5	We have an effective customer management system, which solves customer complaints or problems in a timely manner						
3.6	We closely monitor our competitors' actions						
3.7	We are fully aware of market trends						
	Information and analysis						
4.1	We have an effective system to assess our business performance						

4.2	We have a clear appraisal system for every department, unit, and employee						
4.3	All employees understand their performance indicators well and take them seriously						
4.4	We adjust our performance indicators and appraisal systems according to the evolving internal and external business environment						
4.5	Senior executives adjust policy and strategy by analyzing information and facts						
	Human resource focus						
5.1	We empower our employees						
5.2	We have an transparent and effective appraisal system for recognizing and rewarding employees for their efforts						
5.3	We stress teamwork and team spirit						
5.4	Our management motivates employees and fully develops their potential						
5.5	We train our employees in quality concepts, taking care of their needs and developing their competencies						
5.6	We provide training for our employees to improve their competency						
5.7	We provide a safe and healthy work environment						
5.8	We provide special training for employees to serve our customers well						
	Process management						
6.1	When designing business processes, we carefully consider various factors, such as design quality, process cycle time, costs, new technology and productivity						
6.2	Before applying a new production or delivery process, we conduct comprehensive tests to assure its quality						
6.3	We have appropriate management measures to control and improve the production or delivery processes						
6.4	We continuously improve our production or delivery processes, enhancing the overall product and service quality						

6.5	We share our experience in process improvement with other departments or units						
6.6	We improve our business processes to achieve better performance and to keep them up to date with business needs and directions						
6.7	We closely cooperate with our suppliers						
	Business results						
7.1	Customers are satisfied with our products and/or services						
7.2	Our company's profitability is quite good						
7.3	Our remuneration and benefits are quite good						
7.4	Employees are satisfied with the department for which they work						
7.5	Our business has been growing steadily						
7.6	Our product quality has been improving steadily						
7.7	Our productivity has been rising steadily						
7.8	Customer evaluation of our performance has been improving						

Interview Questions

1. Do you have coffee processing plant? if yes how many the processing Capacity/hour?
2. Do you have industrial processing? if yes Roasting & Grounding/ Roasting only how many the capacity per hour?
3. How many years export coffee? average 5 or 10 year export volume and value
4. Do your company have policy and strategy?
5. How do you rate your company organizational capability?
6. How do you evaluate coffee export operating environment?
 - Industry regulations
 - Competition

- Market conditions

7. Do your company have quality management system? if yes

- Internal
- External
- Custom made
- Adopted
- Self-imposed
- Buyer- imposed
- Regulatory-imposed

8. Types of quality standard & system currently implemented

9. Types and degree of utilization quality tools, techniques and methods

10. level of quality management implementation

11 Factors influence quality management Implementation