



ST MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MASTERS OF BUSINESS ADMINISTRATION (GENERAL)

**IMPLEMENTATION OF QMS (ISO 9001-2008) & ITS IMPACT
ON ORGANIZATIONAL PERFORMANCE:-THE CASE OF
AMAGA CHORA GAS & CHEMICAL PRODUCTS FACTORY**

BY

GIRMA NEGEWO GEDA

ID. NO. SGS/0056/2006

**A THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES
OF ST.MARY'S UNIVERSITY IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF
BUSINESS ADMINISTRATION**

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ADDIS ABABA, ETHIOPIA

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**BY
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Dean, Graduate Studies

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DECLARATION

I **Girma Negewo Geda**,do hereby declare that this dissertation is my own original work prepared under the guidance of Dr. Terefe Feyera .All sources of material used for the thesis have been duly acknowledged. I further confirm that this thesis has not been presented and will not be presented to any other University for a similar or any other degree award.

Name

St. Mary's University, Addis Ababa

Signature

January 13, 2018

STATEMENT OF CERTIFICATION

This is to certify that GIRMA NEGEWO has carried out his research work on the topic titled as: “Implementation of ISO 9001-2008QMS and Its Impact on Organizational Performance: in the case of Amaga Chora Gas & Chemicals products Factory.” The work is original in nature and is suitable for submission for the award of Master’s Degree in Business Administration.

Advisor: _____

Signature: _____

Date: _____

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DEDICATION

This Dissertation work is dedicated to my father *Ato Ashebir Abekyelew* and my family who stood behind me.

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List of Abbreviations

AACCSA	Addis Ababa Chamber of Commerce and Sectorial Association
ACGCPF	Amaga Chora Gas and Chemical Products Factory
BPR	Business Process Reengineering
BSC	Balanced Score Card
EPRD	Ethiopian People's Revolutionary Democratic Front
GTP	Growth and Transformation Plan
IMF	International Monetary Fund
ISO	International Organization for Standardization
OP	Organizational Performance
PASDEP	Plan of Action for Sustainable Development and Eradication of Poverty
PDCA	Plan-Do-Check-Action
QM	Quality Management
QMS	Quality Management System
SDPRP	Sustainable Development and Poverty Reduction Program
TQM,	Total Quality Management
UNIDO	United Nation Industrial Development Organization
WB	World Bank

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ABSTRACT

The International Organization for Standardization (ISO) has a mandate to promote the development of international standards helping to facilitate the exchange of goods and services worldwide. Several countries have been adopted the ISO 9000 series as their national standards. This study sought to assesses the extent of ISO 9001:2008QMS implementation and its contribution to the performance of Amaga Chora Gas and Chemical Products Factory (ACGCPF). The study adopted descriptive research method. In the course of analyzing the problems, both qualitative and quantitative research methods was introduced. The main tools of data collection was questionnaires, interviews and review secondary data from both sources .The study involved a total of ninety three respondents. Purposive and simple random sampling methodologies were applied to select respondents. The collected data was analyzed and interpreted by using quantitative and qualitative techniques. Results are explained in the form of narratives, simple tables, graphs and charts. The findings of study imply that, five of the eight QMS principles (Leadership commitment, Customer Focus, Process Approach, System Approach to Management and Mutually beneficial Supplier relationships) assure a little bit above the average aggregate mean result. However; the remaining three QMS principles literally exhibits below average implementation standard. The impact of QMS on the financial performance aspect show similar result. In fact the factory can perform their production processes in a better way than before, however; it has not attain the required level achievements that could be acquired by implementing the system as required by ISO principles. Thus, the management should further search for best ways of mastering quality management system to assure a continuous improvement in all areas.

Keywords: *QMS, ISO 9001:2008, Implementation, Manufacturing Industry, practice, impacts, Challenges.*

CHAPTER ONE

INTRODUCTION

This chapter consists of background of the study, profile of the organization, statement of the problem, general and specific objective of the study, research questions, significance and scope of the study, limitation of the study, organization of the study and definitions of some terminologies.

1.1 Background of the study

In Ethiopia, manufacturing industry began to appear in the 1950's which was much earlier than in many of the Sub-Saharan African countries while modern industries emerge in the second half of the 1950s aiming at substituting imports (FDRE Ministry of Industry, 2013). Since then the sector has not been productive as envisaged. The three governor's ideological difference reflected on their policy has been the major challenge for the sector development. (Mule, 2012), explains the difference on her research on Industrial policy and development in Ethiopia, she summarized the features based on ownership structure and market orientation. It can be characterized as per convictions of the regime; Import substitution and Private Sector-led (from early 1950s to 1974, the Imperial regime); the Import substitution and State-led (from 1974 to 1991, the Dergue regime), and the export-orientated and Private Sector-led (since 1991, the Ethiopian People's Revolutionary Democratic Front, (EPRDF)-led government). Various international organizations including UN agencies has their own concern for this sector. As per United Nation Industrial Development Organization (UNIDO, 2016) research "manufacturing sector in developing countries still meets the conditions to be described as a driver force of economic development, especially to achieve high sustained growth".

By considering the importance, EPRDF has been taken a sequential and step by step measure to enhance the sector productivity. The IMF/WB supported reforms held on three phase (1992 to

1999) was referred as a measure reforms and which was focused on structural and economic reform that encourage the private sectors especially vital for import & export, (Mule, 2012). Industrial Policy and Development in Ethiopia) .Subsequent to the industrial policy launched in 2002/03, other program and plans like; Development and Poverty Reduction Program (SDPRP) 2002/03-2004/05, the Plan of Action for Sustainable Development and Eradication of Poverty (PASDEP) 2005/06-2009/10, and the Growth and Transformation Plan (GTP) 2010/11-2014/15 were launched towards the developments of economic sector including the manufacturing. The recent phenomena, which is a Growth and Transformation Plan (GTP) II from, 2015/16 to 2020 has been considered as the country wide strategic documents which seem a dream, that has been preaching about “accelerated and sustained industrial development” by creating and strengthen export oriented industries. So “Export-orientated” is the main motto of the manufacturing sector. But it is a wish not yet perceptible since there has been serious capacity limitation to assure quality products so far.

According to (Juran, 1995), the 20th century has been the century of production and the 21st century will be the century of quality. (Bergman & Klefsjø, 1994) also describes “Quality then became an increasingly important means of competing on the world market. However; like other developing nations, Ethiopian manufacturing sector is challenged by “Quality” and almost stay locked from the world market so far and it seems remote to achieve in short run. Thus, a collaborative effort has been required by major stakeholders to build the capacity of manufacturing sectors to attain quality in their product. So in addition the stated policy measures stated above, the government has been availed various incentives that are directly upsurge the capacity of the manufacturing sector. Availing tax free access of modern machineries and equipment, provide free land for expansion and new entrants, assuring tax holiday on certain period of profits, facilitating international experience sharing visits are some of the major taken by government.

Companies are also encouraged to adopt modern managements system and adjust themselves towards the culture of modernization on. So recently some manufacturing sectors has been adopted *Result Oriented System*, *Business Process Reengineering (BPR)*, *Quality Management System (QMS)*, *Balanced Score Card (BSC)* and *Kaizen* those are considered as a modern

management system. Among those models, the selected manufacturing company for this research, Amaga Chora Gas and Chemicals Products Factory (ACGCPF) chose the standard Quality Management System which is , ISO 9001-2008 QMS by considering as appropriate management model to improve the factory efficiency and effectiveness since 2011.

1.2 Profile of the Organization

Like other developing countries, the role of Ethiopian manufacturing sector is quite similar and expected to contribute for the betterment of the country export, employment and national output. As per (AACCSA, 2015), the sector accounts for 70% of the industrial sector. So the government has provide various investment incentives measures. ACGCPF is one of the manufacturing sector that has been involved in the production of gas and chemical products. The factory was found in 1945 G.C by the initial capital of 30,000 Schilling (Ethiopian Schilling). Before it took its current name, it had been named as Society Elector Commercial De Ethiopia (SEDE). It was found and managed by Four (4) foreigners and one Ethiopian Citizen with One-handed and Forty five permanent and temporary employee. It is located in the two sub cities Kirkos subcity (worda 12 House Number 143) and Nefassilk Lafto Sub city (Worda 15 House Number 1073), in the out skirt of Addis Ababa. The factory is situated in around 7000m² (4600m² and 2400m² respectively).

Following the Ethiopia Revolution, the factory was nationalized by government in 1975 G.C. and managed by Building and Construction Corporation. After a while it had been under Chemical Corporation and its working capital rose up to Birr 788, 000.00(Seven hundred eighty-eight thousand birr) and the number of employee were increased to 176 (One hundred seventy six). The products were accentuated to chemicals and related products like; Oxygen, Acetylene, Shoe-polish, Floor wax, Nitrogen and Sedex Berkena. Subsequent to the fall of Derge regime on May 1991 G.C., the factory has opened another chapter and re-organized as per proclamation No 25/1984.The proclamation provides more autonomous to the factory management; all operational decisions were decided by organization management whereas any policy related issues were decided by board directors assigned by the government.

On February 2009, the new era of the organization has been ramped up. It is privatized and owned by Amaga plc. Currently the factory has 278 permanent and temporary employees. Subsequent to acquisition, the major objective of the factory management team was to scale it up its performance by replacing old machineries, build staff capacity, update the wage scale and remuneration as per the private industry labor market. Before privatized on February 2009, the government had a plan to adopt quality management system to enhance the performance of the factory. Recruitment of consulting firm, AGB consultant was done and trained some selected employee by Quality standard Authority on January 2009. The government initiative was considered as a good opportunity by the new management and the process had continued shortly with AGB consultant. Quality manuals, Operational procedures and various formats and documentations were fully organized, additional staff was trained and other related issues were finalized until September 2009. Since October 2009 all activities were implemented as per the standard procedures and quality manual. Operations of the factory are categorized based on the following functional departments/ units; General Management, Production and Technic Department, Commercial Department, Administrations Department, Finance Department and Quality Control Service Unit. After twenty months (20) of effort, the organization meet all the required quality standards and acquired its certification on quality management by June 27, 2011.

The Factory has been used raw materials from the local as well as foreign sources. According to the organization management report, products of the factory has been sold in the local markets. Currently the company has several customers which utilized chemicals produced by the company. These includes mediums as well as big capital projects like; Hedase Dam project, big enterprises like Metal and Engineering Corporation (METEC), Government and Private Hospitals and Health Institutions, Bear factories and Bottled Water Production Factories. So it has been contributing its part to the national economy by saving foreign expenditure.

On Social responsibility side, the company execute its social duties by creating job opportunities, providing factory products for free to those deprived patients and collaborating with the nearby Government Administrative Offices for the development of surrounding infrastructures and

involved in other activities for the benefits of neighboring communities as well. The company has determined its mission, vision and values which clearly shows the direction of company.

1.3 Statement of the Problem

The International Organization for Standardization (ISO) has a portfolio of over 21,000 standards, of which the ISO 9000 series relating to quality management is the best known. Within this series, ISO 9001 QMS– Requirements is widely used by organizations around the world to demonstrate that they have a clearly defined and well managed set of processes that enable them to consistently provide products and services meeting customer and applicable statutory and regulatory requirements, (UNIDO, 2016).

In Ethiopia QMS is a recent phenomenon caused by influences from both internal and external environments of the manufacturing sectors. It has been proved by recent studies that most of this sector has been managed traditionally by their owners or relatives who are a bit far from the modern management thinking. The recent research of (Beshah and Kitaw, 2014) by citing the analyses of the EQA self-assessment report, concluded that “ quality management practices in Ethiopia was found to be low in all the tenets which includes leadership, policy and strategy, resources management, process management, customer satisfaction, business performance and impact on society”. (Rajul & Yesanew, 2016) has strengthen this fact and summarized as follows; “Ethiopian manufacturing organizations are demanded to improve their products quality in order to improve their competitiveness and verify the current strategy of the government to export their products abroad”.

Though, by considering all efforts undertaken by the government towards improving quality to ascertain the on and off development of the economy in a sustainable way. However; the actual result so far witnessed, “Assuring Quality” is a government daydream that is enshrined in the policy document only. The research of (Raj & Yeshanew, 2016), showed this fact that “Small number of firms which are ISO 9000 certified in the country”. Thus, from this few , ACGCPF is

one of the manufacturing companies that has been respond the call and replaced its traditional management system by the standard QMS called ISO 9001:2008QMS since July 2011.

Having decided to drop the traditional system is the first step that revealed the management commitment however; a timely and continuous evaluation on the system must be part of the commitment to assure the desired change. If not, the merits and demerits of the system cannot be objectively identified and measured so that weakness and strength may not be addressed accordingly. This is the common problem in most manufacturing sectors in country. Since its certification in 2011, the factory doesn't conduct any formal evaluation or research to evaluate how ISO 9001:2008QMS has been implemented and its contribution towards the factory performances. So, this research was designed to address this problem by examine to what extent Amaga Chora Gas and Chemical Products Factory apply ISO 9001:2008 QMS and assess its contribution towards the performance of the organization since day one of its implementation.

1.4 Objective of the study

The objectives of the study are stated in two levels, general and specific objectives.

1.4.1; General objective

The general objective of this study was to assess the proper implementation of standards of ISO 9001:2008QMS and its impacts on Performance of the Factory for the period covered (2011 up to 2016).

1.4.2 Specific Objectives

The specific objectives of this study were:-

- To assess the implementation of ISO9001:2008QMS as per the eight ISO9001-2008 principles.
- To measure the impact of ISO 9001:2008QMS towards profitability of the company.
- To assess role of ISO certification towards economic benefits as well helping to discharging its social responsibility

1.5 Research questions

An effective Quality Management System focuses on developing and communicating a customer-focused mission, strategies and action plans; listening and responding to the customers' needs and expectations; empowering employees to continuously improve and increase their satisfaction with their work processes and environment, Daniel Amare (2010). So this study was conducted with the aim of providing answers to the following basic research questions to evaluate the *IMPLEMENTATION OF QMS (ISO9001-2008) AND ITS IMPACT ON ORGANIZATIONAL PERFORMANCE*:

1. To what extent ACGCPF implements the QMS system as per ISO 9001:2008 standards?
2. To what extent the implementation of QMS enhance the profitability of the company.
3. Does ISO certification by itself help the company to:-
 - Acquire benefits because of increasing credibility?
 - Discharge its social responsibility to meet the standard?

1.6 Significance of the Study

The study was examine the implementation ISO 9001:2008QMS and its effect on the performance of the company. Thus, it would have the following significance:-

1. To help the management to identify the status and impact of ISO 9001:2008QMS in their organization and alarm them to take appropriate actions based on findings.
2. To add inputs by showing the actual practice on the ground and draw the lesson to companies particularly for those chemical and gas producers to work on their gaps.
3. To contribute its own part by providing additional experience in the manufacturing sector of Ethiopia.

1.7 Scope of the study

This study was delimited to examine the implementation of ISO9001:2008QMS and its impact on OP of ACGCPF based on the operations that have been conducted under the following six (6) major departments/units; *General Management, Production and Technic Department, Commercial Department, Administrations Department, Finance Department and Quality Control Service Unit* those are vital for implementing QMS. The assessment period also limited to five years (2011 up to 2016) since the implantation of the QMS. However; for comparative financial analysis purpose, additional two years and five months data was included to account performance results before ISO QMS implementation.

For addressing the extent of implementation status, the study was limited on the following main variables; *Leadership Commitment; Customer Focus; Involvement of people; Process approach; System approach to management; Continual improvement; Factual approach to decision making and mutually beneficial supplier relationship*. Could help to measure the level of practicality. The measuring impact of ISO on profitability, only adopt *Cost model* from other four models.

1.8 Limitation of the study

This study was conducted based on seven years and five month data. (2011 up to 2016). This is because, the factory was privatized on February 2009 and ISO 9001:2008 QMS has been applied after two years and five months later, in July 2011. So for evaluating the financial performance on profitability, the operations period before ISO implementation was a bit shorter comparing with the subsequent five years after ISO implementation. So this may affect to the quantity of data applicable for evaluating comparative analysis of measuring financial impact.

