

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY
SCHOOL OF BUSINESS AND ECONOMICS
DEPARTEMENT OF MANAGEMENT



The Effect of Quality Management Systems (ISO 9001:2008)

Practices on Organizational Performance.

A Survey of Selected ISO 9001:2008 QMS Certified Chemical and

Chemical Product Producing Firms in Adama City and Awash

Melkassa Town.

By
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ADAMA, ETHIOPIA

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DECLARATION

I Firew Adugna hereby declare that the thesis work entitled "The Effect of Quality Management Systems (ISO 9001:2008) Practices on Organizational Performance," submitted to Department of Management , School of Business and Economics ,Adama Science and Technology University in partial fulfilment for the requirement of the Degree of Masters of Business Administration is my original work, and has not been printed, published and submitted as a research work, thesis, or publication in any form by any University in Ethiopia or abroad. Further, I confirm that all the sources of materials used for this study have been appropriately cited and acknowledged.

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DEDICATION

I dedicate this thesis work to my beloved youngest brother Fitsum Adugna.

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Acronyms

BP: Business Performance

CF: Customer Focus

CI: Continual Improvement

FA: Factual Approach

IP: Involvement of People

ISO: International Standardization Organization.

LS: Leadership

OP: Operational performance

ORP: Organizational Performance

PA: Process Approach

QM: Quality Management.

QMPs: Quality Management Practice.

QMS: Quality Management Systems

SA: System Approach

SPSS: Statistical Package for Social sciences.

SR: Supplier Relationship

TQM: Total Quality Management

Abstract

In today's global environment, organizations are constantly looking for the ways to expand and improve their business in terms of quality and quantity. Adoption and subsequently certification of these organizations with ISO9001 has revealed to be the proactive strategy to improve organizational performance. This study empirically examined the extent to which quality management system (ISO 9001:2008) Practice and Organizational performance are correlated. A descriptive research design using survey was adopted in this paper. The sample size of 32 respondents were selected using purposive sampling approach. Data regarding the effect of Quality Management System (ISO 9001:2008) practice on the organization operational and business performance was collected using questionnaires. The collected data was analyzed using descriptive analysis such as mean and frequency where as inferential statistics was done through correlation and regression test. The findings reveal that QMS (ISO 9001:2008) Practices has a strong positive correlation with operational performance. However, QMS (ISO 9001:2008) Practices has no strong positive correlation with business performance.

Keywords:

ISO9001:2008, Operational Performance, Business Performance

CHAPTER ONE

Introduction

1.1 Background of the study

To be competitive and to stay as a competitor in today's business in every categories of products and services needs quality. Further, understanding and meeting customers' expectations and subsequently being different from competitors are important in order to survive in the today world of globalization. A quality management system (QMS) is a management technique used to communicate to employees what is required to produce the desired quality of products and services and to influence employee actions to complete tasks according to the quality specifications (ISO,2008). It cannot be denied that the ISO 9001 standard is a quality management system that has had an important impact on the development of quality management and it has arguably made the most influential contribution to quality management that there has been to date (Heras,2011). It aims to assist companies in establishing a solid quality system to maintain the quality level (Lin & chai,2012).

The International Organization for Standard (ISO) first published ISO 9001 quality management system in 1987. Since then, ISO 9001 was revised in the years1994, 2000 and 2008 respectively. ISO 9001 quality management system requires certain documentation on the operational procedures and managerial actions used to achieve customer requirements (Al-Refaie *et al.*, 2012). When employees work according to the procedures that are described in the ISO 9001 series they are able to identify sources of problems in the production process.

This enhances the purpose of the ISO 9001 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, sales and profitability should increase (Singel *et al.*,2001).

Currently many researchers have sought to understand how the implementation of ISO 9001 assists organizations to improve their organizational performance. Some literature shares the assumption that ISO 9001 adoption results in improvement of a firm's performance (Marin & Ruiz-Olalla,2011). By contrast, other studies support the view that since the ISO 9001 standard focuses on the development of processes and not on all managerial areas, it cannot guarantee the improvement of product quality or organizational performance (Feng *et al.*,2008). Furthermore, researchers (Marin & Ruiz-Olalla,2011) point out that studies that have evaluated the role and business value of ISO 9001 certification show mixed results. So, it is apparent that the literature is unclear as to the current state of ISO 9001 implementation. According to Powell (2009) found out that attempts to test the link between quality management practices and organizational performance are beginning to emerge. A significant number of authors suggest further research be conducted in the field of QMS in order to bring new data with regard to the existing value of the ISO 9001 and its relation to company performance (Kafetzopoulos *et al.*,2015).

In Ethiopia, at present a number of organization have embraced ISO 9001 quality management systems in order to improve their performance, but little is known about the effect of QMS on organizational performance (ISO,2008). By considering the situation this study aspires conducting the study on two chemicals product producing company, Awash Melkassa Aluminium sulphate and sulphuric acid S.C and Bekas Chemicals plc which were ISO 9001:2008 QMS certified firms in 2011 and 2012 respectively.

1.2 Statement of the problem

Organizations are encouraged to adopt ISO 9001 requirements in their management systems so as to improve performance (ISO,2005). An organization which is certified to ISO 9001 is expected to enhance customer satisfaction and consistently provide product that meets customers and applicable statutory and regulatory requirements. Many scholars study identifies relationships among QM practices and examines the effects of these practices on performance, but the finding is inconsistencies and conflicting results among scholars. A large body of literature highlights the positive effect of QM practices on organizational performance. According to Jose *et al.*,(2012) the ISO 9001 standard creates benefits related to customer satisfaction (for instance, fewer complaints and improved customer satisfaction) . Sharma (2005) studied the association between ISO 9001 certification and financial performance. The study found that ISO 9001 certification is associated with financial performance improvements in the form of operating efficiency, growth in sales, and overall financial performance. The result also suggested that by improving organizations' internal business process, organizations can benefit from ISO 9001 certification. Other study conducted by Jang and Lin (2008) examined the relationship between ISO 9001 implementation and firm performance. The result indicated positive relationship between the two. ISO 9001 implementation directly and positively affects operational performance and indirectly affects market performance, in turn positively impacting business performance. Kimutai and Alui (2011) presented on the role of ISO 9001certification in Kenya's sugar industry on Mumias Sugar Company and found out that production in the company increased after certification and that employees enjoyed the benefits of the company being ISO certified.

On the other hand, there is significant numbers of researchers failed to find positive outcomes of ISO 9001 implementation. For example Terziovski *et al.*,(1997) studied the relationship

between ISO 9001 certification and organizational performance. Survey to 962 Australian and 379 New Zealand manufacturing companies was conducted. The result showed that ISO 9001 certification has no significantly positive effect on organizational performance. Lima *et al.*,(2000) study compared performance of two group companies, namely a group which consists of certified companies (ISO 9001) and a control group. The comparison showed no significant difference between the performances of the two groups. Other study by Dick *et al.*,(2008) examined the link between QMS certification and performance. They compared performance of 800 firms which consist of certified and non-certified firms. The result showed that performance difference between certified and non-certified firms cannot be said because of certification. The inconclusive findings of the researches on ISO 9001 implementation outcomes indicate that it is necessary to carry out further investigation on the topic.

Therefore, this studies attempt to assess the effect of ISO9001:2008 QMPs on organizational performance in two different chemicals product producing companies in Ethiopia to get clear view and understanding on the two opposing claims, further more to contribute for gap in the literature on the relationship between QMPs and organizational performance.

1.3 Objective of the study

The general objective of the study is to investigate relationship between ISO 9001:2008 quality management practices (QMPs) and organizational performance (ORP) through the development of a conceptual framework.

Specifically;

- To investigate a relationship between ISO 9001 quality management practices (QMPs) and operational performance.

- To investigate a relationship between ISO 9001 quality management practices (QMPs) and business performance.