1.9 Organization of the Study

The research paper is comprised of five chapters. Chapter one is the introductory part that covers the background of the study, statement of problem, basic research questions, objective, significance and scope of the study. Chapter two is review of related literature on the concepts of ISO 9001:2008QMS and its impact of organization performance. Chapter three deal about the

research design and methodology, it focuses on the research perspectives, population, sampling, research instruments, data collection, and data analysis. Chapter four is presentation of data and analysis of results, findings and discussions. And finally, chapter five is the summary of major findings, conclusion, recommendation and implication of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This paper explores the implementation ISO 9001:2008 QMS and its impact on organizational performance focusing on ACGCPF. So, literatures under this chapter are designed to review the research questions raised in the first chapter. Basically literatures are compiled and summarized from various sources to get wider outlook about QMS. However; the following were the main sources ; academic journals, academic papers , proceedings, manuals, books about the philosophy of ISO QMS & TQM, industry reports, trade publications, regulatory and certification agencies reports.

2.1 Quality

When we are referring about quality, it is indispensable to acknowledge the noble works of the well-known scholars in the 20th century. (Crosby, 1979), (Deming, 1986), (Feigenbaum, 1991), (Ishikawa, 1985), (Juran, 1974), and (Shewhart, 1986), since their role in advancing quality are remarkable. Until recently there is no universally accepted definition of quality exists, however; there is enough similarity that exist among the definitions. An early definition for quality was presented by (Juran, 1974), he defined quality as “fitness for use”. His definition originates mainly from customer’s perspective. Griffin (1988) defines quality as the “totality of features and characteristics of products or services that bear on the ability to satisfy stated or implied needs”. Garvin (1987) comprehend quality as a multidimensional concept having eight dimensions, which include: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. The early researchers like (Juran, 1974), as well as the recent once, Hoyle (2007) looking on quality is quite similar, they are looking “quality” from the perspective of customers. Thus, the customer perspective with respect to quality is the key concept that should be understood while determining any term for quality.

2.2 QMS and ISO

2.2.1 Quality Management System (QMS)

Quality Management system (QMS) is, a set of interconnected processes designed and executed for the purpose of meeting customer requirements (Juran, 1974). As per (Basak, 2014) conclusion, QMS is a set of guiding principles and management style that has been adopted by managers in their organizations to improve competitiveness and organizational performance. According to (Zink, 1998), quality management is one of the approaches of management, which focuses on quality based on every stakeholder's participation, it aims at long-term success. As per (ISO, 2008) definition, QMS, is a collection of business processes focused on consistently meeting customer requirements and enhancing their satisfaction. It is expressed as the organizational goals and aspirations, policies, standard system processes, documented information and resources needed to implement and maintain it.

2.2.2 The International Organization for Standardization (ISO)

ISO was founded in 1946 in Geneva, Switzerland, where it still is based. Its mandate is to promote the development of international Standards to facilitate the exchange of goods and services worldwide. Several countries have been adopted the ISO 9000 series as their national standards and thousands of organizations throughout the world have quality systems registered to the standard (David & Stanley, 2003). ISO, since its official establishment, it is the world largest developer of international standards and has been developed management and leadership standards for business, government and community, ranging from environmental management to business applications of risk and quality management. (ISO 2016)

2.3 Evolution of ISO QMS

ISO 9000 is a series, or family of standards. ISO 9001 is a standard within the family. The ISO 9000 family of standards also contains an individual standard named ISO 9000. As per (ISO 2016), the ISO standard is continually being revised by standing technical committees and advisory groups, who receive feedback from those professionals who are implementing the

standards. ISO standards are updated every 5 years. The following are the five different versions of ISO 9001 which have been published by ISO until today:-

The 1987 version (ISO 9000:1987)

The initial 1987 version (ISO 9000:1987) had the same structure as the UK Standard BS 5750, with three ‘models’ for quality management systems, the selection of which was based on the scope of activities of the organization. The language of this first version of the standard was influenced by existing US and other Defense Military Standards, so it was more accessible to manufacturing and was well suited to the demands of a rigorous, stable, factory-floor manufacturing process. With its structure of twenty ‘elements’ or requirements, the emphasis tended to be overly placed on conformity with procedures rather than the overall process of management; which was the original intent.

The 1994 version (ISO 9000:1994)

The 1994 version (ISO 9000:1994) was an attempt which emphasized quality assurance via preventive actions and continued to require evidence of compliance with documented procedures. Unfortunately, as with the first edition, companies tended to implement its requirements by creating shelf-loads of procedure manuals and become burdened with ISO bureaucracy. Adapting and improving processes could be particularly difficult in such environment.

The 2000 version – (ISO 9001:2000)

The 2000 version of the standard sought to make a radical change in thinking. It placed the concept of process management at the heart of the standard, making it clear that the essential goals of the standard which had always been about “a documented system” not a “system of documents” were reinforced. The goal was always to have management system effectiveness via process performance measures. Expectations of continual process improvement and tracking customer satisfaction were also made explicit in this revision. The following were the set of eight core quality management principles designed to act as a common foundation for all standards relating to quality management: Improved consistency with traceability, Enhanced customer

focus, Focused leadership, The involvement of people, A system approach to management, Continual improvement, A factual approach to decision making and Mutually beneficial supplier relationships.

The 2008 version (ISO 9001: 2008)

The fourth edition of the standard (ISO 9001:2008) arrived on November 14th 2008. This revision contains minor amendments only. The aim of this revision is to clarify existing requirements and to improve consistency of approach with other management standards, like ISO 14001:2015.

The 2015 Version (ISO 9001:2015)

The most current version of the standard is ISO 9001:2015, completed and released towards the end of 2015. The new version updated the format of the document to a high-level structure, soon all management system standards will adhere to this structure. The update also included some revised terminology to make the document more generic. The entire document is now focused around the idea of risk-based thinking; making risk management a central feature of the standard. An emphasis on leadership and increased flexibility regarding documentation are other notable changes in the 2015 revision.

2.4 ISO 9001: 2008 QMS

This research is applicable based on the principle of ISO9001:2008QMS, hence additional thoughts are required about this specific standard for better understanding. ISO 9001:2008 QMS has been applicable since November 2008 and has not been made a radical change in thinking like the 2000 version. Only it amends and clarifies the existing requirements to improve consistency of management standards, (ISO, 2008).

2.4.1 ISO9001:2008 QMS Clauses

The ISO 9001 series of standards is generic in scope. The series can be tailored to fit any organization's need whether it is large or small, a manufacturing or service organizations (ISO 2008) The ISO 9001:2008 has 8 clauses of requirements:-

Clause 1–Scope

Clause 2–Normative References

Clause 3–Terms and Definitions

Clause 4_ Quality Management System Requirements

Clause 5_Management Responsibility

Clause 6_Resource Management

Clause 7–Product Realization

Clause 8–Measurement, Analysis and Improvement

Clauses 1 to 3 are for information only which discuss Scope, Normative References and Terms and Definitions. Clauses 4 to 8 of ISO 9001:2008 describe the requirements.

Clause 4 indicates the general requirement for the quality management system. It requires organizations to establish, document, implement and maintain a quality management system and continually improve its effectiveness. Moreover, it requires organizations to have documented statements of a quality policy and quality objectives, a quality manual, documented procedures and records of some processes to ensure the effective planning, operation and control of processes.

While Clause 5, describes requirements on “Management Responsibility”. It requires top management to provide evidence of their commitment to the development and implementation of the quality management system and to continual improvement of its effectiveness. Top management should make sure that customer requirements are determined and met to increase customer satisfaction. Top management is also responsible for the quality policy. Moreover, top management should make sure that measurable quality objectives are defined at relevant functions and levels within the organization. Furthermore, top management should ensure that

responsibilities and authorities are determined and communicated. Finally, top management should review the quality management system at planned intervals.

Clause 6 states requirements on Resource Management. It requires organizations to identify and provide resources to implement and sustain the quality management system and continually improve its effectiveness, and to increase customer satisfaction.

Clause 7 describes requirements on Product Realization. It requires organizations to plan and develop the processes needed for product realization. Organizations should identify and review requirements related to the product. Organizations should also identify and implement effective arrangements for communicating with customers. They should plan and control the design and development of products. Moreover, organizations should make sure that purchased products conform to purchase requirements. Organizations should evaluate suppliers and select suppliers based on these evaluations. Finally, organizations should monitor and measure equipment that is used to measure the conformity of product.

However Clause 8 lists requirements on Measurement, Analysis and Improvement. Organizations should measure customer satisfaction, quality management system processes, and characteristics of the product to make sure that product requirement have been met. Organizations should conduct internal audits at planned intervals. Organizations should make sure that nonconforming products are identified and controlled, and not delivered to customers. Organizations should determine, collect and analyze appropriate data to identify improvement opportunities. Finally, organizations should continually improve the effectiveness of the quality management system.

Like other business, manufacturers have been struggling with quality management since the early age of production by taking challenges as opportunity to advent the new way of thinking. So various management principles and standards so far has been the result of the vicious circle of challenge – research – result and then challenge comes again.

2.4.2 ISO9001:2008QMS and Continuous Improvement

ISO 9001:2008 promotes the adoption of a process approach when developing, implementing and improving the effectiveness of a quality management system, to meet customer requirements and enhance customer satisfaction. A “process” can be defined as a “set of interrelated or interacting activities, which transforms inputs into outputs”. “Process approach” is the “application of a system of processes within an organization, together with the identification and interactions of these processes, and their management to produce the desired outcome”, (ISO, 2008).

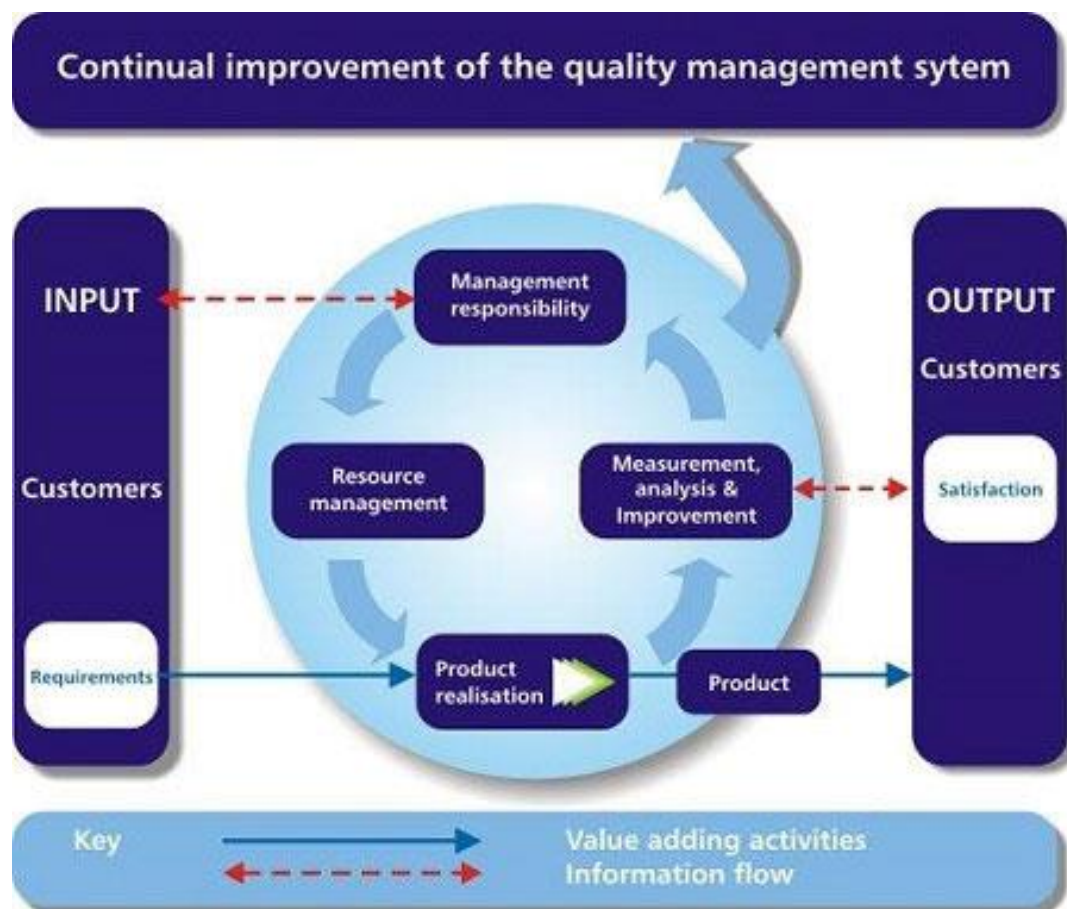


Figure 2.1. The Model of Process Based Quality Management System (Source ISO Mar 2008)

Implementing ISO9000 helps organizations to manage their processes with quality. Without quality system, organizations cannot achieve a world-class standard of quality. The structure of ISO9001 reflects Plan-Do-Check-Action of Deming cycle. The PDCA concept can be applied to all kinds of processes from simple operational activities to high level strategic processes (ISO, 2008).

PDCA methodology (ISO 2008)

- a) Plan -Establish the objectives and processes necessary to deliver results in accordance with customer requirements and the organization's policies.
- b) Do -Implement the processes.
- c) Check -Monitor and measure processes and product against policies, objectives & requirements for the product and report the results.
- d) Act -Take actions to continually improve process performance.

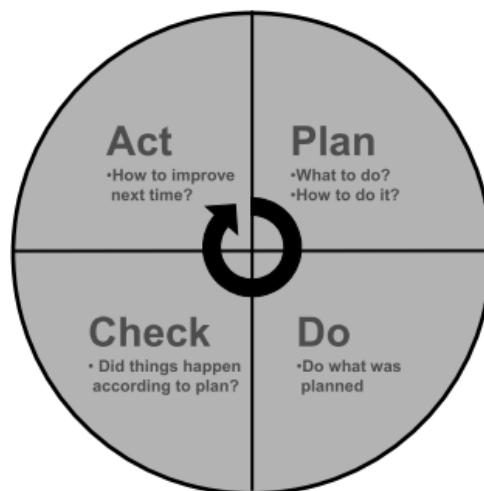


Figure 2.2: Plan-Do-Check-Act Cycle
Source: (ISO 9001:2008 Standard)

2.5 The Drivers of ISO Certification

The drivers for ISO 9001 certification and the specific benefits expected from this standard system may not be necessarily one and the same to all businesses. It may vary from one company to the other and from one country to another because of the nature of organizations as well as the

country situation they are implementing. However; all are agreed that motives are coming from internal, external or from both corners. According to (Fonseca, Domingues, Machado & Calderón, 2017) also cited (Tari, Azorín & Heras, 2012) research and state that; internal motivations to implement ISO 9001 can foster organizational and process improvements and may contribute to better quality and increase customer satisfaction, these in turn contributing to better financial performance and competitive position.

On the other end, the importance of external motives are summarized by the same authors by referring (Liopis & Tari, 2003) ; (Boiral & Roy, 2007); (Costa, Lorente & Choi,2008); (Prajogo, 2011); research studies, and concluded that external motivation can improve the access to markets, satisfy customer requirements, enhance the organization image and facilitate the access to governmental incentives. However; if the change disregard the internal motive and apply the system it is just to do the minimum to achieve certification, the external benefits might not endure. As per the research of (Svetoslav & Georgiev , 2015), about motivational factors for the adoption of ISO 900 standards in Eastern Europe in the case of Bulgaria, their findings revealed that, enhanced company image and competitiveness were considered as external motives whereas and process improvement and product quality improvement are internal motives for acquiring ISO 9001 certification.

(Lourenço, Fonseca & Mendes, 2012) also precisely explained and tabulated the summary of common motivations and benefits that most organization has been implementing ISO 9001 QMS. They summarized the motives and benefits of ISO QMS certification after reviewing various researches like; (Douglas, Coleman, & Oddy, 2003); (Magd and Curry, 2003); (Williams, 2004); (Poksinska, Jörn, & Eklund, 2004); (Calisir, Kulak & Dogan,2005); (Casadesus and Karapetrovic, 2005); (Saizarbitoria, 2006); (Larson and Kerr,2007); (Sampaio, Saraiva, & Rodrigues ,2009) and (Rawahi and Bashir, 2011).

Table2. 1: Common motivations and benefits of ISO 9001 certification

EXTERNAL MOTIVATIONS	INTERNAL MOTIVATIONS
• Improve the image of the company	• Initiating of TQM
• Use as a marketing tool	• Improve product and / or service quality
• Pressures from competitors / strategic partners / customers	• Improve the efficiency of the QMS
• Maintain / increase market share	• Increase competitive advantages
• Meet the legal requirements	• Improve productivity
• Meet customer requirements	

EXTERNAL BENEFITS	INTERNAL BENEFITS
• Access to new markets	• Improved productivity
• Improved company image	• Reduction for defective Products
• Improved Market Share	• Improved Quality awareness
• Improved relationship and communication with the client	• Definition of staff responsibilities and obligations
• Customer satisfaction	• Improved in delivery times
	• Improved internal organization (Clarity of work procedures and documentation systems)
	• Reduction of non-conformities
	• Decrease in customer complaints
	• Improved internal communication
	• Improved product quality
	• Improved competitive advantage
	• Motivation of staff

Source: (Lourenço, Fonseca & Mendes, (2012)

As per other local research conducted by (Daniel, 2010), studied on “The impact of ISO certification on Quality Management Practices in EFFORT Corporations in Ethiopia”, he

concluded that, the main drivers for the decision to go for ISO implementation and certification were improving the organizations public image.

The ISO justification of why firms apply and certify for this standard are more or less similar to the justifications stated by the above researchers. According to ISO (International Organization for Standardization), the following are ten benefits from certification of ISO 9001:2008(ISO, 2014):-

- ❖ Help improve the quality of goods and services
- ❖ Help drive growth, cut costs and increase profits
- ❖ Give business a competitive edge
- ❖ Open up export markets for goods and services
- ❖ Open doors to new customers and strengthen existing business
- ❖ Help to compete with bigger enterprises
- ❖ Enhance credibility and secure customer confidence
- ❖ Sharpen business processes and increase efficiency
- ❖ Strengthen marketing pitch
- ❖ Help comply with regulations

2.6 ISO9001 QMS and Organization Performance

Various researches showed conflicting results about the performance benefits of ISO 9001. A large body of literature reported positive effects of ISO 9001 on their studies, (Benner and Veloso, 2008); Corbett and Kirsch, 2005; Levine and Toffel, 2010; Naveh and Marcus, 2005 are the main advocator of positive results. However; some studies reported that ISO 9001 has no significant impact on performance (Singles, Ruel, and Waterm, 2001); (Terziovski, Samson and Dow, 1997).In other words, others still reported a negative relationship between ISO 9001 and organization performance (Yeung & G. Mok, 2015).

2.6.1 ISO 9001 QMS and Operational Performance (OP)

ISO 9001QMS helps the organizations to standardize workflows and improve coordination between different functions. It promotes documentation that clearly defines work instructions

and job responsibilities, it helps to set clear quality objectives and encourages fact based and data driven decision-making, promotes employee learning and development, increases the dissemination of knowledge among employees and their commitment to quality and help to decrease process variation, scrap and rework (ISO, 2012).

Many researches proved that a company operating within the requirements of the ISO 9001 standards should achieve customer satisfaction as the interactions with customers are improved and reductions of customer complaints. So the standards are supposed to have a positive influence on the operations of the organization by increasing technical flexibility, improvement of co-ordination of activities, improvement of product or service specifications. (Terziovski, et.al 1997) defines, operational performance is a measure that is related with an organization's internal operations, such as productivity, product quality and customer satisfaction. According to (Jang and Lin, 2008), efficient and effective management systems would able to create better quality products and services, assure cost reasonableness , minimize defects rates and enhance customer satisfaction by applying the concept of continuous improvement.

(Singels, et.al, 2001), showed the relationship between ISO standards and performance achievements as follows; “When employees work according to the procedures that are described in the ISO 9000 series, they are able to identify sources of problems in the production process. This enhances the purpose of the ISO 9000 series procedures which are meant to guarantee that the products or services an organization offers are in accordance with customer specifications. With better operational performance, the products or services the organization offers should become more attractive to customers and the firm should have better business performance, so sales and profitability should increase”.

(Naveh & Marcus, 2005), also strengthen the above idea based on the research conducted in manufacturing firms “With in house, standardized and replicable routines and procedures for product design, manufacture, delivery results , less rework, less scrap and fewer wasted materials can be assured . Less rework and higher productivity should result in lower expenses, which would translate into higher gross profit margins. With lower defect rates and on-time delivery, sales should grow because new markets are created and customer retention is high.”

2.6.2 ISO 9001 QMS and Financial Performance

The impact of ISO QMS on financial performance has been a potential source of debate. A study conducted by (Wiele, Dale, & Williams, 2000) justified that there is no clear relationship between having ISO 9000 series certificate and the financial performance of an organization. This is mainly due to the reason that ISO 9000 focuses only on how organizations reduce their costs through minimizing the inspection time, detecting the quality problem early at the production level and the time spent for call backs. On the other hand, (Sharma, 2005) has provided the evidence that ISO 9000 certification is associated with improvements in financial performance. His finding revealed that, ISO 9000 certification does bring benefits to the firm and its stakeholders. Profit margin, growth in sales, and earnings per share are among the significant improvements observed as a result of ISO 9000 certification. However; the impact of ISO 9000 certification was greater on profit margin than on growth in sales which suggests that the improvement of performance is largely attributed to improvements in internal business processes.

(Pinar, 2001) added that the ISO 9000 had the most immediate and substantial impact on productivity/efficiency, profitability and cost factors. This might suggest that those were the main factors influencing the belief or perceptions of the firms regarding ISO 9000 success. (Corbett, 2002) supplemented that firms that had decided to seek ISO 9000 maintained their ROA, while the non-certified firms saw their performance decline over time. Moreover, (Capistrano, 2008) obtained that majority of ISO 9000 certified firms experience less fluctuation in their financial ratios after certification and most firms showed improvements in their leverage ratio. But, the author identified that the financial ratios that are perceived to supposedly have more direct impact due to certification –operating efficiency and asset use efficiency.

Similarly, (Wu and Liu, 2010) also identified that ISO certification has significantly affected the financial perspective of the company performance of profitability. Their result also showed that ISO certification had a significant impact on improving customer satisfaction. In general, ISO certified companies have more access to new markets and can control the existing markets which in turn can improve their financial performance. These improvements could be described the rate of change in profit or profit improvement.

2.7 Empirical Literature

Starting from the 1987 version of ISO until this issue of year 2008, the actual influence of ISO, 9001 QMS and organization has been in the state of haziness. Various studies have been conducted to find out the impact of ISO certification on the performance of companies. Accordingly, this research summarized a blend of various studies based on world context & industry mix as follows:-

2.7.1 The Global Influence of ISO 9001 QMS and its Impact

(Manders, 2015) research, which was the first on its kind at the time it examines the relationship between ISO 9001 and a company's business performance by means of meta-analysis to find the true effects of certification. The study was conducted a meta-analysis to investigate the global impact of ISO 9001 and to show how the performance benefits differ across national boundaries. The analysis examines more than 1000 studies on ISO 9001 and uses 53 studies from different countries involving over 11,000 firms. The finding in general indicated that ISO 9001QMS positively affects operational and market performance globally. The analysis also shows that national culture and economic development of a country affect the relative benefits of ISO 9001. This research investigates the global benefits of ISO 9001 and how national culture and economic development affect the relevant benefits of this standard. The finding reveals some of the following key results;-

- ❖ First, the result shows that ISO 9001 benefits both operational and market performance across various countries. However; the analysis also reveals that companies in some countries benefit more from ISO 9001. This provides support for the idea that national differences affect the performance benefits of ISO 9001, specifically the level of economic development and national culture affect the performance benefits of ISO 9001.

- ❖ Second, the analysis showed that level of economic development has a significantly negative effect on operational performance and no effect on market performance. This confirms that implementing ISO 9001 leads to more operational improvements in companies located in developing countries; as a result, they experience higher operational benefits.

- ❖ Third, Performance Orientation (PO) culture also has a positive effect on operational performance. This suggests that when the national culture emphasizes taking initiatives, achieving results, knowledge, development and feedback, companies gain more operational benefits.

2.7.2 ISO9001 QMS & its Impact on Various Industries in Different Countries

(Al-abedallat, 2012) had conducted empirically study on 22 Commercial banks in Jordan. The target population for this study was employees in the banking sector. A sample of the study consisted of 600 employees; who were selected randomly to examine the extent to which QMPs and Organizational Performance was correlated and how QMPs impacts on organizational performance. The framework was developed to examine the effects of the six QMPs on Organizational performance. The findings suggest that a positive relationship exists between the QM practices and organizational performance specifically QMS with quality management dimensions (leadership, strategic planning, customer focus, and employee relation).

(Magd, 2006) evaluated the results from a survey on ISO 9000 certified manufacturing companies in Saudi Arabia .An empirical survey was conducted on 175 certified manufacturing firms in Saudi Arabia. This study was focused on the benefits achieved from ISO 9000 implementation, level of satisfaction with the standard, the anticipated steps after ISO 9000 implementation, factors influencing the choice of registration agencies and the associated problems with registration agencies. Due to the high level of interest in the area of quality most customers request a certificate to prove existence of quality products/services, certified firms in Saudi Arabia had performed well comparing to non-certified once. This indicates how much the attitude of customer's influence the companies be or not to be certified.

(Alolayan, 2014) had conducted an assessment on quality management system on 204 certified work organizations in Kuwait on his thesis of Doctor of philosophy. This research was one of its kinds conducted in Kuwait, particularly in the area of assessment for the ISO 9001 quality management systems adopted by five various business types (manufacturing, services, construction, trading, and education).Of which, the highest certification rate (38%) was manufacturing sector. As per the finding, the motives for seeking ISO 9001 certifications for the

five business sectors were not different. The scale measure of motives had shown the same regardless of its being .Similar to other researches, the motives was two types, external and internal. The outcome was scientifically justified using the appropriate statistical tool and it was reasonable to say that most work organizations find the business and image improvements, meeting customer demands, to improve the organization's marketing strategy to attract new customers and keep the old ones is a good reason for obtaining an ISO 9001 certificate. The outcome was no differences. Thus, it can be said that ISO 9001 was a belief that must exist within the work organizations to help them initially improve their business Performances.

(Fonseca, et.al, 2017) cited the research of (Jang & Lin, 2007) to justify the positive impact of ISO 9001QMS. The research was empirically examined whether the business can benefit from ISO 9000, and further examined how motivation impacts the depth of ISO 9000 implementation and how the depth of ISO 9000 implementation impacts a firm's performance in Taiwan. A survey questionnaire was mailed to the 1,668 companies with ISO 9000 certification, and a total of 441 usable responses were returned. Using a structural equation model, this study empirically examines the relationship between ISO 9000 motivation and ISO 9000 implementation depth and how implementation depth influences firm performance. The results demonstrate that a positive relationship exists between the extent to which companies implement ISO 9000 and firm performance. Furthermore, the implementation of ISO 9000 directly and positively influences operational performance and indirectly affects market performance, in turn positively impacting business performance.

Contrary to the above findings, regardless of the type and size of businesses the organizations are running, some researches verify that there is no association between ISO 9001 implementation and its performance improvements. (Alolayan, 2014) had referred the following author's (Terziovski, et.al, 1997), (Curkovic and Hadfield, 1996), (Batchelor, 1992), (Allan, 1993) and (Brown, 1994) on his literature review showing the relationship between ISO 9000 implementation and organizational performance are weak.

According to (Costa and Lorente, 2003) some organizations have reached a level of frustration and disappointment since positive outcomes from applying the ISO quality system were not

significantly noticed. The reason for that is, most probably due to the fact that most studies done on ISO 9001 QMS were not done empirically and were mostly case studies, which were descriptive, or prescriptive.

This literature ,therefore, believed that all relevant views are include to get enough ideas about the impact of ISO certification on organizations performance based on various perspectives.

2.8 Conceptual Framework of the Research

The following conceptual framework is adopted and the diagram describes the relationship among variables of interest based on ISO9001:2008QMS. The independent variables in this study was Leadership commitment, Customer Focus, Involvement of People, Process Approach, System Approach, Continual Improvement, Factual Approach to Decision Making and Mutually Beneficial Supplier Relationship on ISO 9001:2008 and the dependent variables was Operational Performance and Financial Performances. Operational Performance was explained by; improved internal organization (Clarity of work procedures and documentation systems, Stocks are on optimal level), reduction of customer complaints, well trained and motivated staffs are onboard, and high Productivity. All results were measured as per the intensity of implementation of the eight principles of ISO.

Financial Performance was explained by profit, which was the residual effect of all transaction in the factory. Quality-based measure, Time-based measure, Flexibility based measure and Cost-based measure are the know performance measures in production. For this research, in order to measure the impact of ISO 9001:2008QMS on the finical performance cost model was chosen.

ISO 9001:2008QMS and Organization Performance

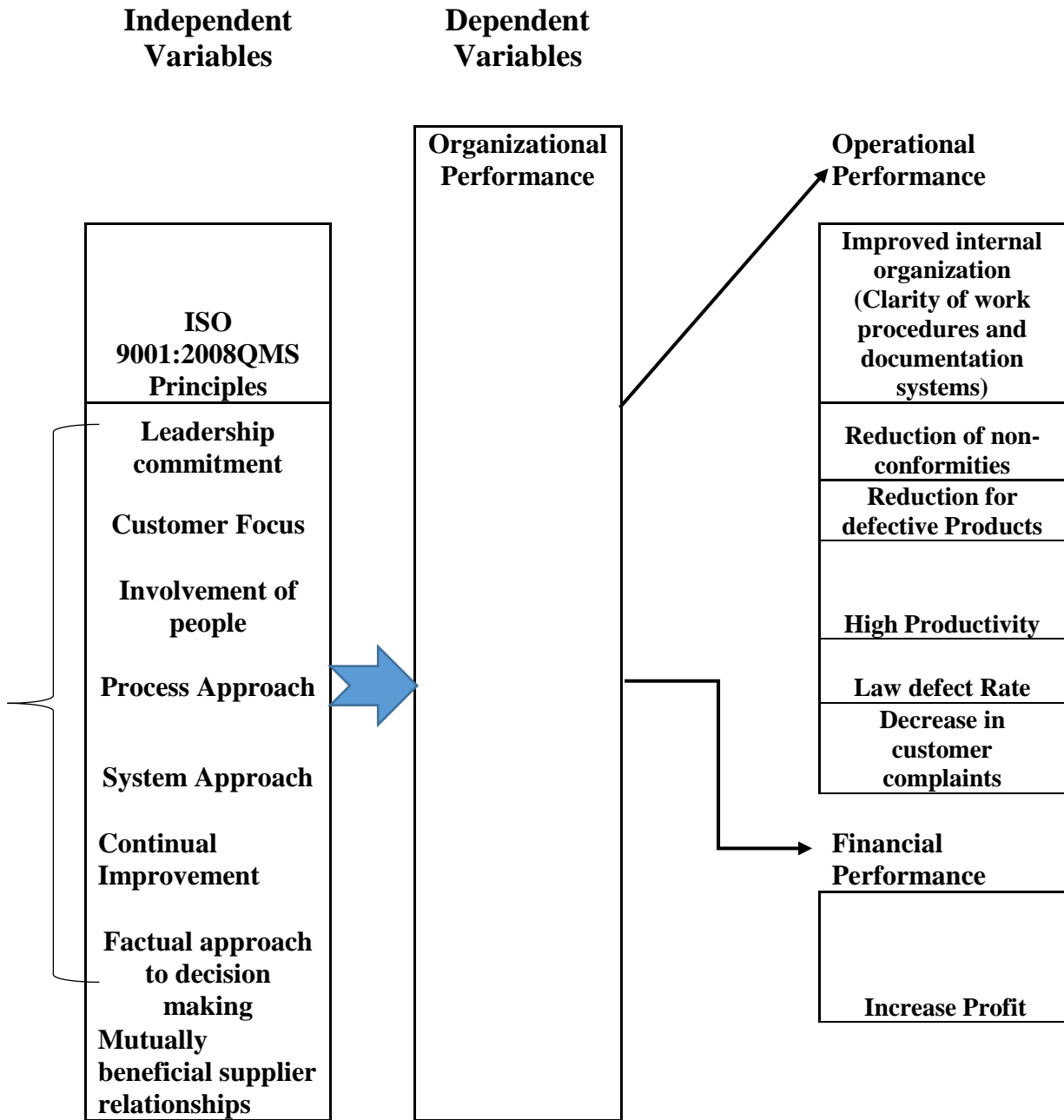


Figure 2.2: The Conceptual Framework of the Study

Source: (Researcher)

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

The aim of the study was to evaluate the extent to which the application of ISO 9001:2008 QMS and its impact on organization performance. With this respect, the researcher was assess how much the organization consistently implement ISO 9001:2008QMS standards and measure the impact on the organization financial as well as non-financial performances. To this end, this chapter formulate and show the path how to find the result in a systematic way by articulating the research design, identify specific target population, adopting sample size determination procedure/s to assure the reliability and validity of the research instruments as well as the techniques that was applicable in data analysis.

3.1 Research Design and Approach

A research design is a set of advance decisions that make up the master plan specifying the methods and procedures for collecting and analyzing the needed information. It is a "blueprint" for research, it addresses at least four of the problems; what questions to study, which data are relevant, what data to collect, and how to analyze the results (Jackson, 2009). So the approach is a way of dealing with dealing with methods, procedures, techniques and systems to reach the final objective. With those methods, procedures, techniques and systems to reach the final objective.