1.4 Significance of the study

The findings obtained from this study can be useful for firms' under study and practitioners in the quality management area. The paper further contributes on the following areas:

- Firms' which is not certify ISO 9001 quality management system will be better informed.
- The study would considerably contribute to other studies to be made in ISO 9001 QMS by providing a ground picture about QMS and Organizational performance.
- The finding of the study could be used as an input for policy makers of the country.

1.5 Scope of the Study

The study carried out within Adama and Awash Melkassa town in the selected ISO 9001:2008 QMS certified chemicals and chemicals product producing firms. The study targeted two firms, Bekas Chemicals plc and Awash Melkassa Aluminium sulphate and sulphuric acid S.C, the only ISO9001certified chemicals and chemicals product producing companies in Adama and Awash Melkassa. Since organizational performance is vast to measure, the study explored the effects of ISO 9001:2008 certification on two dimensions of organisational performance: Operational (Under operational performance: Product quality and customers satisfaction are considered) and Business performance (Under business performance: Profitability are considered)

1.6 Definition of key terms

- A quality management system: is a management technique used to communicate to employees what is required to produce the desired quality of products and services and to

influence employee actions to complete tasks according to the quality specifications (ISO, 2008).

- ISO 9001:2008: is the world foremost quality management standard, used by hundreds of thousands of organizations in over 170 countries around the globe. It sets out the essential requirements for a practical and effective quality management system which is, in essence, a system for minimizing risk and maximizing opportunity (ISO,2008).
- Operational performance: is the performance related to an organization's internal operations, such as productivity, product quality and customer satisfaction (Terziovski *et al.*,2007)
- Business performance: performance related to company sales growth, profitability, net profit margin and financial results (Kafetzopoulos *et al.*,2015).

1.7 Limitation of the study

The sample of the respondents were limited to two ISO 9001:2008 certified chemicals and chemicals product producing company in Adama and Awash Melkassa town. More ever, there is also other performance indicator for the companies which is not including in this study. Therefore it may not be used to generalize for the whole chemicals manufacturing sectors.

1.8 Organization of the paper

The study was organized in five chapters. The first chapter discussed with introduction in relation to the topic under study. Explicitly it tried to discuss in brief about background of the study, statement of the problem, objective of the study, Significance of the study and Scope of the Study. The second chapter of the paper presents review of related literature. Specifically it reviewed different books and journals, under the conceptual section different previous researches done in the topic and hypotheses derived presented.

The third chapter concentrate on methodology, specifically discussion on research design, sampling, data collection tools and method of data analysis as well as the reliability and validity issues of the instruments.

In fourth chapter the collected data analyzed in detail and presents the findings of the research. Finally, the paper ends up by reaching on conclusions based on the findings and by suggesting relevant recommendations believed to help organizations and future researches.

CHAPTER TWO

Literature review

2.1 Introduction

The quest for quality is probably more widespread and intense globally now than at any time in history. Organizations have realized that the key to increased productivity and profitability is improving quality and in order to survive competition from home and abroad, they are forced to return to the basics of better quality management and cost-competitiveness measures for their products and services (Karthi,2004).

In today's global market, where dealings with international customers and suppliers are the norm, it is not enough for companies simply to launch products or services of high quality in to the market. They must ensure that these meet standards and requirements that assure clients of their reliability. This sophisticated demand has led to our reflection on the importance of implementing a management system that is entirely quality oriented, i.e. a total quality management system. Customers are now much better informed and are increasingly demanding. They confirm whether a product of a particular brand is certified so as to ensure its quality (Quazi *et al.*,2002).

2.2. The Theoretical framework

Quality Management Systems models/awards form the core to many quality professionals. They establish quality criteria in most industries and form the principles on which quality is gauged. They also offer step-by-step practical techniques on how to 'do' quality (Gitlow, 2000). Most salient in the models is the standard of their similarities such as continuous improvement, since the very principles that form each model seem different in wordings but some are the same in many ways. For example, most models identify and stress leadership

involvement in quality processes, customer focus; identifying, gathering and analysis of information to make informed decisions, development of people in the organization, and process management as key principles. But, as we learn, they are the key characteristics that define quality as it is practiced today in many organizations (Bauer, 2006).

2.2.1 Quality management theories

Total Quality Management (TQM) is a quality improvement body of methodologies that are customer- based and service oriented. TQM was first developed in Japan, and then spread in popularity. However, while TQM may refer to a set of customer based practices that intend to improve quality and promote process improvement, there are several different theories at work guiding TQM practices like Ishikawa's theory, Joseph Juran's theory, Deming's theory, Crosby's theory and The European foundation quality management framework (Gitlow, 2000).

2.2.2 History of ISO 9001 QMS Certification

During World War II, there were quality problems in many British explosive industries, where bombs were exploding in factories during assembly. The solution adopted to address these quality problems required factories to document their manufacturing procedures and to prove by record keeping that the procedures were being followed.

The standard was BS 5750, and it was known as a management standard because it specified not what to manufacture, but how the manufacturing process was to be managed. In 1987, the British Government persuaded the International Organization for Standardization (ISO) having member countries more than 180, to adopt BS 5750 as an international standard (Kumara & Balakrishnan, 2011).

The international standard was named ISO 9000 series. ISO 9000:1987 had the same structure as the British Standard BS 5750, with three models for quality management

systems, the selection of which was based on the scope of activities of the organization ISO 9000:1994 emphasized quality assurance via preventive actions, instead of just checking final product, and continued to require evidence of compliance with documented procedures (Kumara & Balakrishnan, 2011). ISO 9001:2000 combined the three standards 9001, 9002, and 9003 into one, called 9001. Design and development procedures are required only if a company engages in the creation of new products.

The 2000 version sought to make a radical change in thinking by placing the concept of process management front and centre ("Process management" was the monitoring and optimizing of a company's tasks and activities, instead of just inspecting the final product). The new ISO 9001:2008 was published on 15 November 2008. ISO 9001:2008 uses the same numbering system as ISO 9001:2000 to organize the standard. As a result, the new ISO 9001:2008 standard looks very much like the 9001:2000. No new requirements have been added. However, some important clarifications and modifications have been made like defining the scope of control on outsourced processes, validation of software, effectiveness of corrective/preventive action, control of external documents, etc (Kumara & Balakrishnan, 2011).

2.3 Quality Management systems

In ISO terms, a quality management system is defined as a “management system which leads and manages the organization from the quality point of view (ISO, 2007). The ISO quality management system, the most popular internationally, entered a new era with the latest (fourth) revision of the 9001 standard in 2008, which is more customer focused than previous versions and also less biased towards the manufacturing sector and thus more generic. It also makes efforts to improve alignment with ISO 14001:2004 environmental standard in order to make the combination easier and more efficient. By December 2010, at least 1,109,905 ISO 9001 certificates had been issued in 178 countries (ISO,2011).

2.4 Quality Management Systems and ISO 9001

QMS is a formalized system that documents the structure, responsibilities, and procedures required to achieve effective results, in the area of quality. According to the requirements of ISO 9001, an organization must develop six quality documented procedures: (1) Control of documents, (2) Control of quality records, (3) Internal audits, (4) Control of non-conformities, (5) Corrective action, and (6) Preventative action.

2.4.1 Document Control

This is a process of making sure that people have maximum access to timely and accurate information to do their job. It is the most basic discipline that must be exercised in any management system (Cochran, 2008). Many people are expected to access vital documents of the organization and therefore, it is important that they are clearly aware on how to handle the organizations' documents (Tricker, 2010).

2.4.2 Record Control

This is a procedure that deals with history of activities or transactions that have taken place in an organization (Cianfrani & West, 2009). A record is a document stating the results achieved or providing evidence of the activities performed (Myhrberg, 2009). Records are important in the review of prior activities for present and future strategic actions. They give assurance that an organization is actually doing what it promised. They are the most believable form of communication (Russell & Arter, 2008). Quality records are essential feature of a quality assurance system but need not to be so extensive and exhaustive (Bolton, 1999). Quality records must be sufficient to demonstrate that all essential processes have been carried out and that all necessary inspections and tests have been undertaken (Bolton, 1999).