3.1.1 Research Design

To address the research question, this study adopted Descriptive Research Methods since the research objective was to search what was going on and its effect on performance. As per (Smith and Albaum, 2010), the main objective of descriptive research is describing the state of affairs as it prevails at the time of study. Applying descriptive research consists of surveys and fact-finding. This method was an ideal way of probing what was going on from the response of respondents. In the course of analyzing the problems, both qualitative and quantitative research methods was introduced in addition both primary and secondary data was utilized. The main tools of data collection was questionnaires, interviews and review secondary data from

documents. Specially for measuring the financial performance of the organization, data was gathered from the organization audited and unaudited financial reports, performance reports and other written documents was assessed to complement the primary data.

3.1.2 Research Approach

Conducting in-depth assessment for both the extent of implementation and its impact of ISO 9001:2008 QMS, both qualitative as well as quantitative data was required. Therefore, the research approach would inquire the mixing of both qualitative and quantitative approaches which is called a mixed method of research approach. So the data was meant to collect and analyze in both quantitative and qualitative ways and the result is presented as a single output. The central intent of the research approach is that use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone.

3.2 Population of the study (Target Population)

Amaga Chora Gas and Chemical Products Factory currently has 276 employee. Among those only 200 employees are permanent and could be considered as a population for this research. For the purpose of primary data collection the whole processes or departments of the organization will be assessed. From the total population, only part of the employee are selected as a sample based on the procedure of sample size determination with target population is known or finite.

Table 3.1: Target Population

S/N	Department and Sections	Permanent Employee		Total Population
		Female	Male	
1	General Management	2	2	4
2	Production and Technique Department	9	71	80
3	Commerce (Sales ,Marketing , Procurement , Store Management)	19	40	59
4	Administrations Department	10	30	40
5	Finance Department	11	2	13
6	Quality Service Section	3	1	4
Total Population		54	146	200

Source: (ACGCPF: Human Resource Report at 31 October 2017)

3.3. Sampling Technique and Sampling Size

(Kothari, 2004) define a sample as part of the target population that has been procedurally selected to represent it .Sampling is the process of systematically selecting representative elements of a population.

3.3.1 Sampling Technique

The study employed purposive and probability sampling techniques. Purposive sampling was applicable to select the key informant in the organization since in purposive sampling, subjects was selected because of some characteristic. So, the General Manger, Production and Technique Department Manager, Finance Department Manager, Administration Department Manager, Commerce Department Manager and Quality Service Manager (Top Level Management) were purposively selected to a member of sample group since they are a process owners at each

department. (Patton, 1990) has proposed that among other cases, purposive sampling can be appropriate where there's maximum variation in responses and it serves to identify important common patterns that cut across variations. For the remaining staff, stratified sampling technique was applied based on functional categories so, 36(40%) Production and Technique, 26 (29.5%) Commerce Department 18(20%) Administrations Department, 6 (6.5%) Finance Department, 2 (2%) Quality Service and 2(2%) General Manager Office. Under the stratified sampling, simple random sampling was applied to identify each sample from the strata. This sampling procedure was chosen because of its nature of accommodating both key personnel and other knowledgeable respondents.

3.3.2 Sample Size Determination

Since the population under study is considered to be finite, the following formula is employed to calculate the sample size (Kothari, 2004):

$$\frac{Z^2}{e^2} \frac{(P)*q*N}{(N-1) + Z^2*p*q}$$

Where:

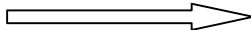
Z=Z value (e.g. 1.96 for 95% confidence level)

q=1-p

p =percentage picking a choice, expressed as decimal (p=50%)

c= confidence interval (margin of error) expressed as decimal(c=.05)

$$\frac{1.96^2 * 0.5 * 0.5}{(0.05)^2} \frac{0.5 * 0.5 * 200}{(200-1) + 1.96^2 * 0.5 * 0.5}$$

=96.05  96

So the total sample size for this study was be 96 individuals which include 6 management team and 90 participants.

Table 3.2: Sampling Technique and Sample Size of the Study (Both Survey and Interview)

S/N	Title (Position)	Sample Size	Sampling Design
1	General Manager	1	Purposive
2	Production and Technique Department Manager	1	Purposive
3	Commerce Department Manager	1	Purposive
4	Administrations Department Manager	1	Purposive
5	Finance Department Manager	1	Purposive
6	Quality Service Manager	1	Purposive
7	The remaining staff in the above six functions	90	Stratified Sampling
Total Sample		96	

Source: Researcher computation based on collected data

3.4. Types of Data

The type of data and its collection method has been chosen depending on various factors. Type of research questions, budget availability and time required was some of the reason to limit the type of data and the way of gathering them. Data are classified in to two main types, primary and secondary data. Primary data is first-hand information that is collected by those conducting the assessment. Primary data would include original information gathered through surveillance activities, focus groups, interview and observations. Secondary data is the data that have been already collected by and readily available from other sources .Secondary data are more quickly obtainable than the primary data from various sources ; like printed reports, publications,

journals...etc. According to the importance and the availability, this research was apply both primary and secondary data.

3. 5 Method of Data Collection

In order to gather the data from relevant sources the following methods were applied. To learn what employee think about ISO 9001:2008QMS and its impact on the organization, this research applied a surveys method of data collection; so questioners and interview were the main tools to collect primary data. The secondary data were readily available from the other sources, so there was no specific collection methods. For this research, secondary data was collected from internal sources like, Financial Statements, Audit Reports and other Periodic Reports prepared by the organization. External sources like Journals, Government Reports and other related Business Reports were referred to supplement the primary data findings.

3.5.1 Questionnaire

The questionnaire was the primary data collection instrument which is a self-administered questionnaire designed by the researcher as per the context of the study. The questionnaire had two parts. The first section assesses the demographic and social background characteristics of the respondents. The second part of questionnaires was closed ended, and utilized a five point likert scale which had to assigned scores of between 1 and 5, namely Strongly Agree (5), Agree (4), Neutral (3), Disagreed (2) and Strongly Disagree (1) this allowed the researcher to draw conclusions based on comparisons made from the responses. The questionnaire was distributed to all employees in each department. First, orientation was given to the respondents about the objective and importance of the study and on how to complete the questionnaire then, the questionnaire was distributed to all employees in each department by principal investigator. As per pilot testing the questioner was filled within 25 to 35 minutes. Practically more ground time was invested working with technical workers in the factory.

3.5.2 Interview

The interview was conducted with Top Level Management members who are a process owners at each department. The interview questions were a structured kind questions. Interview was conducted by the principal investigator of this study in their respective office as per the pre planned schedule.

3.6 Reliability and Validity of Data

3.6.1 Reliability of Data

According to (Saunders, Lewis, and Thornhill, 2003), reliability is refers to the extent to which the data collection techniques or analysis procedures will yield consistent findings. It is a measure of degree to which a research instrument yields consistent results or data after repeated trials. To this end Piloting was conducted. The purpose of piloting both questioners and the interview questions was that could help the researcher to get feedback nearest to the actual practice in which how respondents respond questions. This information was then used to refine the questionnaire or interviewing process. Before piloting the questionnaire, the questioner was sent to the researcher advisor for evaluation to assure relevance, objectivity and effectiveness of the tool. As a pre-test measure, the questionnaire was distributed to four staff and one manager who has been working in the shoe manufacturing sector. The results of piloting was helping to include additional explanation for some questioners.

3.6.2 Validity of Data

According to (Saunders, 2003), validity is concerned with whether the findings are really about what they appear to be about. It is the accuracy and meaningfulness of inferences, which are based on the research results. Since the respondents were participated in voluntarily basis, questioners had no ambiguity, language applicable for the questionnaire ware readily available in both English and Amharic language to avoid language barriers and almost 50% of the total population were directly participated in the study (from top level management and the employee) can increase the credibility of the information gathered. So all the above stated factors help to conclude that the research results were valid.

3.7 Method of Data Analysis

The data was screened to ensure that responses were legible and understandable. The responses were within an acceptable range and complete. So the collected data was analyzed and interpreted by using both quantitative and qualitative techniques. The quantitative part of the responses from questionnaires was coded and entered into the STATA-Version 11 Statistical data analysis program. Simple tables and graphs was used to analyze and present the data.

The following method was adopted to describe the relationship among variables of interest based on ISO9001:2008QMS. To assess the extent of implementing ISO QMS, variables were created as a dependent and independent and indicators of the result also identified. So the independent variables in this study was the eight ISO 9001:2008 QMS principles; *Leadership commitment, Customer Focus, Involvement of People, Process Approach, System Approach, Continual Improvement, Factual Approach to Decision Making and Mutually Beneficial Supplier Relationship* on ISO 9001:2008 and the dependent variables was *Operational Performance and Financial Performances*. The Operational Performance was explained by; improved internal organization (Clarity of work procedures and documentation systems, Stocks are on optimal level), reduction of customer complaints, well trained and motivated staffs are onboard, and high Productivity. Financial Performance was explained by profit, since profit is the residual effect of all transaction in the factory.

As per (Anh and Matsui, (nd)), performance measure in production could be listed as; Quality-based measure, Time-based measure: Cost- based measure and Flexibility based measure. For this research, in order to measure the impact of ISO 9001:2008QMS on the finical performance, cost model was chosen. The model was adopted in line with the work of (Dejne, 2011) on his master's thesis on measuring the performance of five Ethiopian Brewery Companies. The model was originally developed from the work of Naser et al. (2004) and the work of Levine and Toffel (2008).

Accordingly, the research applies cost model specified is the following:

$$\ln\text{PROFIT}_t = \ln\text{SALES}_t + \text{COST}_t + \text{ISO}_t + \varepsilon_{it} = \mu_i + v_t$$

Where, PROFIT was the company's profit which is used as a measure of its performance. SALES represent the average annual sales amount and COST denotes average cost of production. ISO was a dummy variable taking a value of one after the factory become ISO certified and a value of zero was before ISO certified. The subscript t refers to time, ϵ_t was the error term " \ln " was the natural logarithm of the variables. Natural logarithm was preferred to the levels in order to reduce the influence of outliers and to compensate for the difference in scale of measurement.

3.8 Ethical Considerations

To ensure that the study complied with the ethical issues pertaining research undertaking, for first and most, the organization was willing to conduct this research. A full disclosure of all the activities concerning the study were explained to the authorities. The following ethical consideration can be referred regarding ethical issues:-

Voluntarily: Respondents had participated on voluntarily. Participants also have had the right to exit from the process at any time.

Not doing harm and benefits: Respondents not faced any harm or getting direct benefit by participating in this study. However, they may benefit from the findings.

Confidentiality: Respondents information is confidential and only use for this research purpose. Only the researcher has access to the data. Respondents did not also write their names and identifications in the questionnaires. A high level of confidentiality and privacy was observed and the findings of the study will only submitted to the St. Mary University and the organization.

CHAPTER FOUR

RESULTAND DISCUSSION

The objective of this chapter is to present findings and discussion on the results. It has been structured as follows: 4.1 present demographic characteristics of respondents; 4.2 deals about data analysis and provides discussion of the results.

4.1. Respondents' Demographics

Demographic characteristics include: Educational Background, Work Experience and Current Position of the respondent's. Such a description was considered to be very important in providing a better understanding of the respondents included in the study and therefore it provides a good foundation for a detailed discussion of the results. .These result was analyzed and summarized using frequencies and percentages.

4.1.1 Rate of Respondents

A total of 96 copies of the questionnaire were distributed, out of which 93 (96.88%) were properly filled-in and returned successfully. This implies that the findings of the study covered the maximum proportion of above 95% of the respondents.

Table 4.1: Frequency of Composition of Respondents

S.N	Item	Category	Count	%
1	Composition of respondents	General Management	2	2%
		Production & Technique Department	38	41%
		Commercial Department (Sales ,Marketing, Procurement & Warehouse)	27	29%
		Administrations Department	18	19%
		Finance Department	6	6%
		Quality Control Service Division	2	2%
Total			93	100%

Source: Researcher computation based on collected data

4.1.2 Professional Composition of Respondents

As per table 4.1, the respondents were grouped as per functional categories. General Management which is 2%, Production & Technique Department which 41%, Commercial Department 29%, Administrations Department 19%, Finance Department 6% and Quality Control Service Division 2% were representative respondents. From each function, heads of each representative of Top Level Management was selected. So the composition was from both management and other staff members having various responsibilities in quality management system. The number as well as the composition was fair enough to evaluate the implementation of QMS from various perspectives.

Table 4. 2: Frequency of Educational level of Respondents

S.N	Variables	Type	Count	%	
1	Educational Level	Second Degree	1	1%	
		First Degree	37	40%	
		Diploma Holders	39	42%	
		Less than Diploma	16	17%	
Total			93	100%	

Source: Researcher computation based on collected data

4.1.3 Educational Level of Respondents

The respondents were asked to indicate their highest level of education they had achieved. Table 4.2 showed that 1(1%) of the respondents has a second degree, 37(40%) of them are first degree holders, 39(42%) are diploma holders and the remaining 16 (17 %) of them are certificate holders. In general, 83% employee are educated which is from diploma to master's degree. Basically, educated employees are quick to receive new ideas and incorporate them with changes as well. The employee composition the factory showed on the table 4.2 showed that, the highest number of employees are diploma holders. The interview result indicates that the reason behind employing more middle level staffs are, they are capable of handling their

technical roles and at the same time being paid a lower remuneration compared to those in the same rank who have degrees qualifications.

Table 4.3: Frequency of Experience of Respondents

S.N	Variables	Type	Count	%
1	Service Year	Greater than Ten Years	25	27%
		Five to Ten Years	23	25%
		Less than Five Years	45	48%
Total			93	100%

Source: Researcher computation based on collected data

4.1.4 Experience of Respondents

As far as their service years was concerned, as showed on table 4.3 above, 27% of them have been serving for more than ten (10) years, 25% of respondents have been serving between five (5) to ten (10) years and 48% of respondents have been serving for less than five (5) years in the organization. In aggregated a total of 52% of respondents have been serving the organization for more than five years and above, which is considerably a long period enough to provide significant information about the implementation of ISO9001-2008QMS in the organization.

4.2 Discussion of the Findings

The main purpose of this study is to evaluate the implementation of ISO 9001:2008QMS and its contribution to the performance of the organization. To find out the actual result, appropriate questionnaire was designed and distributed to all participant and interview questions was prepared to top level management. Questionnaires were administered and interview was conducted by the principal investigator. The secondary data was also analyzed to supplement the finding results based on primary data. Therefore, findings were organized in such a way that it responds research questions and addresses the specific objectives too. Mainly the extent of QMS implementation was assessed based on the twenty eight (28) Questionnaires under the eight

principles of ISO 9001:2008QMS. The other there (3) questionnaires for evaluating the contribution of ISO certification to discharging its social responsibility as well as adding any positive impact on the factory financial performance. Finally the result of questionnaires were triangulated with the interview responses and secondary data outcomes to get more accurate finding.

4.2.1 Level of Implementation of ISO9001:2008QMS

These findings were directly related with the first research question which dealt with the extent to which the organization has been implementing the QMS system as per ISO 9001:2008 standard requirements. To analyze the task how in-depth those principles has been implemented, a questionnaire having a set of 28 questions were distributed to 96 participants. Participants' responses to the questions were rated based on a mechanism of Likert scale of 1 to 5 which ranges from strongly disagree to strongly agree. Strongly agree and agree were considered as "Agree" and strongly disagree and disagree were considered as "Disagree". Results were drawn from those frequencies. The percentage result which equal or greater than 50 % shows acceptance on the level of implementation. The aggregate mean that valued 3.5 and above show the same. However; any result less than the above was showing weak performance of implementation.