2.4.3 Internal Audit

An Audit is a systematic, independent, and a documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria has been fulfilled (Philips, 2009). The objectives of any internal audit system includes; verifying conformance to applicable standards; conformance to documented process; effectiveness of the processes in the system; and identifying opportunities to improve the system (Cochran, 2008). Different organizations have different internal audit systems and thus, any audit system must be structured to the success requirements of the organizations.

2.4.4 Control of Non-conforming products or services

The procedure aims at identifying products or services of the non-conforming nature and do not agree with the market demands or the needs of the customers. The products that do not conform to the specifications are identified by quality control inspection, customer complaints or the internal quality audits. Bolton (1999) notes that a system of possible segregation is necessary to prevent the product or service from being inadvertently used or to prevent the non-conforming service being continued. Whether some courses have been disposed-off, or reformatted and reorganized to conform to the needs of the market as part of continuous quality improvement could be another area of study.

2.4.5 Corrective Actions

It is important for any organization to think of corrective measures in case of non-conformance of its products or services.

The procedure involved matters to help the organization stop the reoccurrence of non-conforming products of services (Hoyle, 2009). Cianfrani and West (2009) refer to this procedure as an action to eliminate the cause of a defected nonconformity or other undesirable situations. Organizations that strive to eliminate the causes of defected nonconformity have a strong internal audit process that identifies these defects for correction

purposes. This assists the continuous improvement process adding value to excellence and competitiveness in the market.

2.4.6 Preventive Actions

These are actions proposed and taken to stop something from occurring (Hoyles, 2009). It is proactive in nature and aims at stopping rework exercises which could cause extra costs and losses to the organization. It is equally important to correction, though it endeavours to eliminate potential nonconformity or other undesirable potential situations (Cianfrani & West, 2009).

2.5 Why Quality Management

Paris (2003) argues that Process based QMS enables the organizations to identify measure, control and improve the various core business processes that will ultimately lead to improved business performance. QMS is a systemic set of management procedures used to monitor, check and improve the organization operative and financial performances, aiming to offer the best product/service at lower costs (Mokamba *et al.*, 2013).

ISO 9001 is an international standard that specifies the basic requirements for a Quality Management System. It further affirms that Quality management system is a powerful tool, which enables every organization to increase quality of products and/or services offered through continuous improvement of processes. It further affirms that QMS is the part of the organization's management system that focuses on the achievements of results, in relation to the quality objectives, to satisfy the needs, expectations and requirements of interested parties, as appropriate (Mokamba *et al.*, 2013).

According to Amyx (2005), when a company has a working QMS, it is able to demonstrate its ability to meet customer and regulatory requirements and to enhance customer satisfaction. To that end, the standard contains key requirements clauses focusing on: (1) the

QMS in general, (2) management responsibility, (3) resource management, (4) product realization, and (5) measurement, analysis, and improvement.

2.6 Benefits from Implementing ISO 9001QMS Standard

The ISO 9001 certification represents a worldwide phenomenon and if this standard is correctly implemented and understood, as opposed to being used just as a marketing and promotional tool, there seem to be significant benefits derived for the organizations that do so both internal and external ones (Sampaio *et al.*,2009).

Amongst the major findings of the study of Wiele *et al.*,(2005) is an overall positive perception of the value of the ISO 9001 standard. Magd (2008) found that the vital benefits derived from implementing the standard were the improved documentation and efficiency of the quality system. Gotzamani *et al.*,(2007) found that the greatest improvements from ISO 9001 certification were the following: establishment of a formal process management system, systematic recording of process performance data and systematic monitoring of internal indicators related to customer satisfaction and demand for quality proofs from partners.

According to the results of the study of Jang and Lin (2008) the implementation of the ISO 9001 standard directly and positively influences operational performance and indirectly affects market performance, which in turn has a positive impact on business performance. Prajog (2008) found that the benefits from ISO 9001 certification were mainly internal rather than external, and these were sustainable over time.

2.7 Quality Management Principles

A quality management principle is a fundamental and all inclusive rule for leading and operating an organization to continuous improvement on customer satisfaction and creation of stakeholders' value (ISO,2012). They include: customer orientation; leadership;

involvement of people; process management; systems management; continual improvement; fact-based decision; and close supplier relationship. The importance of these quality management principles cannot be over-emphasized (Tricker,2002). They have been well reviewed in literature but apparently customer service and assurance is most prominent since the ISO 9001 standard's ultimate goal is customer satisfaction (Evans & Lindsay,2010).

2.7.1 Customer Focus

A quality assured customer is a happy customer and a working QMS should be aimed at exceeding customers' requirements (Hoyles, 2009). This is a customer driven view for quality which creates a sustained organization's competitive advantage through customer loyalty (Tracker & Sherring-Lucas, 2005).

Organizations should understand both the current and future needs of customers since they depend on them. It helps in realizing the customers' needs and requirement and strives to exceed the customers' expectations (Cianfrani & West, 2009). Organization must take into account all product and service features and characteristics that can bring value to customers and lead to customer satisfaction, preference, and future loyalty (Zgodavova & colesca, 2007).

2.7.2 Leadership

Managers must be real leaders. They have to create such environment in organization in which all groups of employees can become fully involved in achievement of the organization objectives (Zgodavova & colesca, 2007). The organizations' leadership establishes unity of purpose and direction. They are expected to create, maintain and sustain an internal environment in which people can become fully involved in achieving the objectives of the organization (Cianfrani & West, 2009).

2.7.3 Involvement of people

The full potential of organization's people is best released through shared values and culture of trust and empowerment that encourages the involvement of everyone. The knowledge of employees is a vital value for every organization and valuing the people means committing to their satisfaction, development and wellbeing (Zgodavova & colesca, 2007).

Their involvement in the implementation of action plans is crucial in developing their abilities to be used in the organization. Their proactive participation promotes the quality (Tricker & Sherring-Lucas, 2005).

2.7.4 Process Approach/Management

This principle is very vital for modern quality management unquestionably. The organization performs more effectively and all results are achieved more efficiently when inter-related activities are managed as a process (Zgodavova & colesca, 2007). The principle examines the logical sequencing of activities to effectively achieve a desired goal (Tracker & Sherring-Lucas, 2005). All activities and resources are managed as a process aimed at giving desired results (Cianfrani & West, 2002). A business process is a collection of activities within the organization. It helps in the understanding of how things are really done and improvement of performance (Carson. *et al.*, 2004).

2.7.5 Systems Approach/Management

This principle is closely linked with process approach. It says that identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving the company objectives (Zgodavova & colesca, 2007). The quality management system is considered as a set of interrelated processes. Managing these processes that form a system is an integral principle of quality (Tracker & Sherring-Lucas, 2005).

2.7.6 Continual Improvement

Every organization always will have a lot of opportunities for next improvement (Zgodavova & colesca, 2007). Quality management is sustained with continuous improvement a review of the workability of all processes and systems to suite the ever changing business environment. It involves constant refining of processes to enable the organization to become more efficient (Tricker & Sherring-Lucas, 2005). It is being committed to the ideal of continuously improving in all parts of the organization (Liker & Franz, 2011). Customer satisfaction is a constantly moving and dynamic entity depending on changes in technology and the market place turbulence, so an effective QMS must be in a condition of continual improvement. For this to be achieved, attention needs to be given to both the voice of the customer through complaint analysis, opinion surveys and regular contacts and the voice of the processes through measurement, monitoring and analysis of both process and product data.

2.7.7 Factual approach to decisions making

Effective decisions are based on the analysis of data and information. It means that managers make a decision on basis of various measurements within the management system (Zgodavova & colesca, 2007). This principle examines the careful analysis of information and consequent making of decisions based on the facts so derived from data. It therefore calls for maintaining useful, factual, complete and accurate data for use in decision making (Tricker & Sherring- Lucas, 2006). Data collected is monitored, measured and analyzed for use to come up with logical decisions based on facts (Carson *et al.*, 2004).

2.7.8 Close Supplier Relationship.

Every organization takes use products and services delivered by its suppliers. And every organization works more effectively when it has mutually beneficial relationships with its suppliers built on trust, sharing knowledge and integration. The supplier ought to be a partner not adversary (Zgodavova & colesca, 2007). The principle examines the mutual benefits

derived from the creation of either strategic alliances or partnerships of value (Tricker & Sherring-Lucas, 2005). The support that the organization mutually receives from suppliers establishes independent, synergetic and quality driven relationships (Imtiaz, 2001). This, in the long-run positions the organization to deal with the challenges that comes with competition. It increases the organization's ability to create value since it ensures early involvement and participation in defining the requirements for joint development and improvement of products, processes and systems. These helps strengthen mutual trust, respect and commitment to customer satisfaction and continual improvement (Kattman & Johnson, 2003).

2.8 Company Performance Measures

Performance measurement is a very essential management tool, because the only way to improve something is to measure it (Salaheldin,2009). When we operate inside a quality management system, the way to perform a measurement is to identify and measure the impact of QMS practices (Koh *et al.*,2007). The objectives to be measured are not only financial but include all the operations and processes needed to perform the tasks of a modern enterprise, otherwise it would be a partial vision of the business situation (Curkovic *et al.*,2000).

Performance measurement is recognized as an important part of the manufacturing strategy and it is suggested that multiple dimensions of company performance be considered where possible, including both financial and non-financial measures (Han *et al.*,2007). Managers should evaluate the results deriving from the implementation of ISO 9001 from a broad perspective, considering not only financial indicators but also the results of other activities that may eventually help them improve the financial results of their companies. This would allow managers to obtain a more global and critical vision of the results achieved (Marin & Ruiz-Olalla,2011).

2.9 ISO 9001 certification and Operations Performance

Terziovski *et al.*,(2007) define operational performance as the performance related to an organization's internal operations, such as productivity, product quality and customer satisfaction. ISO certification is supposed to lead to advantages in the processes of organizations. These benefits include such things as improvement in throughput time, increase in technical flexibility, improvement of co-ordination of activities, improvement in product or service specifications, increase in internal and external delivery performance and

Improvement in efficiency. A company operating within the requirements of the ISO 9001 standards should achieve customer satisfaction as the interactions with customers are improved and reductions in customer complaints are achieved.

2.10 Empirical Review

Various scholars have been arguing on the significant impact of ISO 9001 on the organizational performance. There is evidence which suggests that firms can achieve internal improvements, or that certification can help firms maintain or increase their market share, or both. Others argue that the standard is too generic to cause improvement, but can be seen as a good management tool. An empirical study in the United States by Kirsch and Corbett (2002) analyzed 598 publicly traded firms listed in the New York Stock Exchange and found a direct correlation with a firm's return on assets (ROA). The certified firms improved their performance while the non-certified firms experienced substantial deterioration. They concluded that something changed specifically at the certified firms in the year prior to the actual certification. Given the magnitude of the improvements, it seems likely that other circumstances other than ISO 9001 contributed. However, the findings strongly suggest that the preparation also contributed to superior performance. Another study by Pinar *et al.*,(2003) examined the monthly and average 48 month market returns of sixty seven (67) certified and thirty seven (37) non certified firms listed in the Istanbul Stock Exchange Market (ISE) over

time periods of one-year, two years, and three-years. The results of these different scenarios showed that for all time periods the certified firms had higher mean returns. According to a study carried out in the UK by Casadesus and Jimenez (2000) depicted that among the benefits of ISO Certification include; improvement of market relations, increases the possibility of obtaining new contracts and considerably helps to enter new or international markets. The study carried out in Malaysian ISO 9001 certified manufacturing organizations by Veeri *et al.*,(2008) revealed that QM practices were found to be partially correlated with quality performance of the Malaysian ISO 9001certified manufacturing organizations. It is also found that where customer focus and continual improvement were perceived as dominant QM practices in quality performance. According to a study carried out in Greece ISO 9001 certified manufacturing firms by Kaftezzopoulos *et al.*,(2015) revealed ISO 9001 effectiveness directly contributes to product quality and operational performance. Although it has no direct impact on manufacturing firms' business performance, it has an indirect impact through the moderator of operational performance.

An empirical study in Greece by Psomas *et al.*,(2013) show that the findings of the study confirm the dimensionality of the ISO 9001 effectiveness (evaluated by the degree of achievement of the standard's objectives, namely prevention of nonconformities, continuous improvement and customer satisfaction focus) and reveal its significant contribution to the performance of the companies. The product/service quality and operational performance of the companies are directly and significantly influenced by ISO 9001 effectiveness. However, the financial performance is directly influenced only by operational performance, while the impact of ISO 9001 effectiveness is indirect through its significant correlation with operational performance. An empirical study which carried out in West China on 196 manufacturing and service firms is suggest that quality management practices do not have a positive impact on firms' business performance directly, but have an indirect impact on

business performance mediated by quality performance and R&D performance. Furthermore, the authors find that industrial type can moderate the relationships between quality management practices and business performance (Su-xian *et al.*,2008).