Table 4.4: Frequency of Implementation of Leadership Commitment

No	Leadership Commitment	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	Top Level Executives are actively involved in establishing and communicating the organization Mission, Vision, Values and Goals to the organization employee to internalize the quality objective of the Factory.	Count	60.00	12.00	21.00	93.00	3.54
		%	65%	13%	23%	100%	
2	Top Management allocates adequate Human, Financial and Material Resources to assure quality at all time.	Count	76.00	9.00	8.00	93.00	4.00
		%	82%	10%	9%	100%	
3	I have trust and confidence in our Management team so I just follow them as a role model.	Count	34.00	27.00	32.00	93.00	3.01
		%	37%	29%	34%	100%	
4	Senior Executives insist on accuracy and reliability of all information and communications with in the organization.	Count	52.00	26.00	15.00	93.00	3.49
		%	56%	28%	16%	100%	
5	The door of Top Level Executives always open to entertain any comments or suggestions from internal or external customers.	Count	55.00	12.00	26.00	93.00	3.33
		%	59%	13%	28%	100%	
6	Senior Executives insist on accuracy and reliability of all information and communications with in the organization.	Count	61.00	18.00	14.00	93.00	3.68
		%	66%	19%	15%	100%	
Aggregate Mean		Count	56	17	19	93	3.51
Aggregate Percentage		%	61%	19%	21%	100%	

Source: Researcher computation based on collected data

The above table 4.4, it deals with the respondents' rate how *Leadership Commitment* has been practically implemented in the factory set up. As revealed on the table, the result showed that in aggregate 61% respondents agreed on the commitment of leadership was high. A total of 21% respondents categorize leadership commitment below their expectation and the remaining 19% of the respondent were indifferent. The aggregate mean 3.51 expressed the same.

During the interview, the researcher had identified that top level managers were almost tied on their line responsibilities by paying higher attention on result. Most of their time was allotted on the usual duties rather than thinking beyond the border as a leader. Usually major change was mainly expected from the corporate management team of Amaga Plc. Quality Gurus like Deming, Juran and Crosby mentioned that top management commitment is one of the most important factors impacting on the success of a QMS in an organization. Though, the findings showed that commitment of leaders are a bit higher than average however; was not obtained very good or excellent results as expected from this pillar management as if it has pivotal role for all other QMS principles.

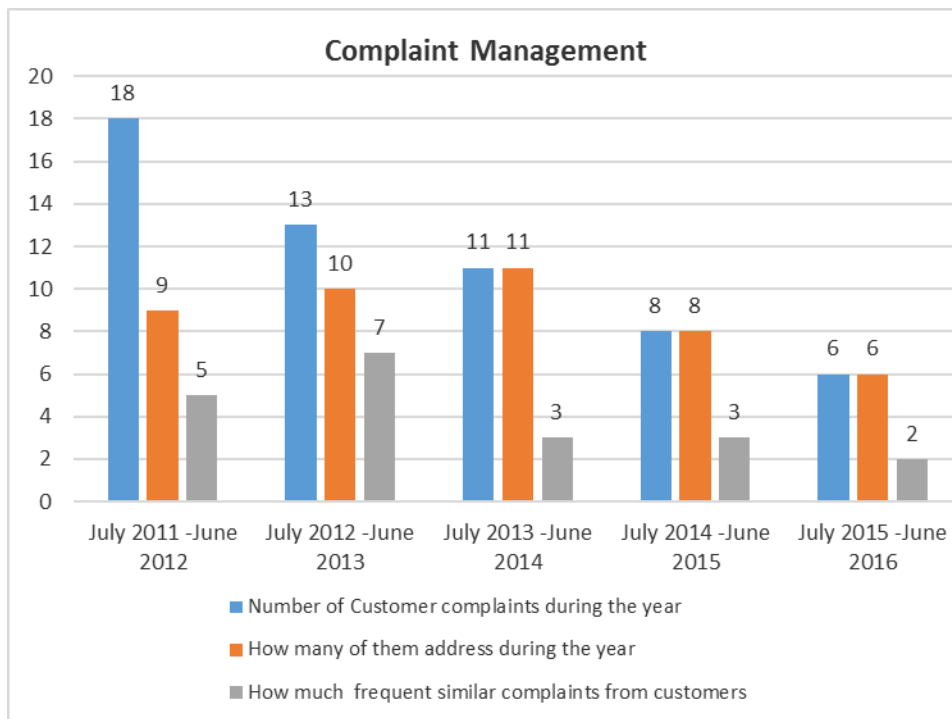
Table 4.5: Frequency of implementation of Customer Focus

No	Customer Focus	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	Since implementing ISO 9001:2008QMS, the factory is able to provide standard quality products as per the customer's needs and requirements.	Count	72.00	12.00	9.00	93.00	3.88
		%	77%	13%	10%	100%	
2	The factory has enough communication channel to assure both way communication with its customers. The following are common ways; Suggestion boxes, Website, email address ...etc. So the factory use most of the stated channels consistently to address the problems.	Count	36.00	27.00	30.00	93.00	3.09
		%	39%	29%	32%	100%	
3	The factory has been implementing ISO-9001:2008QMS for the last five years since Fy'2011. Now all basic customer needs requirements are identified and implemented accordingly.	Count	75.00	14.00	4.00	93.00	3.89
		%	81%	15%	4%	100%	
4	The factory has a standard compliance handling and resolution format and procedure to handle customer's complaints. This procedure is consistently applicable whatever the problem may be.	Count	42.00	32.00	19.00	93.00	3.40
		%	45%	34%	20%	100%	
5	The factory has a mechanism measuring customer satisfaction on a regular basis.	Count	39.00	36.00	18.00	93.00	3.26
		%	42%	39%	19%	100%	
Aggregate Mean		Count	56	17	19	93	3.51

Source: Researcher computation based on collected data

Customer focus should be the major principle for any customer oriented system, because the organizations are dependent on their customers. Organizations should therefore understand the customer’s current and future needs and also fulfill their requirements and strive to exceed their expectations, (Hoyle, 2007). Respondents had rated how much their organization focusing on their customer. On aggregate 56 out of 93 respondents agreed that the organization is customer focused. 17 respondent were indifferent, 19 agreed that the standard of customer handling is below the required level. The aggregate mean which is 3.51 demonstrate the acceptance of the applicability of the principle.

Graph 4.1: Frequency of measuring customer complaint and its Management



Source: Researcher computation based on collected data

It is the customer who decides which product or service offered represent the highest value. If anything deviates from expectation, complaints are expected. Graph 4.1 depicts the number of complaints appeared and how much of them were resolved since QMS implementation.

Complaints had been declined year to year and minimized three (3) times from the beginning in five years' time. Complaint resolution ability also attain to 100% within three years. The trend of similar compliant in the same fiscal year also decreased but not eliminated.

The factory has organized customers complaints management system. All incidents are record chronologically and addressed accordingly. On the document review process, the researcher observed that most of the complaints were initiated from suppliers shop. Almost all of the issues were not because of the quality rather because of customers store management system, like lack of proper warehouse management. But wherever the complaint may raise, the focal point is the factory. During the interview, the researcher had found that the way of collecting feedback from their loyal customer is not modern, mostly informal and it is difficult to trace the date for further investigation. Formal meetings with their customers had been conducted on yearly basis. The way of recognition of their loyal customer was not precisely known rather arbitrarily conducted. However; based on questioner results, document review and feedback from interview, the result can be concluded that, implementation of ISO QMS has a positive contribution to increase the factory external customer satisfaction.

Table 4.6: Frequency of implementation of Involvement of People

No	Involvement of People	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	The factory always sensitize employees to aware how their activities and attitudes influence product quality.	Count	33.00	31.00	29.00	93.00	2.98
		%	35%	33%	31%	100%	
2	The Factory has a transparent and effective performance appraisal system helping employee to know their limitation and strong parts for improvement and rewarding employees respectively.	Count	32.00	32.00	29.00	93.00	2.91
		%	34%	34%	31%	100%	
3	The Factory has an environment or a forum to its employee to discuss their challenges or sharing their knowledge and experiences.	Count	14.00	29.00	50.00	93.00	2.40
		%	15%	31%	54%	100%	
4	The factory employees are always aware of relevant decision and actions taken by the organization.	Count	28.00	33.00	32.00	93.00	2.83
		%	30%	35%	34%	100%	
Aggregate Mean		Count	27	31	35	93	2.78

Source: Researcher computation based on collected data

People at all levels must have the essence of ownership. Some of the benefits of involvement of staff in any organization are increase motivation of employee, have better commitment, enhance creativity of staff during a challenging atmosphere. Better involvement of people help to furthering the organization's objectives and People being accountable for their own performance and eager to participate in and contribute to continual improvement, (ISO, 2008). The result of participant rating on this particular requirement is a bit lower from all other requirements. On the aggregate less than average respondents which was 27 of 93 agreed on the level of involvement of people. 31respondants which was 33 % are indifferent, 35 respondents which equals to 38%, agreed that the system does not allow involvement of people required by ISO standard.

The interview result also support this fact, there was limited instance that the employee was involved on planning ,very limited or had no formal access of relevant decision and actions taken by the organization. The mean result also show the weakness of this variable. The aggregate mean result of 2.87 demonstrate the implementation of this particular principle was below the required level.

Table 4.7: Frequency of Implementation of Process Approach

No	Process Approach	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	The Factory QMS is instrumental for standardizing all applicable documents helping to maintain process approach in the factory.	Count	55.00	26.00	12.00	93.00	3.54
		%	59%	28%	13%	100%	
2	The QMS of the factory focusing of the factors, like resources, methods and materials that improve the key activities of the organization rather than end result.	Count	59.00	26.00	8.00	93.00	3.63
		%	63%	28%	9%	100%	
3	A documented procedure is implemented to ensure product quality, from procurement to final delivery at all time and all time.	Count	49.00	30.00	14.00	93.00	3.49
		%	53%	32%	15%	100%	
4	The factory process management system is flexible for corrections and changes.	Count	63.00	20.00	10.00	93.00	3.72
		%	68%	22%	11%	100%	
Aggregate Mean		Count	57	26	11	93	3.59
Aggregate percentage		%	61%	27%	12%	100%	

Source: Researcher computation based on collected data

A desired result is achieved more efficiently when activities and related resources are managed as a process. This is because; lower costs and shorter cycle times through effective use of resources have improved consistent and predictable results, (ISO 2008). On this aspect, 61% respondents agreed that the organization had a standard process oriented system, 27% of the respondent was indifferent, whereas 12% was still disagreed on the standard process approach systems. Table 4.7 revealed this fact. Among all ISO standards, more respondent agreed that the factory has properly implemented these principles.

Table 4.8: Frequency of Implementation of System Approach to Management

No	System Approach to Management	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	The factory QMS provide better understanding of the roles and responsibilities necessary for achieving common objectives and thereby reducing cross – functional barriers.	Count	53.00	32.00	8.00	93.00	3.56
		%	57%	34%	9%	100%	
2	The Factory has all required Quality Policy, Quality Manuals and Quality Objective, controlled documents. It is always applicable to assure the standard system.	Count	59.00	32.00	2.00	93.00	3.79
		%	63%	34%	2%	100%	
3	The factory Internal ISO Audit Committee discharge its responsibility on time and in a transparent way.	Count	55.00	30.00	8.00	93.00	3.51
		%	59%	32%	9%	100%	
Aggregate Mean		Count	56	31	6	93	3.62
Aggregate percentage		%	60%	34%	6%	100%	

Source: Researcher computation based on collected data

The applicability of system approach shown on table 4.8 shows that 60% respondents agreed that the organization has the standard system guided by its own quality policy, quality objective, controlled documents, and has internal ISO audit committee that can able to discharging its responsibility on time and in transparent manner. The system also provides better understanding of the roles and responsibilities of each process holder essential for achieving common objectives in the organization. 33% of the respondent was indifferent and very small which was 7% disagree on the standard system approach to management. During document review process conducted by the researcher it is proved that all required documents and policies are in place.

Table 4.9: Frequency of implementation of Continuous Improvement

No	Continuous Improvement	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	The factory use the popular PDCA (Plan, Do, Check & Act) cycle for process control and improvement.	Count	53.00	28.00	12.00	93.00	3.55
		%	57%	30%	13%	100%	
2	The Factory allocate enough budget for research and development to maintain the current and to improve quality of the product continually.	Count	35.00	46.00	12.00	93.00	3.22
		%	38%	49%	13%	100%	
3	The major objective of a continuous evaluation and assessment is for betterment of the system rather than critics and punish employee.	Count	39.00	29.00	25.00	93.00	3.13
		%	42%	31%	27%	100%	
Aggregate Mean		Count	42	34	16	93	3.30
Aggregate percentage		%	46%	37%	18%	100%	

Source: Researcher computation based on collected data

The response showed that the aggregate of 42 respondents which is less than 50 % are believed the organization is continuously improved in all aspects. 34(37%) respondent are indifferent but 16(18%) respondents disagree on the applicability of continuous improvement. The aggregate mean is also less than the acceptable range, which was 3.30. Continuous improvement is the heart of ISO QMS principle so any challenge on the other principles, directly affect this principle too. Thus, change must be holistic to assure a continuous improvement. During the review of secondary data, the researcher found that customer complaints are decline year to year, process are going as per the predetermined specification, control document are there. However; involvement of people and focus on employee (internal customers) had a bit below

the required measurement level and has a higher possibility to hinder for assuring continues improvement throughout the QMS.

Table 4.10: Frequency of Implementation of Factual Approach to Decision Making

No	Factual Approach to Decision Making	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	The factory has reliable data base system helping all decision makers to decide as per the factual data getting from the system. So Always decision are made based on factual analysis.	Count	40.00	36.00	17.00	93.00	3.37
		%	43%	39%	18%	100%	

Source: Researcher computation based on collected data

As per the survey result shown on the above table, 43% respondents agreed that any decision was made based on facts. 39% of the respondent are indifferent and the remaining 18% disagree. The mean value showed this fact, which is less than acceptable level 3.37. There was two instances that the researcher observed that decisions were made based on factual data. Resolving of customers complaint were fully supported by factual documents and decision related with human resource issues were also backed by full legal back ground documentation.

Table 4.11: Frequency of Implementation of Mutually Beneficial Supplier Relationship

No	Mutually Beneficial Supplier Relationship	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	The Factory QMS has provide sound control over suppliers to assure its product quality as well as price at the end.	Count	52.00	31.00	10.00	93.00	3.53
		%	56%	33%	11%	100%	
2	The factory has potential suppliers that has shared quality objective and preferring long term partnership rather than short-term profit.	Count	57.00	30.00	6.00	93.00	3.62
		%	61%	32%	6%	100%	
	Aggregate Mean	Count	55	31	8	93	3.57

Source: Researcher computation based on collected data

This standard principle is focused on the relationship between the organization and its supplier. The relationship must be based on shared objective on quality and assure the mutually beneficial aspect of both parties. The relationship must be built in transparent manner. Respondents had rated their organization as follows: 59% respondents agree, 32.5% of the respondent are indifferent, whereas 8.5% agreed this standard was below the required level. The aggregate mean result also showed the applicability of this particular principle scored above the expected average.

During the interview, the researcher had identified that the organization had full controls on local suppliers only. International procurement had been decided and handled under the corporate level by Amag Plc. Executives by considering the corporate leaders has better experience and exposure than the factory management team. Even though, the involvement of corporate leaders may vital for bridging some challenges, this practice is deviated from ISO 9001:2008QMS procurement practice.

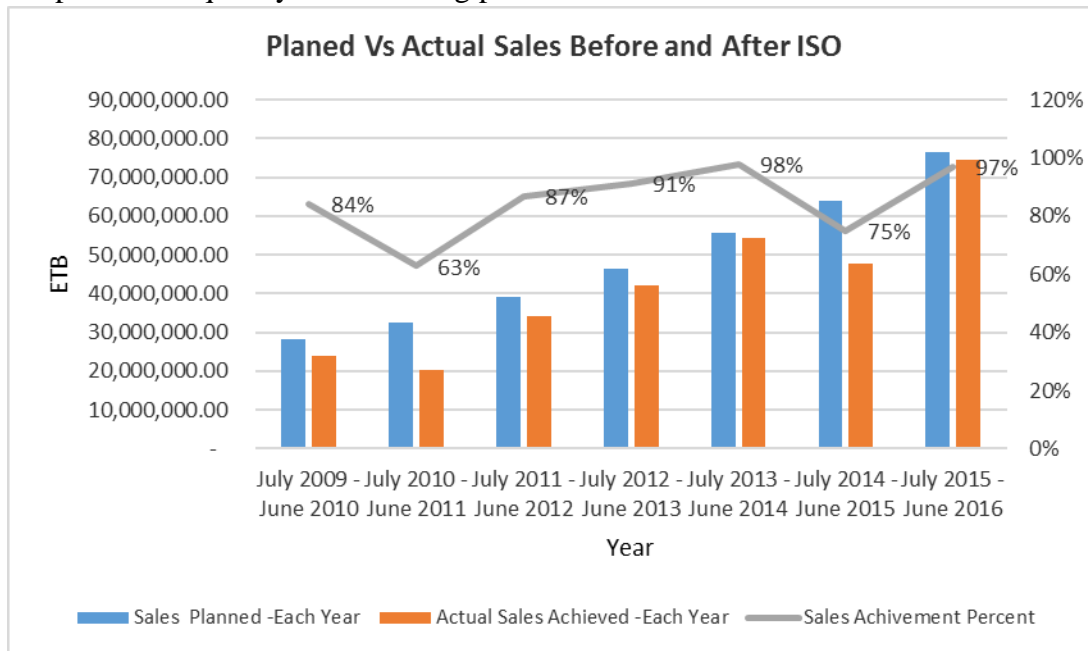
4.2.2 ISO QMS Contribution towards Operational Performance (OP)

It is important to note that the benefits, both tangible and intangible, are difficult to quantify. However ISO certification does have certain benefits to the companies. (Lourenço, Fonseca & Mendes, 2012), precisely explained common motivations and benefits that most organizations have been implementing ISO 9001 QMS. Motives are either internal which is from the motive of the company or external which is outside of the company. The benefits are also the same. Meeting the organization stipulated objectives can be considered as the main purpose that can be considered as a measurable performance. So how does the implementation of ISO QMS helping to bring the desired outputs expected to enhance the factory's performance was second research question which is addressed based on the following analysis. This can be done by comparing operational results that was happened before and after ISO QMS implementation.