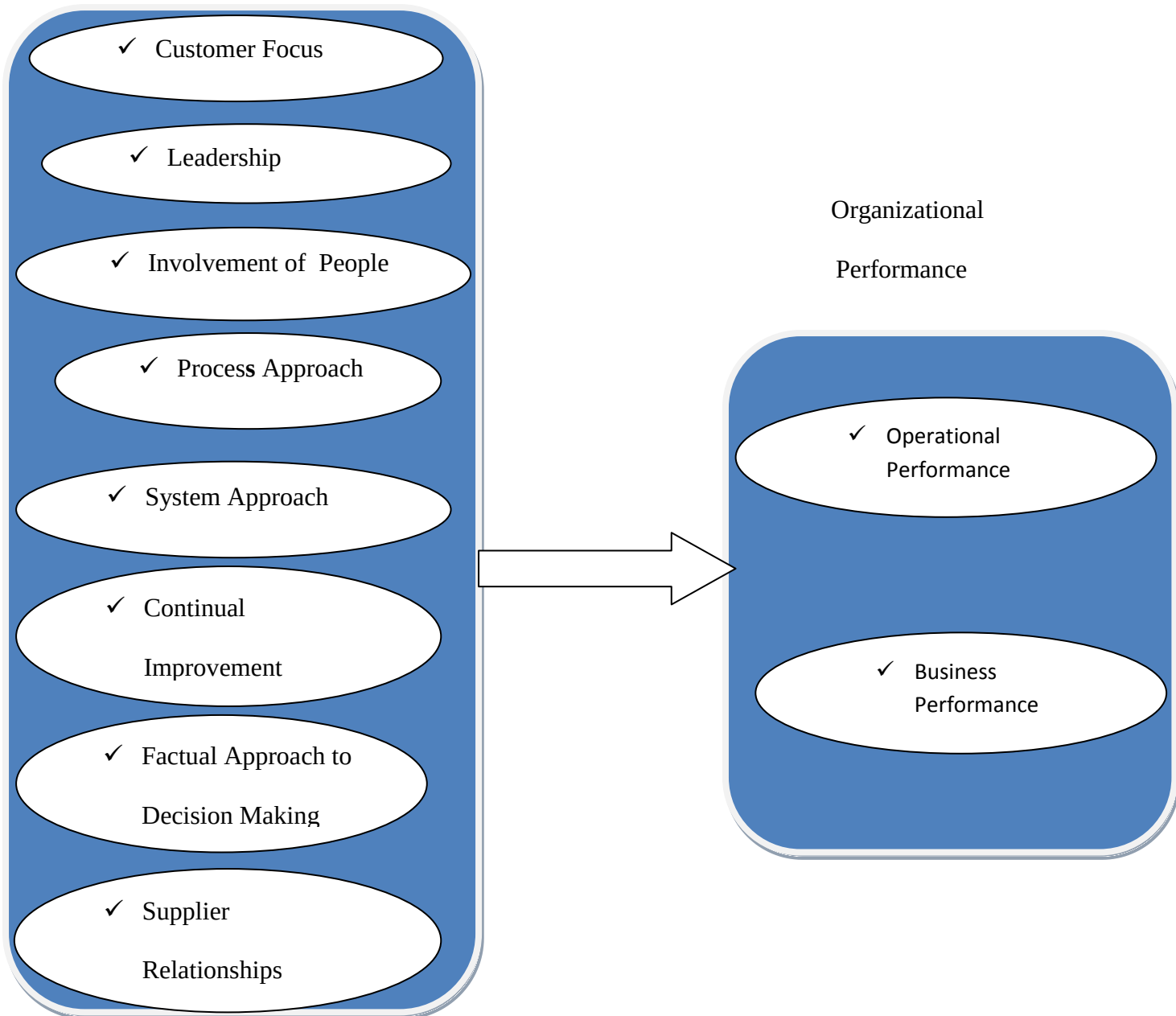
2.11 Conceptual Framework

Quality Management Systems establish quality criteria in most industries and form the principles on which quality is gauged (Gitlow, 2000). ISO 9001 quality management system standard are based on eight quality management principles. The principles are Customer focus, Leadership, Involvement of People, Process Approach, Continual Improvement, Factual Approach to Decision Making and Mutually Beneficial Supplier Relationships. These principles can be used by management as a framework to guide their organizations towards improved performance (ISO, 2012).

Figure 2.1 Conceptual Framework

ISO 9001 Quality Management

Systems Principles.



Source: Researcher conceptualization.

2.12 Hypotheses development

The main objective of the study is to investigate a relationship between ISO 9001:2008 QM practices with organization operational and business performance. This lead to the following hypotheses:

H1: there is strong positive relationship between Customer focus and operational performance.

H1a: there is strong positive relationship between Customer focus and business performance.

H2: there is strong positive relationship between top management (Leadership) and operational performance.

H2a: there is strong positive relationship between top management (Leadership) and business performance.

H3: there is strong positive relationship between Involvement of people and organizational performance.

H3a: there is strong positive relationship between Involvement of people and business performance.

H4: there is strong positive relationship between Process Approach and operational performance.

H4a: there is strong positive relationship between Process Approach and business performance.

H5: there is strong positive relationship between System Approach and operational performance.

H5a: there is strong, positive relationship between System Approach and business performance.

H6: there is strong positive relationship between Continual Improvement and operational performance.

H6a: there is strong positive relationship between Continual Improvement and business performance.

H7: there is strong positive relationship between Factual Approach to Decision Making and operational performance.

H7a: there is strong positive relationship between Factual Approach to Decision Making and business performance.

H8: there is strong positive relationship between supplier relationship and operational performance.

H8a: there is strong positive relationship between Supplier relationship and business performance.

CHAPTER THREE

Research Methodology

3.1 Introduction

The chapter describes an overview of the methods used in the study. Sections and areas covered include the Research design; The Study Population, Sampling and Sampling techniques, data collection and collection instruments, analysis, and presentation.

3.2 Research Design

The study involved the descriptive survey design in investigated the effect of ISO 9001QMS certification on organizational performance. This study design was selected because it explores the effect of the independent variable on the dependent variables. It also allows details to be secured from multiple sources of information and evidence to be verified through in depth searching (Cooper & Emory,1996).

3.3 Data Type and Source

Primary and secondary data about (ISO 9001) Quality Management Practice and organization performance (operational performance and business performance) were collected from the firms' and their customers. From the firm's side departmental managers, supervisors, team leaders and employee in quality control section had been the primary data source. Financial report of the company's had been used as a secondary data source. From customer side wholesalers and organizations in Adama town that used the output of those firms as an input had been primary data source.

3.4 Target population and Sampling Techniques

To test the hypotheses, the researcher collected data from two chemicals and chemicals products producing firms and to triangulate the finding the researcher also collected data from the customers of the two firms in Adama city.

For data collection, sampling was executed using the non-probability sampling technique. Purposive sampling techniques were used to select firms for the study. The criterion for selecting the companies that would participated in the research was the certification to the ISO 9001:2008 standard. Purposive sampling technique was also used to select staffs that are directly related with the topic investigated. For customers selection convenience sampling techniques was used, this is due to difficulty to include the whole customers and inconvenient accessibility of the customers to the researcher.

The researcher used a method developed by Carvalho (1984), as cited in Malhorta Naresh, K. (2007) to determine the sample size.

Table 3.1 Sample size Determination;

Population Size	Sample size		
	Low	Medium	High
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1200	32	80	125
1201-3200	50	125	200
3021-10,000	80	200	315

Based on the above sample size determination method the researcher selected the following Sample size.

Table 3.2 Target population and sample size of Bekas plc.

No	Staff position and customers	No. of staff and customers	Sample size
1	Departmental Managers	9	5
2	Supervisors	5	3
3	Team leaders	6	3
4	Employee in quality control section	4	2
5	Customers (wholesalers)	40	17
	Total	64	30

Source: Researcher survey (May, 2015)

Table 3.3 Target population and sample size of Awash Melkassa Aluminium Sulphate and Sulphuric Acid S.C

No	Staff position and customers	No. of staff and customers	Sample size
1	Departmental Managers	11	6
2	Supervisors	7	4
3	Team leaders	14	7
4	Employee in quality control section	6	2
5	Customers (organizations)	20	10
	Total	58	29

Source: Researcher survey (May, 2015)

3.5 Methods of Data Collection and Instrument Development

A six page survey questionnaire contain a total of 42 questions for staffs and two page questionnaire that contain a total of 10 questions for customer was designed. Almost all measures were developed following a comprehensive literature review. Then the survey instrument was pilot tested on 10 expertises in manufacturing sector in Adama, proving its appropriateness and achieving the content validity of the constructs. All questions for staff and customers were on a five-point Likert scale. Further document review was employed to assess firms' financial report.

3.6 Operationalization of Variables

The independent variable in this study is ISO 9001:2008 quality management practice and the dependent variable is organizational performance. The effect of ISO 9001:2008 QMPs on organizational performance was measured using the Likert scale of 1-5 in close ended questions to the respondents. Organisational performance was measured in the two dimensions for the purpose of this study, namely operational performance (product quality and customer satisfactions) and business performance (profitability)

- ISO 9001:2008: is the world foremost quality management standard, used by hundreds of thousands of organizations in over 170 countries around the globe. It sets out the essential requirements for a practical and effective quality management system which is, in essence, a system for minimizing risk and maximizing opportunity (ISO,2008).
- Operational performance: is the performance related to an organization's internal operations, such as productivity, product quality and customer satisfaction (Terziovski *et al.*,2007)
- Business performance: performance related to company sales growth, profitability, net profit margin and financial results (Kafetzopoulos *et al.*,2015).

3.7 Validity Analysis

Content validity has to do with items apparent to measure what they claim to. All measures in this study were developed from the existed literature. In addition, the questionnaires were under discussions with practicing managers and academicians. So the content validity of the instrument is ensured in this way.

3.8 Reliability Analysis

Reliability refers to whether the measuring instrument, in this case the questionnaire, measures what it was intended to measure (Leedy, 1997). In order to ensure the reliability of instrument, the researcher conducted a pilot test on 10 experts on the area. The scale of Cronbach's coefficient alpha value is the most widely used statistics to determine the reliability of the measurement. The value of Cronbach's alpha for each construct is above 0.70, which means that the constructs were reliable for measure the intended purpose. It is generally recommended that if a measurement scale having a Cronbach's coefficient above 0.70 is acceptable as an internally consistent scale so that further analysis can be possible.