Achievement of Planed Objectives (Production, Sales and Profit)

Performance goals enable organizations to plan and organize their work in accordance with the predetermined results or outcomes. Effective performance measurement helps to ensures that all organizational activities support the overall mission and business objectives by linking actual results to plans at all levels of the organization.

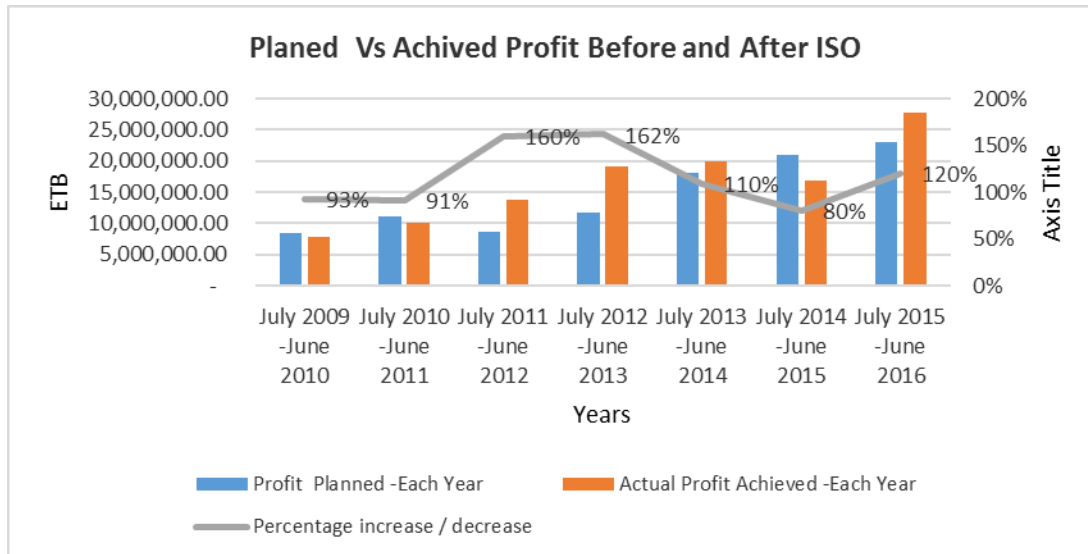
Graph 4.2: Frequency of measuring planned Vs. Actual sales



Source: Researcher computation based on collected data

Amaga Chora Gas and Chemicals Products Factory has long term strategic and operation plans. Putting sales plan as a performance measure is one tool of the organization to monitor its achievement. Graph 4.2 depicts the organization planned verse actual sales. The data was collected from operation plan and achievement report that had been covered for seven years (from July 2009 to June 2016). The result shown, planned sales had been increased by 2.7times from the beginning (ETB28, 278, 541.00 to ETB 76,622,674.16).When we compare average planned sales before and after ISO QMS implementation periods, 1.85.times increment was shown after ISO implementation. Similarly the average actual sales had been increased by 2.28.times than before ISO implementation (from ETB 22,095.2545 to ETB 50,549,069.63).There was two incidents that achievement percentage was very much below than the estimates, which was the second year before ISO implementations and in year 2014/2015. In general the overall average sales achievements increase from73.5 % before ISO to 89.6% after ISO implantation, which was almost by 16%.

Graph 4.3: Frequency of measuring planed Vs. Actual profit

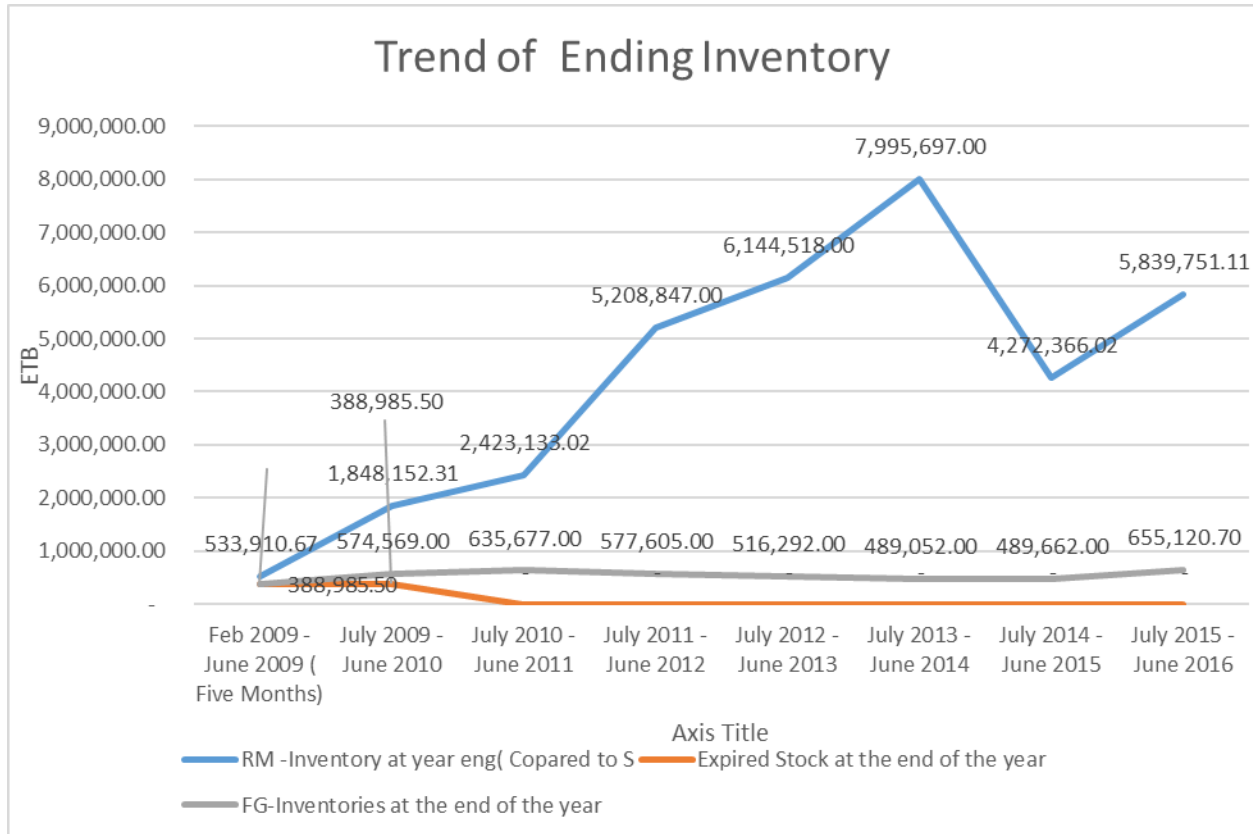


Source: Researcher computation based on collected data

Profit is another performance measures of the organization since it is the residual effect of all activities. The trend of profit depicts on the graph (Graph 4.3) reviled that the maximum profit achieved was 93 % in 2009/2010 before ISO , on the contrary the maximum profit after ISO implementation was 162% in FY 2012/2013. However, the smallest achievement was recorded 75% in FY 2014/2015 which was also after ISO implantation. According to the report, the very reasons of drastic increase on amount of profit were; increase of quantity of product as well as sales amount. The quality of products also had positive contribution towards profit improvement. Causes of profit deep-down in FY 2014/15 was, raw materials shortage related with hard currency problem of the country in one side plus unfair competition from other suppliers forced the factory to reduce the profit margin. The rate of change of profit, which was 13% before ISO certification increased to 16 % subsequent to ISO certification, which was exhibited a 3% increase.

Cost Management (Inventory Cost)

Graph 4.4: Trend of Ending Inventory



Source: Researcher computation based on collected data

Inventory is one of the major cost of manufacturing companies'. Falling on inventory management pay a lot on profit maximization of a firm. So reduction of wastage and maintain optimal utilization of inventory is one of the good measure of performance of cost management. In general high balances of inventory figure show the ill utilization of resources. ACGCPF has three categories of Inventory. The following are the analysis based on Graph 4.4

Expired Stock: The stock which amounted ETB 388,985.50 was acquired on acquisition of the factory in Feb 2009. The interview result confirmed that, the new management had no option to use the stock. Since then it was on the verge of it expiry. Since then there is no issue of expired items.

Finished Goods Ending Inventory: It was very much insignificant comparing with total sales and cost of sales amount at year end. This shows products of the factory was fast moving so that working capital doesn't tide up by Finished Goods Inventory.

Raw Materials Inventory: As shown on the graph, ending inventory was increased year to year. The only year inventory had less amount was FY 2014/2015. The average inventory cost comparing with total cost before and after ISO was 22% & 20.38% respectively, which is nearly the same. But in FY 2014/2015 and 2015/2016 the balance decline to 14% and 13%. Weak utilization of working capital had shown during the first three years of ISO implementation.

4.2.3 Contribution of ISO QMS on Profit Maximization

Financial data are preferred from non-financial primary data that could be collected with the help of questionnaire or interviews. The main reason is, financial data are almost clean from biasness of individual's respondents and it is readily available in the form of various financial reports. One of the objectives of this research was to assess the organization performance before and after ISO implementation by employing a quantitative method. So the performance of the factory under consideration is formulated as a function of major important variables. The model was adopted in line with the work of (Dejene, 2011), on his Master's Thesis. The model originally developed from the work of Naser et al. (2004) and the work of Levine and Toffel (2008). This research adopt Cost- based method by employing the regression analysis. On the course of analysis, Profit was considered as dependent variable and Sales and Cost were considered as independent variables.

Statistical Tests

To apply OLS estimation in panel data model, homoscedasticity (constant variance) is an underlying assumption. Consequently, the assumption of homoscedasticity in the panel data needs to be tested. The test adopted here is the usual Breusch-Pagan test.

Table 4.10: Breusch-Pagan Test for VFI Value Test

Variable	VIF	1/VIF
Total sales~w	3.71	0.304564
iso	1.26	0.795458
Mean VIF	2.75	

VIF value is acceptable up 10 to check the homogenous.

As it can be revealed from the above table, the mean value of VFI value test statistics is 2.75 which indicates that the null hypothesis cannot be rejected. Hence, the basic assumption of homoscedasticity is satisfied.

Normal list check of the dependent variable

As the assumption to check the dependent variable, profit is normal and shown below which is normal by transforming to normal data. Please refer Appendix 6 for the graph

Regression Result (STATA -Version 11 analysis)

The model was adopted in line with the work of (Dejene, 2011), on his master's thesis. The model originally developed from the work of Naser et al. (2004) and the work of Levine and Toffel (2008).

Accordingly, the research apply cost model specified is the following:

$$\ln\text{PROFIT}_t = \ln\text{SALES}_t + \text{COST}_t + \text{ISO}_t + \varepsilon_{it} = \mu_i + v_t$$

Table 4.11: Analysis of regression result, Dependent variable is the natural logarithm of Company's profit (sqrt)

Independent Variables	Coefficient	Standard error	p-value
Cost(square)	-2.97e-12	1.18e-12	0.014
Sales (sqrt)	.6925762	.0353778	0.000
ISO	33.22174	40.24886	0.412
Constant	-120.29	48.60741	0.000
No. of observation	79		
F-stat.(prob>F)	0.0000		
R ² (adj. R-square)	0.9399		

The overall significance of the model is tested by the value of R^2 which shows the variation in the dependent variable explained by the variation in the explanatory variables. Accordingly, 93.99 % of the performance measure in this model is explained by the included explanatory variables those are Profit, Sales amount, Cost, ISO-certification. The joint significance test for the null hypothesis that all coefficients of the explanatory variables are jointly equal to zero is rejected at one percent significance level. This is shown by the F-stat. (P=0.0000). The implication is that the estimated coefficients of sales revenue, cost, and ISO-certification are not jointly equal to zero rather they are jointly important in explaining the performance of the companies.

To examine the impact of ISO implementation on the performance of the companies under consideration, the result of the panel data model is summarized in table 4.11 above. All assumptions are satisfied. So the result revealed that total cost and total sale has significant impact on profit of the factory however; implementation of ISO had not equally significant effect on profit. This fact was also reflected during the analysis of operational performance on graph 4.3.

4.3 Effect of ISO certification on economic as well as social responsibility

Certification is not a requirement of the standards themselves, which can be implemented without certification for the benefits that they help user organizations to achieve for themselves and for their customers. Nevertheless, many thousands of organizations have chosen certification because of the perception that an independent confirmation of conformity adds value (ISO, 2011). Various literatures referred under the literature review section of this paper confirmed that some of the motive of certification are to; increase market share, competitive advantage, possible chance of getting into new market, increased customer satisfaction and others.

In other end, ISO certification is not working for the sole motive of profitability. It is beyond that border too. According to (ISO, 2011), ISO's portfolio of more than 19400 standards provides business, government and society with practical tools for all three dimensions of sustainable development: economic, environmental and societal. Of these, ISO 9001 and ISO 14001, which give the requirements for quality management and environmental management systems respectively, are among ISO's most well-known and widely implemented standards ever. Therefore the below result serves to show how does ISO certification contributes to bring the anticipated outputs explained above was the third research question addressed under the following finding results .

Table 4.12: Frequency of measuring Effect of ISO 9001:2008 certification towards economic and social commitment

10 No	Variables	Measurement	Level of Agreement			Total	Mean
			Agree	NAD	Disagree		
1	After ISO implementation, the factory allocate earmarked budget in its strategic budget for community development program.	Count	33.00	44.00	16.00	93.00	3.17
		%	35%	47%	17%	100%	
2	After ISO the factory has standard waste treatment mechanism to avoid pollution.	Count	38.00	39.00	16.00	93.00	3.26
		%	41%	42%	17%	100%	
3	ISO 9001:2008certification by itself increase the factory credibility this in return open new business opportunities	Count	53.00	31.00	9.00	93.00	3.64
		%	57%	33%	10%	100%	

Source: Researcher computation based on collected data

One of the external benefits thinking to acquire being certification of ISO 9001:2008 is accessing additional market by increasing credibility. On this regard 57% of the respondent agreed that the organization acquired additional business because of implementing the QMS. 33% were indifferent and the remaining 10 % disagree just clearly shown on the above Table 4.13 under line 3.

On the other requirement of which ISO QMS requires to have a standard waste disposal mechanism only 41 % of the respondent agreed that the factory waste treatment mechanism is on the level of the standard which again confirmed by the mean value shows 3.26 which is

below average rate. The question of social responsibility was only supported by 35% of respondents. 47.03% are indifferent and the remaining was not agreed. The reason of low performance for this particular area given by participant was because of lack of information which was one of the limitation of top level management. However; on the way of document review and interview response the researcher confirmed that the factory has been involved on community development works, like infrastructure development, capacity building works on health systems ...etc. and support individual destitute by providing its product for free.

CHAPTER FIVE

SUMMARY, CONCLUSIONS & RECOMMENDATIONS

This chapter summarizes the objectives of the study, the major findings and conclusions. It also discusses the theoretical implications of the study, and makes recommendation for further research.