3.9 Methods of Data Analysis

The collected data were organized in a way suitable for analysis using computer software. A descriptive and inferential statistics method of data analysis was employed using Statistical Package for Social Studies (SPSS) version 20.0. Descriptive statistics (Frequency and Mean) were used in order to determine the degree to which the quality management practices are practiced. Inferential statistics, (Spearman's rho correlation as a non-parametric measure of relationship) analysis were used to test the relationships proposed in the conceptual framework and multiple linear regression analysis were used to identify the most contributory variables of this relationship. Correlation analysis is primarily concerned with finding out whether a relationship exists and its magnitude and direction while multiple regression find out the most contributory of the relationship between the variables (Hair *et al.*, 1998).

CHAPTER FOUR

4. Data Analysis and Interpretation

4.1 Introduction

In this part of the paper detail discussion and analysis of the study finding are presented. First, the demographic information describing the participants is presented in table. Then, it is followed by the presentation, analysis and interpretation of the Likert scale questionnaire. The statistical program used for the analysis of this part is the Statistical Package for the Social Sciences (SPSS) version 20.

4.2 Demographic Overview of Respondents (Staff)

This section begins with an analysis of the background or biographical data gathered from respondents. From the total of 34 questionnaires distributed to the Departmental managers, supervisors, team leader and employee in quality control section of the two companies, only 32 were completed and returned the questionnaire during the data collection period. Other two respondents did not fill and return the questionnaire on time. So the valid number of respondents in this study is taken as N=32. Thus, the background or biographical profile of the respondents which is considered crucial for this study is presented as follows:

4.2.1 Gender

The respondents were asked to indicate their gender. The results in the table below show that majority of the respondent were male 93.8% while female were 6.3% this implying that most of the respondents were male.

Table 4.1 Gender;

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	30	93.8	93.8	93.8
Female	2	6.3	6.3	100.0
Total	32	100.0	100.0	

Source: Researcher survey (May, 2015)

4.2.2. Educational Background

Table 4.2. Educational background;

	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma	1	3.1	3.1	3.1
Degree	24	75.0	75.0	78.1
Above	7	21.9	21.9	100.0
Valid Total	32	100.0	100.0	

Source: Researcher Survey (May, 2015)

The results indicate that majority of the respondents (75%) were bachelor degree holders, (21.9%) of the respondents above bachelor degree and the remaining (3.1%) of the respondents were diploma. This shows that almost all respondents were capable to understand and implement the standard.

4.2.3 Job position

The respondents were asked to indicate their job position. The results are shown in table below;

Table 4.3. Job position;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employee in quality control section	4	12.5	12.5	12.5
	Team leader	10	31.3	31.3	43.8
	supervisor	7	21.9	21.9	65.6
	Departmental Manager	11	34.4	34.4	100.0
	Total	32	100.0	100.0	

Source: Researcher Survey (May, 2015)

The results indicate that 34.4 % of the respondents were departmental manager, 31.3% of the respondents were team leader, and 21.9 % were supervisor while the remaining 12.5% of the respondents were employee in quality control section. This shows that almost all respondents were valid respondents because; at positions they expected to be well trained and practice quality management system in their daily task.

4.2.4 Work experience

Table 4.4 Work experience;

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 5 years	4	12.5	12.5	12.5
	6-10 years	17	53.1	53.1	65.6
	11-15 years	4	12.5	12.5	78.1
	16-20 years	5	15.6	15.6	93.8
	Above 21 years	2	6.3	6.3	100.0
	Total	32	100.0	100.0	

Source: Researcher Survey (May, 2015)

The results indicate that majority of the respondents (53.1%) had worked for their organization for 6-10 years, (15.6 %) had worked for 16-20 years, (12.5 %) had worked for

11-15 years, (12.5%) had worked for less than 5 years, and the remaining 6.3 % had worked for above 21 years. This confirms that majority of respondents have well understood about the effect of quality management practice in their organization before and after implementation.

4.3 Descriptive and Inferential Analysis

4.3.1 ISO 9001:2008 Quality Management Practices (QMPs)

The tables below illustrate the responses with regard to each of the variables of ISO 9001QM practice that were considered in this study.

Table 4.5. The mean Summary of the quality management practice.

ISO 9001:2008 QMPs	N	Mean	Std. Deviation
CF (Customer focus)	32	4.2969	.42804
LS (Leadership)	32	4.2344	.52339
PI (Involvement of people)	32	4.1172	.63812
PA (Process approach)	32	4.1953	.52645
CI (Continual improvement)	32	3.6875	.99596
FA (Factual approach)	32	4.0000	.59229
SR (Supplier relationship)	32	3.7969	.87859
Valid N (list wise)	32		

Source: Researcher Survey (May, 2015)

The table 4.5 shows the results of descriptive Statistics of QM practice which is the independent variable on this study. The results indicated the mean of the QM practice in the organization ranged from (3.68) to (4.29). Customer focus (CF) has the highest mean (4.29) while continual improvement (CI) has the lowest mean (3.8478). The means of all variables in the study above the scale midpoint which is most respondents share similar opinions about the practice of the quality management system in the organizations.

4.3.2 Reliability Test

Table 4.6 Summary of the Measurement Reliability (Cronbach's Alpha)

No	QMPs Variable	Cronbach's Alpha
1	Customer Focus	0.799
2	Leadership	0.765
3	Involvement of People	0.820
4	Process Approach	0.713
5	System Approach	0.763
6	Continual Improvement	0.886
7	Factual Approach to Decision making	0.813
8	Mutually Beneficial Supplier Relationship	0.817
9	Product Quality	0.782
10	Profitability	0.942

Reliability is a fundamental issue in any measurement scale. It is usually measured by internal consistency that indicates the homogeneity of items comprising a measurement scale. The internal consistency of a measurement scale is usually assessed by using Cronbach's coefficient alpha. It is generally recommended that if a measurement scale having a Cronbach's coefficient above 0.70 is acceptable as an internally consistent scale so that further analysis can be possible. Since alpha value is above 0.7, the study instruments yielded fairly reliable data for this research.

4.3.3 Correlation Analysis

The major statistical measure of the relationship is the correlation coefficient. Correlation analysis is primarily concerned with finding out whether a relationship exists and with determining its magnitude and direction (Hair *et al.*, 1998). Correlation coefficient, r , can take a range of values from +1 to -1. A value of 0 indicates that there is no association

between the two variables. As cited in Wong and Hiew (2005) the correlation coefficient value (r) range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. The researcher conducted hypothesis testing using Spearman's rho correlation.

4.3.3.1 Relationship Between ISO 9001:2008 Quality Management Practice (QMPs) And Operational Performance (OP).

Table 4.7. Correlation between (QMPs) and Operational performance (OP).