5.1 Summary of Major Findings

The study examined the extent of ISO 9001:2008QMS implantation and its impact on organization performance in ACGCPF summarized as follows:-

- Five of the eight quality management principles applied in this paper are; *Leadership commitment, Customer focus, Process approach, System approach to management and mutually beneficial supplier relationships*, have a better implementation result which scored above a mean value. The remaining three QMS principles are; *Involvement of people, Continuous improvement and Factual approach to decision making exhibits* below the expected standard. So implementation of QMS brings some changes helping to enhance the factory performance. The result of the study revealed that:-
- Certification by itself increases acceptability of the company products particularly on the time of big tenders.
- The factory did its effort to address its social responsibility
- Implementation of ISO QMS enhance the factory performance by helping to :
 - Improving the overall operational process of the factory,
 - Maintaining customer satisfaction,
 - Access big tenders which requires ISO standards and
 - Maintaining inventory cost at minimum level

5.2 Implication of the Findings

The findings of study imply that, overall assessment as to how ISO 9001:2008QMS has been implemented in the factory set up having given equal weight for each of the eight principles, the rate of implementation performed was 62.5% (Five of the principles assure average grades from the result of respondents survey).The rating of the remaining three principles was 37.5% which was below the expected average standard. This research considers ISO 9001-2008-QMS as a package of QM tool, thus the findings revealed that the implementation QMS has a limitation to assure the expected continuous improvement.

The research result showed that the organization was profitable before and after ISO implementation. The reason behind achieving the highest amount of profits after ISO implementation is as a result of the following factors:-

- Additional investment subsequent to acquisition which was almost two times of initial investment, helping to increase quantity of products by availing more raw materials and improving machinery status. Consequently quantity of sales also increased. This leads to increment of average sales by 92% before ISO certification and 126.2% after ISO implantation.
- The average cost of products before ISO implementation was 61.74 % of sales, this figure after ISO implementation shows 61.44 %, which was very minimal contribution to profit.
- In addition to increment of quantity of sales, the price increase on products had significant effect to the increment of profit on amount basis. Whereas the rate of improvement of profit was not that much escalated, which was 0.03% (13% before and 16% after ISO implementation) could be the result of ISO implementation and other related factors. The analysis was presented on graph 4.3 and it can be shown on the summary of profit and loss statement attached on appendix 4 of this paper.

5.3 Conclusion

For simplicity, the conclusion part of the research is presented as per research question of this paper.

5.3.1 Extent of Implementing ISO 9001:2008QMS

Leadership commitment:

The survey result showed that, the commitment of leadership is above average rate. Yet, top level managers are almost tied on their line responsibilities. This study concluded that, though leadership is thought have significant influence in business performance of the organization, it has not been given the required level of attention. It is only through excellent management leadership that the organization can achieve strategic direction, motivation, sense of commitment and passion and becoming a change agent.

Customer focus

Survey results as well as documents review have revealed that customers compliant were very small, no severe complaints was observed and all complaints were resolved on time. Based on the findings of this study, the organization focuses on its customers is encouraging.

Process approach

The research results revealed that all products are passing through a standard process and the end result could be predetermined. So the result of the study concluded that the organization has a healthy standard process oriented system.

System Approach to Management

As per the findings, it can be concluded that the factory has a standard management system guided by its own quality policy, quality objective, controlled documents, and has internal ISO audit committee

Mutually Beneficial Supplier Relationships

The findings of this paper confirmed that the organization has better control on local suppliers only. International procurement are fully controlled under the corporate level by Amag Plc. as they thought the corporate leaders has better exposure than the factory management team. As per ISO 9001:2008QMS procurement, partial responsibility is not acceptable. So this study concluded that, the organization procurement system is relay on personalities rather than a standard system.

Involvement of People

Better involvement of people help to furthering the organization's objectives and people being accountable for their own performance and eager to participate in and contribute to continual improvement. (ISO, 2008). Hence; the study concludes that employee involvement has not been given the required level of attention despite of the fact that it has a prominent influence in business performance.

Factual Approach to Decision Making

In the course of documents review, there was two areas that decisions were made based on factual data; these are customers (external) complaint and human resource issues. There was no enough evidence showing other major decisions were made based on what. The study concludes that this area has a challenge of transparency.

Continuous Improvement

Assuring continuous improvement in all areas of the organization is the heart of ISO QMS principle, thus changes and improvement must be holistic. These practices might have increased efficiency, however, individual changes does not considered as an improvement on a comprehensive system like ISO QMS. In line with this, the research concluded that assuring continuous improvement based on ISO principles is not visible in the factory.

5.3.2 Contribution of QMS towards organization performance

ACGCPF has a long term strategic and operation plans, putting sales (planned and actual) and profit as a performance measure. Accordingly, all results have been improved than ISO implementation. As per the finding, it can be concluded that the reason behind achieving the highest amount of profits after ISO implementation is as a results of additional investment subsequent to accusation, increased sales in amount as well as in type and improvement of profit margin of products. Implementation of ISO 9001:2008QMS does impact on performance but not equally has significant contribution on profitability of the organization like other variables specified above.

5.3.3 Contributions of ISO certification on Market Performance as well as discharging Social Responsibility

The findings of this research concluded that, ISO certification has its own contribution towards the credibility of factory products. On social responsibility side, though the participant survey shows unsatisfactory result, documents have revealed that various incidents shows the organization had been involved on this area. Thus, the research concluded that the problem of different result on survey and document assessment is because of lack information from employee side. This has mainly resulted from neither the management has disclosed the fact nor involve employees.

5.4 Recommendations

Based on the research findings and conclusions, the following recommendations are essential for the organization:-

- ❖ Currently the factory can perform their production processes in a better way than before. However, it has not attained the required level. To maintain and enhance this operational and production improvement, the management should further search for best ways of mastering quality management system to assure a continuous improvement in all areas.
- ❖ Having decided to drop the traditional system and adopting the modern management was the valued decision of the management. However; a formal and timely evaluation on the system has not been part of the change. Thus, the management cannot be able evaluate the merits and demerits of the system objectively. This in turn can be a major cause of addressing weakness and strength on timely manner. Therefore, the research result strongly recommend that, the organization should pay required attantion for the monitoring and evaluation part (PADC) of the system to address every challenges on time.
- ❖ The organization can assure inclusiveness of all stakeholders to guarantee the level of confidence. This in turn increases the degree of internal communication to employees in their day to day activities and so as to improve their levels of productivity in the organization.
- ❖ The organization should grow a stronger culture that nurtures high-trust on their staff's. This in turn assure better relationship between all members of the workforce and strengthen sense of belongingness to the organization.

5.5 Implication of this study

Quality Management Practice in Amaga Chora Gas and Chemicals Products Factory does not exhibit higher implementation standards. Five of the eight QMS principles (Leadership commitment, Customer Focus, Process Approach, System Approach to Management and Mutually beneficial Supplier relationships) assure a little bit above average aggregate mean result. The remaining three QMS principles literally exhibit below average implementation standard. The main reasons for the aforementioned shortfalls are; minimal commitment of top level management, capacity limitation of both managers and employees, owner's interference on critical areas, capacity limitation of government to assure good governance (land use right, protection from unfair competitions with weak quality products...etc.), lenient monitoring strategy of the quality awarding agency and weak strategy of advocating quality by all quality advocators.

(Beshah and kitaw 2014) had published a journal focusing on: Quality Management Practice in Ethiopia in service and manufacturing sector, they conclude that "quality management practice in Ethiopia was found to be low in all the tents including leadership policy and strategy, resource management, process management, customer satisfaction, business performance and impact on society and research on quality management practice in Ethiopia."

The finding of this research is quite similar with the result above. So the student researcher suggest that other researchers may work on these identified bottlenecks that has been affecting the implementation of Standard QMS and forward to their feasible recommendation to policy makers and executives.

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Appendix-1

Appendix1: Questionnaires to be filled by employees and managers



Dear Respondents,

My name is Girma Negewo Geda, a student at *St. Mary's University* pursuing Master Degree in General MBA .As part of the requirements of the graduation, I am supposed to conduct research . This questionnaire is part of my Master thesis, the purpose of it is being a tool for data collection, in which I am interested in analyzing the implementation and its impact ISO 9001:2008QMS. So I am selecting your organization which has been implemented the system for last six years. My research will address “**The implementation of ISO 9001:2008QMS and its impact on organizational performance**” on ACGCPF which you have been serving on.

The research is conducted under the supervision of Terfe Feyera (PHD.), School of Graduate Studies, St. Mary's University. I would like to know your perceptions and general overview of QMS on your daily activities for the past five years (July 2011 to July2016). I appreciate your participation which will contribute to my successful completion of this programme. Approximately this questionnaire will take not more than 45 minutes of your precious time. Please note that any information that you provide will be treated in confidential manner.

Thank you very much for your time

SECTION 1: RESPONDENTS PROFILE

1. Your educational level (Tick as applicable)
 - a) Below Diploma ()
 - b) Diploma ()
 - c) Degree ()
 - d) Master's Degree ()
 - e) PhD. ()

2. What is your current position in the Amaga Chora Gas and Chemical Products Factory? (Tick as applicable)
 - a) Head of department/section ()
 - b) QMS coordinator ()
 - c) Operations ()

3. How long have you been with this company (Tick as applicable?)
 - a) Less than 5 years ()
 - b) 5-10 years ()
 - c) More than 10 years ()

Section 2. Opinion Survey relating to the study

In this section you are asked to take into account a number of statements of your view of the Implementation ISO 9001 -2008 and its impact on your company. Please answer all questions by selecting the most suitable, ranging from Strongly Agree through to Strongly Disagree, in the vacant end column, whichever best describes the current status in your company.

2.1. Implementation of ISO 9001:2008QMS as per principles of ISO(Address 1st Research Question)

No	Statements	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)
I. Leadership Commitment						
1	Top Level Executives are actively involved in establishing and communicating the organization Mission, Vision, Values and Goals to the organization employee to internalize the quality objective of the Factory.					
2	Top Management allocates adequate Human Resource, Financial Resources and Material Resource to assure quality at all time.					
3	I have trust and confidence in our Management team so I just follow them as a role model.					
4	Senior Executives insist on accuracy and reliability of all information and communications with in the organization.					
5	The door of Top Level Executives always open to entertain any comments or suggestions from internal or external customers.					
6	Top Level Management always take corrective action on time if any non-conformity happens.					
II. Customer Focus						
1	Since implementing ISO 9001:2008QMS, the factory is able to provide standard quality products as per the customer's needs and requirements.					
2	The factory has enough communication channel to assure both way communication with its customers. The following are common ways; Suggestion boxes, Website, email address (for whistle blow kind of communication), Specific phone...etc. So the factory use most of the stated channels consistently to address the problems.					

3	The factory has been implementing ISO-9001:2008QMS for the last five years since FY'2011. Now all basic customer needs requirements are identified and implemented accordingly.					
4	The factory has a standard compliance handling and resolution format and procedure to handle customer's complaints. This procedure is consistently applicable whatever the problem may be.					
5	The factory has a mechanism measuring customer satisfaction on a regular basis.					
III. Involvement of People						
1	The factory always sensitize employees to aware how their activities and attitudes influence product quality.					
2	The Factory has a transparent and effective performance appraisal system helping employee to know their limitation and strong parts for improvement and rewarding employees respectively.					
3	The Factory has an environment or a forum to its employee to discuss their challenges or sharing their knowledge and experiences.					
4	The factory employees are always aware of relevant decision and actions taken by the organization.					
IV. Process Approach						
1	The Factory QMS is instrumental for standardizing all applicable documents helping to maintain process approach in the factory.					
2	The QMS of the factory focusing of the factors, like resources, methods and materials that improve the key activities of the organization rather than end result.					
3	A documented procedure is implemented to ensure product quality, from procurement to final delivery at all time and all time.					
4	The factory process management system is flexible for corrections and changes.					
V. System Approach to Management						
1	The factory QMS provide better understanding of the roles and responsibilities necessary for achieving common objectives and thereby reducing cross –functional barriers.					
2	The Factory has all required Quality Policy, Quality Manuals and Quality Objective, controlled documents. It is always applicable to assure the standard system.					
3	The factory Internal ISO Audit Committee discharge its responsibility on time and in a transparent way.					
VI. Continuous Improvement						
1	The factory use the popular PDCA (Plan, Do, Check & Act) cycle for process control and improvement.					

2	The Factory allocate enough budget for research and development to maintain the current and to improve quality of the product continually.					
3	The major objective of a continuous evaluation and assessment is for betterment of the system rather than critics and punish employee.					
VII. Factual Approach to Decision Making						
1	The factory has reliable data base system helping all decision makers to decide as per the factual data getting from the system. So Always decision are made based on factual analysis.					
VIII. Mutually Beneficial Supplier Relationship						
1	The Factory QMS has provide sound control over suppliers to assure its product quality as well as price at the end.					
2	The factory has potential suppliers that has shared quality objective and preferring long term partnership rather than short-term profit.					

2.3. Contribution of ISO 9001:2008 certification on economic as well as social responsibility (Research Question 4)

No	ISO 9001:2008 certification contribution on economic and social responsibilities	Strongly Agree (5)	Agree (4)	Indifferent (3)	Disagree (2)	Strongly Disagree (1)
1	The Factory allocate earmarked budget in its strategic budget for community development program like support on infrastructures like schools, clinics, and water supply ,community waste disposal and direct support to destitute...etc.) .					
2	The Factory has standard waste treatment mechanism to avoid pollution.					
3	ISO 9001:2008 certification by itself increase the factory credibility this in return open new business opportunities					

Appendix2: Interview Questions for top managers of GIW PLC.

Section 4: Interview Question to Top Level Management in order to Assess to what extent ISO 9001:2008QMS is being implemented properly and its impact on Amaga Chora Gas and Chemicals Products Factory Performance (Address all ROs)

To assure the validity the idea of interview questions are adopted from the Revised Self-Assessment Manual of Manufacturing Sectors Developed by Ethiopian Quality Award Organization (EQA) in Jan 2013 and from the organization ISO -9001:2008manuals. Questions are rephrased and amended to be clear without alter the original essence.

1	What do you do to publicize the organization Vision, Mission, Values and Beliefs to the internal as well as the external customers?
2	What does the organization do to ensure the proper implementation of ISO 9001:2008QMS in the way that it fits to : <ul style="list-style-type: none">❖ Customer satisfaction❖ Assure Continuous improvement
3	What efforts does your organization do to assess the needs of the customer so as to meet their expectation?
4	How do you explain or justify the significance of ISO9001:2008implementation to the organization performance?
5	Who are the regular suppliers for the company? How do you think they are loyal to your organization?

Appendix3: Performance Measurement (Research Q #2)

3.1 Customer Satisfaction:

Customer satisfaction is one of the tool for assessing organizational performance. So face to face interview or administering questioners are the best way to firsthand information, but for this research conducting interview or administering questioners is almost impossible and unrealistic since customers are various and scattered in nature. So, I have thoroughly assess the situation from the files and reports related with customer's management. The ideal sources for this purpose are Customer compliment and handling report files arranged in chronological orders, Periodic report of Sales Returns on Defected Products and from Periodic Management Reports. So I will analyze on annual basis for Seven (7) years data. Two (2) years data from prior to ISO 9001:2008QMS implementation and five (5) data then.

The following are leading questions for the assessment

- Number of complaints during the year
- Types of complaints (Simple, Medium or Serious complaints)
- How frequent similar complaints from customers
- How many of them address accordingly (in %)
- What are the procedures the organization has been applying to resolve the problem?

3.2 .Additional Performance Measures

In addition to the qualitative ways of assessing organization performance on questioners and direct interview with Top Level Management of the organization, evaluating quantitative data are very important. By nature accounting data are open for manipulation and containing historical data but still they have strong input to evaluate the organization performance since those date are free from biases. So Financial Statements, External Audit Reports, ISO audit committee reports, Regulatory body reports and comments and period organizing reports are the main source getting the required information to evaluate the organization performance.