Correlations			
QMPs			OP
Spearman's rho	CF	Correlation Coefficient	.729**
		Sig. (2-tailed)	.000
		N	32
	LS	Correlation Coefficient	.580**
		Sig. (2-tailed)	.001
		N	32
	IP	Correlation Coefficient	.692**
		Sig. (2-tailed)	.000
		N	32
	PA	Correlation Coefficient	.690**
		Sig. (2-tailed)	.000
		N	32
	SA	Correlation Coefficient	.809**
		Sig. (2-tailed)	.000
		N	32
	CI	Correlation Coefficient	.788**
		Sig. (2-tailed)	.000
		N	32
	FA	Correlation Coefficient	.706**
		Sig. (2-tailed)	.000
		N	32
	SR	Correlation Coefficient	.692**
		Sig. (2-tailed)	.000
		N	32

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

As results indicated in table 4.7 the correlation of ISO 9001 quality management practice with the operational performance are Strong and positive relation at 99% confidence level. This shows that with the implementation of ISO 9001 quality management system there is an improvement in operational performance. In depth analysis depicts the existence of a Strong and positive relation between the variables, because the correlation for all variables fall in the range $0.5 < r < 0.809$ which is highly strong relation. According to Wong and Hiew (2005) the correlation coefficient value (r) range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. The correlation values of customer focus (0.729), leadership (0.580), involvement of people (0.692), process approach (0.690), system approach (0.809), continual improvement (0.788), factual approach to decision making (0.706), and supplier relationship (0.962) with operational performance. The highest coefficient of correlation in this study is 0.809, which is below the cut-off of 0.90 for the collinearity problem. So the result of the correlation analysis, therefore, supported all the hypothesized (H1, H2, H3, H4, H5, H6, H7, and H8) relationships between ISO9001QMPs with Operational performance.

The study findings are consistent with the empirical research findings of Psomas *et al.*, (2013) The operational performance of the companies are directly and significantly influenced by ISO 9001 effectiveness. The study carried out by Naveh and Marcus (2005) present empirical evidence of the positive effect of ISO 9001 on operational performance However, the study findings is inconsistent with the finding with Costa and Lorente (2007) indicate that operational costs increased and the sales did not give back the increased costs due to which company's operational performance worsened after ISO 9001 certification.

4.3.3.2 Relationship Between ISO 9001:2008 Quality Management Practice (QMPs) And Business Performance (BP).

Table 4.8 Correlation for QMPs with Business performance (BP).

Correlations			
QMPs			BP
Spearman's rho	CF	Correlation Coefficient	.037
		Sig. (2-tailed)	.840
		N	32
	LS	Correlation Coefficient	-.136
		Sig. (2-tailed)	.459
		N	32
	IP	Correlation Coefficient	.245
		Sig. (2-tailed)	.176
		N	32
	PA	Correlation Coefficient	.096
		Sig. (2-tailed)	.599
		N	32
	SA	Correlation Coefficient	.315
		Sig. (2-tailed)	.079
		N	32
	CI	Correlation Coefficient	-.054
		Sig. (2-tailed)	.769
		N	32
	FA	Correlation Coefficient	.093
		Sig. (2-tailed)	.615
		N	32
	SR	Correlation Coefficient	.094
		Sig. (2-tailed)	.608
		N	32

The results of correlation analysis in the above table indicate that majority of ISO 9001 quality management practice has a weak positive relationship with organization business performance.

Powell (1995) Used statistic methods to verify the relationship between QMPs and business performance, and found that QMPs are statistically positively related to business performance, but the relation is very weak. The detail analysis show that there is a weak positive relation which range $0.037 < r < 0.315$. According to Wong and Hiew (2005) the correlation coefficient value (r) range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. The correlation values of customer focus (0.037), leadership (-0.136), involvement of people (0.245), process approach (0.096), system approach (0.315), continual improvement (-0.054), factual approach to decision making (0.093), and supplier relationship (0.094) with business performance. So the result of the correlation analysis, therefore, not supported all the hypothesized (H1A, H2A, H3A, H4A, H5A, H6A, H7A, and H8A) relationships between ISO 9001QMPs with business performance.

This study findings are consistent with the empirical research findings of Su-Xian *et al.*, (2008) ISO9001 quality management practices do not have a strong positive impact on firms' business performance directly, but have an indirect impact on business performance mediated by quality performance and R&D performance. Kafetzopoulos *et al.*, (2015) an empirical research on ISO 9001 effectiveness indicate that ISO 9001 QMPs directly contributes to operational performance. Although it has no direct impact on manufacturing firms' business performance, it has an indirect impact through the moderator of operational performance.

However, this study findings are inconsistent with a study by Han *et al.*, (2007) Measure the effect of ISO 9001 on business performance by studying two performance measures; profit and market share. ISO 9001 has positive relation with business performance. After implementing the ISO 9001 standard companies have raised sales, which resulted in higher profit.

4.4 Customer Satisfaction Analysis

To triangulate the above finding and to reduce the subjectivity nature of the study the researcher made an independent survey on both company's (Bekas chemicals plc and Awash melkassa Aluminium sulphate and Sulphuric Acid S.C) customers to assess their satisfactions level and farther analyzed the organization's annual financial report.

The respondents (customers) were asked to indicate their present satisfactions level on the company's activities comparing with, before ISO 9001 QMS certification. The results are shown in the table below:

Table 4.9 Customer Satisfaction;

ITEMS	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
RE_DV (Delivery performance)	27	2.00	5.00	3.9630	.83119
RE_PQ (Product quality)	27	3.25	5.00	4.5833	.44398
RE_RSP (Responsiveness)	27	3.00	5.00	4.2407	.57797
RE_PRF (Professionalism)	27	2.00	5.00	4.2963	.73719
Valid N (list wise)	27				

Source: Researcher Survey (May, 2015)

The table above shows the summary results of descriptive Statistics of customer satisfaction level. The first construct (RE_VE) that hold two question is delivery performance of the organizations. The result show the mean of the (RE_VE) is 3.963 which are very closer to the scale four on the questionnaire (or Good scale). This indicates the degree of customer's satisfactions towards delivery performance is good after the company's being ISO certified. Considering that a faster response to the customer demands, as a result of improvements in the processes associated with customers, is of the results of ISO 9001 (Karapetrivic et al.,2010). As Motwani and Kumar (1994) claimed, the implementation of an ISO 9001

quality management system will lead to a faster supply (shorter delivery time); thereby, there will be fewer customer complaints.

The second construct (RE_PQ) that hold four question is product quality. The mean value is 4.5833 which show majority of the respondent (customers) confirms the good quality of that organization product after being certified. Carlsson and Carlsson(1996) claimed that the implementation of ISO 9001 improves the product quality, reduces waste, and increases the product efficiency.

The third construct to assess customer satisfaction is responsiveness (RE_RSP) that hold two question. The mean value is 4.2407. The mean value indicate how well the respondent are satisfied on the organization responsiveness after the company's being ISO certified. Improvement of responsiveness to customer complaints has been proven to be the main positive change observed in the performance of companies with ISO 9001(Mathews,2005).