No	Statements	Year 1	Year 2	Year 3	Year 4	Year 5
3.2.1	Cost Management					
	Raw Material Inventory at year end.					
	Level of Expired Stock at the end of the year					
	Finished Goods Inventories the end of the year					
	Defective products from the total production volume- (%)					
3.2.2	Production Improvement (the percentage of Production Achieved compared with the Production Planned).					
	Production Planned -Each Year					
	Production Achieved -Each Year					
	Percentage increase / decrease					
3.2.3	Sales Improvement (Planned sales Less Actual achievement)					
	Sales projection(Planned) -Each Year					
	Actual Sales Achieved -Each Year					
	Percentage increase /decrease					
3.2.4	Profit Achievement (Planned Less Actual achievement)					
	Profit Planned -Each Year					
	Actual Profit Achieved -Each Year					
	Percentage increase (decrease)					

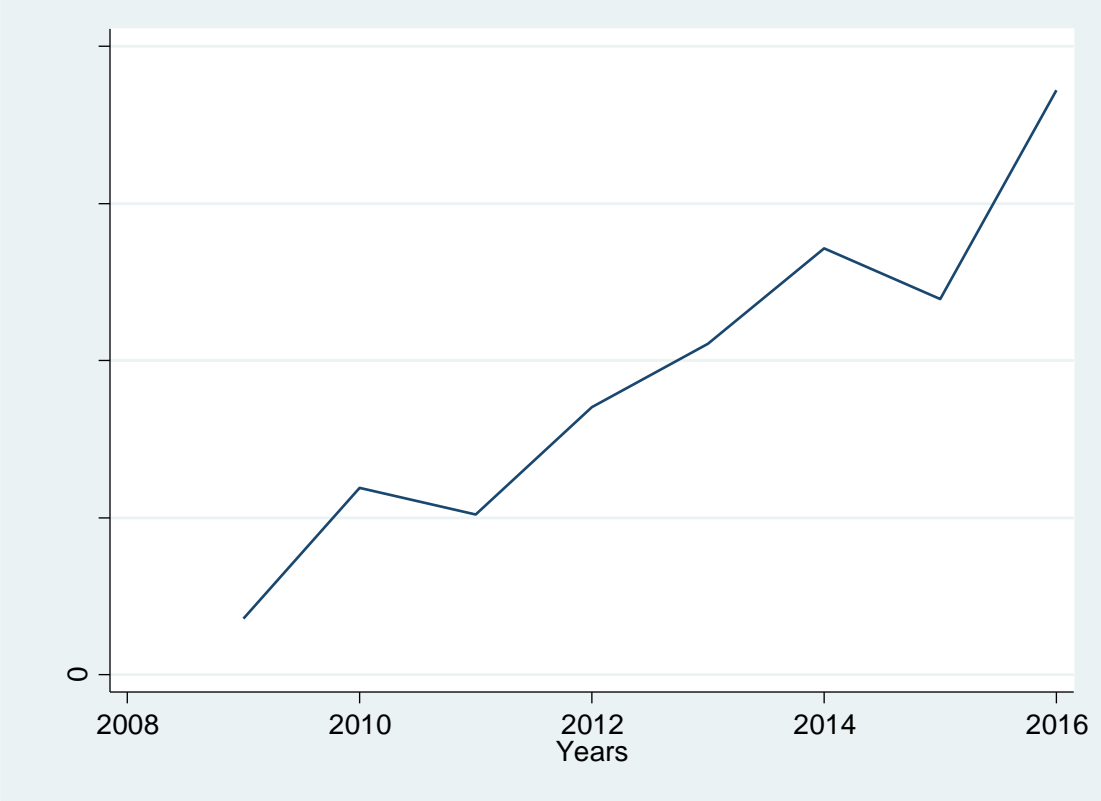
Appendix4: Table Showing Amount of Sales, Cost & Profit over Time

Amaga Chora Gas and Chemical Products Factory
Summary of Operational Performance
From February 2009 to June 2016

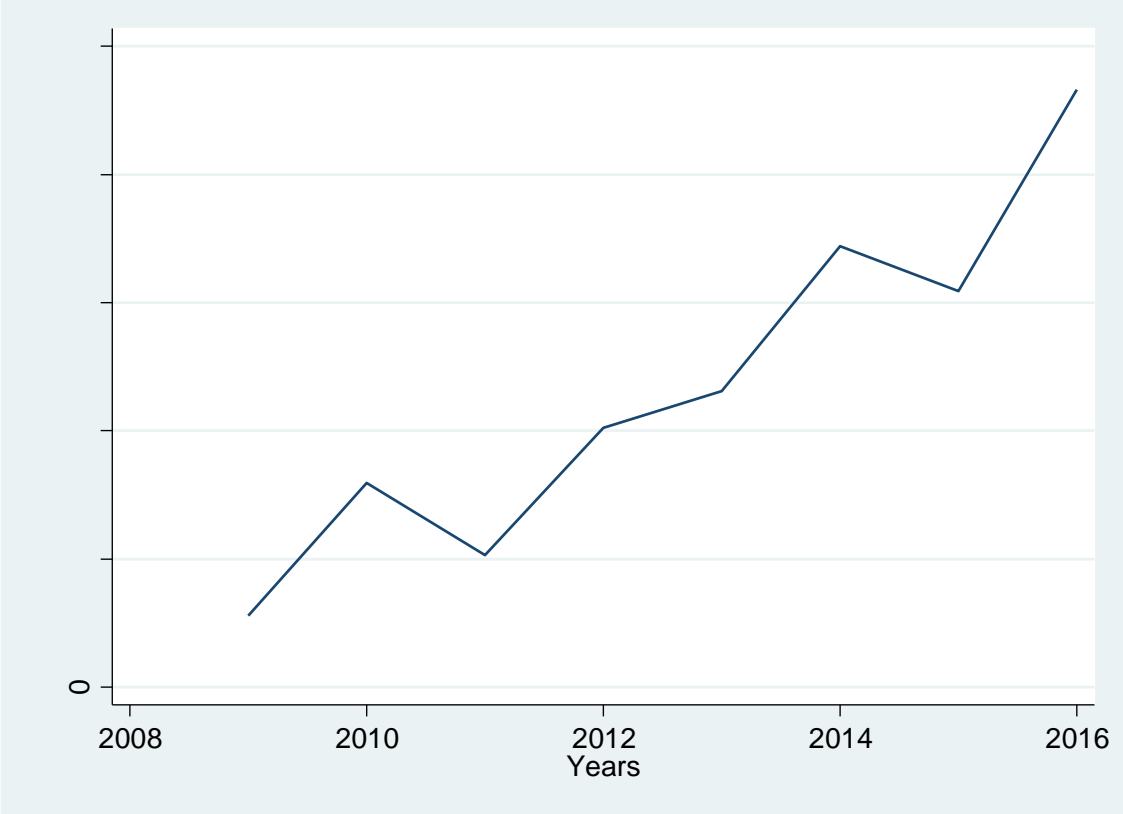
Performance Measures	Statement Before ISO 9001:2008 Implementation (for 2 years and 5 Months)			Statement After ISO 9001:2008 Implementation -Five Years				
	Feb 2009 -June 2009 (Five Months)	July 2009 -June 2010	July 2010 -June 2011	July 2011 -June 2012	July 2012 -June 2013	July 2013 -June 2014	July 2014 -June 2015	July 2015 -June 2016
Revenue (Sales of Products , Accessories & Service)	6,428,903.00	23,786,972.00	20,403,518.00	34,097,075.00	42,148,863.00	54,294,427.00	47,819,981.00	74,385,002.16
Cost of Sales and Expense (CGS and OH costs)	5,029,054.00	15,925,775.00	10,295,422.00	20,222,061.00	23,107,196.00	34,425,669.00	30,904,444.00	46,633,344.16
Profit Before Tax	1,399,849.00	7,861,197.00	10,108,096.00	13,875,014.00	19,041,667.00	19,868,758.00	16,915,537.00	27,751,658.00

Appendix 5: Graphs Showing Sales, Cost & Profit over Time

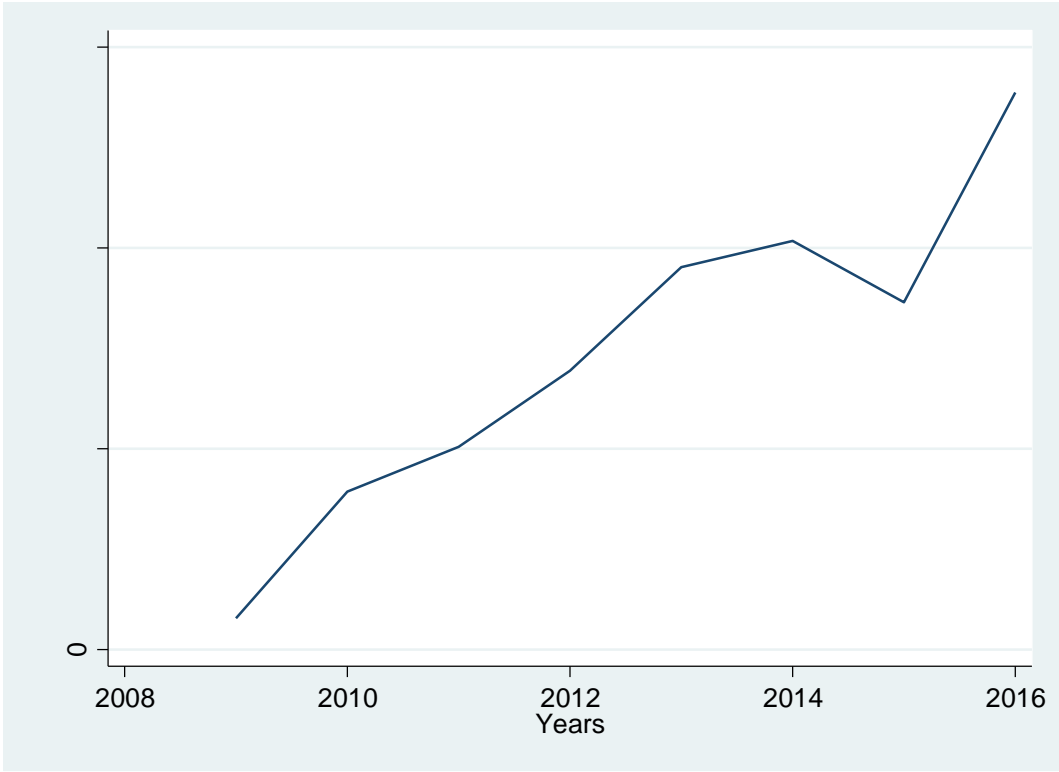
Graph 1: Trend of sales improvement over the



Graph 2: Trend of Cost increase over the years



Graph 2: Trend of Profit increase over the years



Graph 3: Trend of Profit increment over the years

Appendix6: Statistical Tests

Heteroscedasticity Test

To apply OLS estimation in panel data model, homoscedasticity (constant variance) is an underlying assumption. Consequently, the assumption of homoscedasticity in the panel data needs to be tested. The test adopted here is the usual Breusch-Pagan test.

Breusch-Pagan test for heteroscedasticity

Ho: Constant variance
$\chi^2 = 0.000$
Prob $>\chi^2 = 0.9561$

As it can be revealed from the above table, the probability value of the chi-squared statistics is 0.9561 which indicates that the null hypothesis cannot be rejected. Hence, the basic assumption of homoscedasticity is satisfied.

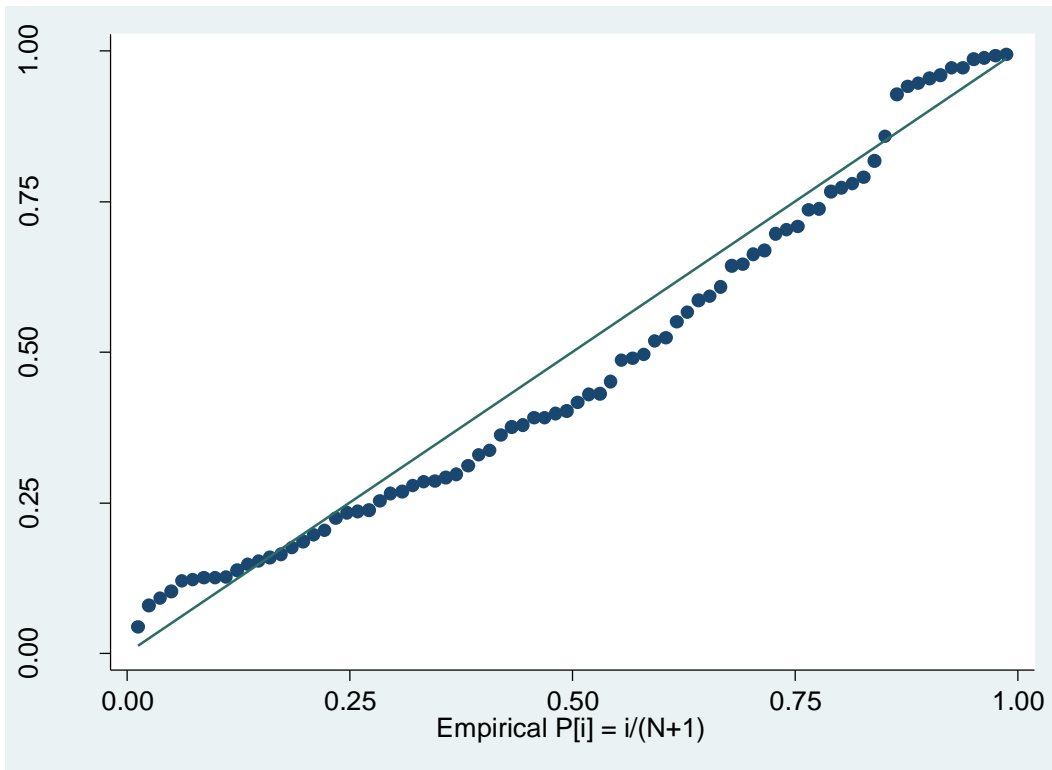
Breusch-Pagan Test for VFI Value test

Variable	VIF	1/VIF
totalsales~w	3.71	0.304564
iso	1.26	0.795458
Mean VIF	2.75	

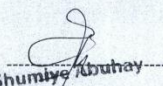
VIF value is acceptable up to 10 to check the homogeneity.

Normal list check of the dependent variable

As the assumption to check the dependent variable profit is normal and shown below which is normal by transforming to normal data.



Appendix 7: Quality Policy of the Organization

<p style="text-align: center;">Quality Policy</p> <p>The top management of Amaga PLC Chora Gas & Chemical Products Factory is committed to produce and deliver quality Oxygen, Acetylene, Sodium Hypochlorite and Floor Wax products at reasonable price that meet the needs and expectations of customers and statutory and regulatory requirements.</p> <p>We are committed to establish, implement and maintain a Quality Management System in line with the requirements of ISO 9001:2008 and continually improve its effectiveness.</p> <p>We strive to ensure continuous quality improvement by:</p> <ul style="list-style-type: none"> ➤ Minimizing quality deficiencies and wastage; ➤ Developing our employees' capacity to improve their performance; ➤ Making the necessary effort to create a safe and healthy working environment that will foster team work; ➤ Seeking better, faster and economical ways of doing our work to improve performance & be more competitive; <p>We exhibit and maintain high ethical standards, a sense of urgency, respect for the individual and encourage an attitude of "Do the right thing right the first time" by everyone.</p>	<p style="text-align: center;">የጥራት ፖሊሲ</p> <p>በአማጋ ኃ/የተ/የግ/ማ ሮሎ የጋዝና ኬሚካል ውጤቶች ማምረቻ ፋብሪካ ማኔጅመንት የደንበኞችን ፍላጎት እንዲሁም መሠረታዊና አስገዳጅ የደረጃ መስፈርቶችን የሚያሟሉ የአክሲድን፣ አሴትሊን፣ ሶዲየም ሃይፖክሎራይትና የወለል ስም ምርቶችን በጥራት አምርቶ በተመጣጣኝ ዋጋ ለማቅረብ በቁርጠኝነት ይሰራል።</p> <p>የISO 9001:2008 የጥራት ሥራ አመራር ስርዓትን በድርጅቱ ተግባራዊ በማድረግ እንዲሁም ሂደቱን በየጊዜው በመከታተልና በማሻሻል ውጤታማነቱን ለማረጋገጥ ድርጅታችን ተግባር ይሰራል።</p> <p>ቀጣይነት ያለው የጥራት መሻሻልን በድርጅቱ ለማምጣት፡</p> <ul style="list-style-type: none"> ▪ የጥራት ችግሮችንና ብክነቶችን በየጊዜው በመቀነስ፤ ▪ የሠራተኞችን ብቃት በማሻሻል ብሎም የመፈጸም አቅማቸውን በማሳልበት፤ ▪ የሰራ ቦታዎች ምቹና ጤናን የማይጎዱ በማድረግና የህብረት ስራ መንፈስን በማጠናከር፤ ▪ የአሰራር ሂደቶች ዘመናዊና ቀልጣፋ እንዲሁም ያለአግባብ ተጨማሪ ወጪን የማያስከትሉ በማድረግ ድርጅቱን ውጤታማና ተወዳዳሪ ለማድረግ ጥረት እናደርጋለን። <p>በመልካም ስነ-ምግባርና ሁሉንም በእኩል ደረጃ በማስተናገድ ሥራዎችን ለማከናወን፣ ፈጣን ምላሾች ለመስጠትና አላስፈላጊ የሥራ ድግግሞሽን ለመቀነስ በድርጅታችን ውስጥ ከፍተኛ ጥረት ይደረጋል።</p>
<p>Signature /ፊርማ</p> <p style="text-align: center;"> Shumiye Abuhay Manager</p>	