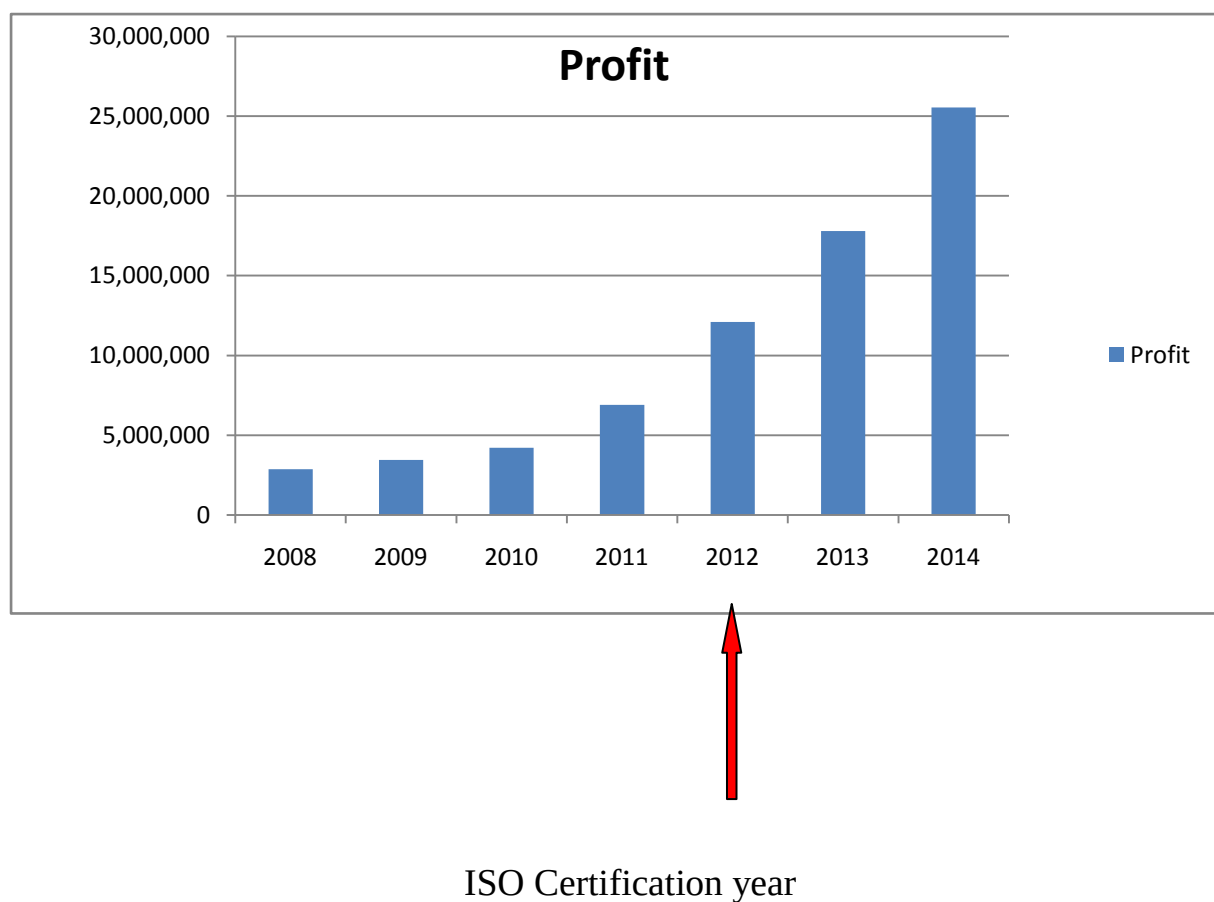
The fourth construct (RE_PRF) that hold two question is professionalism. The mean value is 4.2963. As the mean value indicate the customer satisfactions rate on company's professionalism in dealing with customers is good after being certification. Training sales department staff, providing clear price lists and personal and telephone contact with customers, creating a web site, attending fairs to introduce products and make direct contact with customers, designing and sending the product samples and presenting full details about products and accountability to the customers were the measures determined and implemented in the form of an ISO 9001 quality management system (ISO,2012).

Therefore, the above analysis indicates that the implementation of ISO 9001 quality management system has a positive effect to meet the customers need

4.5 Profitability Analysis

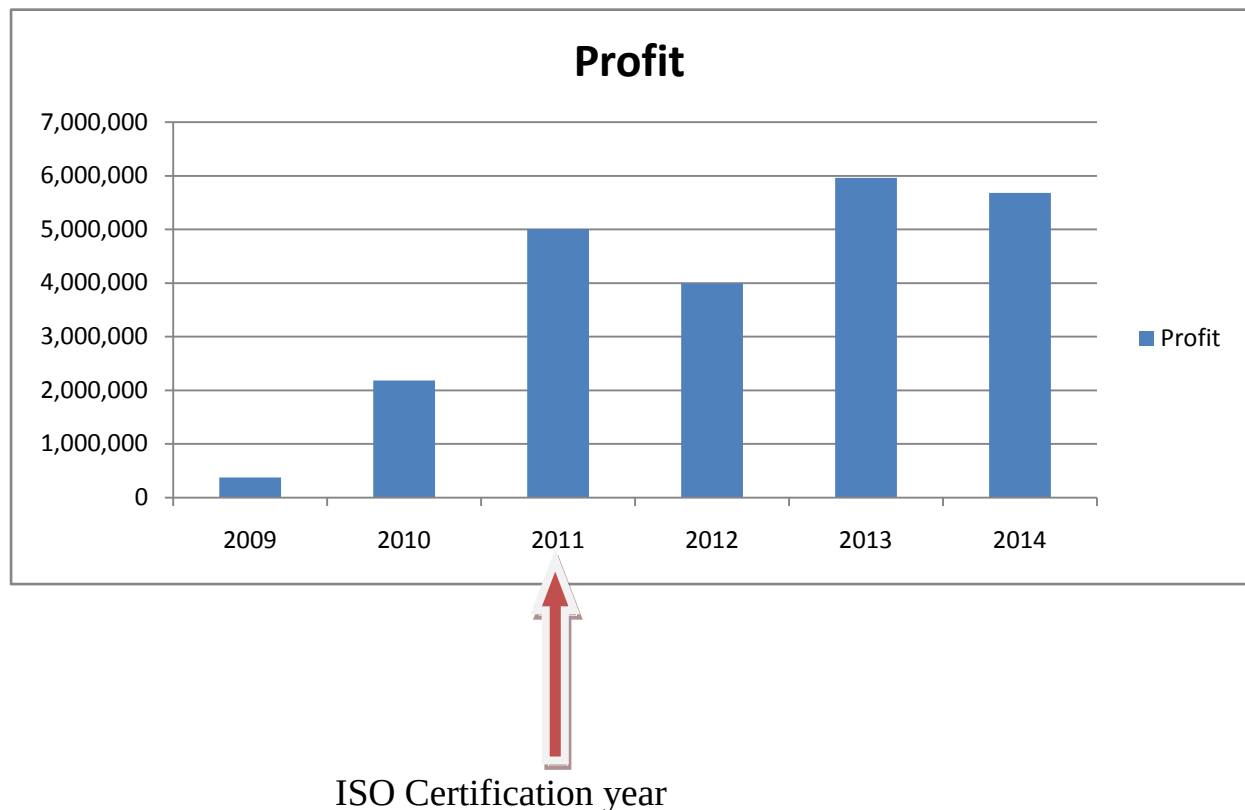
Again to triangulate the above finding and to see the effect of ISO9001 from different perspective the researcher made a profitability analysis on both company's (Bekas chemicals plc and Awash melkassa Aluminium sulphate and Sulphuric Acid S.C).

Figure 4.1 Distribution of Profit of Bekas chemicals plc over the years 2008 to 2014.



The company profit before and after certified has a tangible difference. In the years following certification, the profit of the company have boosted than before. This finding is in line with the studies of Kafetzopoulos *et al.*,(2015). ISO 9001 effectiveness directly contributes to operational performance. Although it has no direct impact on manufacturing firms' business performance, it has an indirect impact through the moderator of operational performance.

Figure 4.2 Distribution of Profit of Awash Melkassa Aluminium Sulphate and Sulphuric Acid S.C over the years 2009 to 2014.



When compare the profit of the company taking before and after certification shows an improvement after being certified especially, experienced a higher profit in those two years following the first year of certification.

4.6 Relationship Between ISO 9001:2008 Quality Management Practice (QMPs) and Organizational Performance (ORP).

The researcher after analyzed the relationship between ISO 9001:2008 with organizational performance from two different angle (Operational and Business) separately; now what seems together as organizational performance is analyzed. The researcher believed that analyzing the effect of ISO 9001:2008 QMPs with organizational performance as a whole helps to get a full vision about the standard.

Table 4.10 Correlation between ISO 9001:2008 QMPs and Organizational performance (ORP).

Correlations

QMPs		ORP
Spearman's rho	Correlation Coefficient	.699**
	CF Sig. (2-tailed)	.000
	N	32
	Correlation Coefficient	.473**
	LS Sig. (2-tailed)	.006
	N	32
	Correlation Coefficient	.685**
	PI Sig. (2-tailed)	.000
	N	32
	Correlation Coefficient	.630**
	PA Sig. (2-tailed)	.000
	N	32
	Correlation Coefficient	.831**
	SA Sig. (2-tailed)	.000
	N	32
	Correlation Coefficient	.672**
	CI Sig. (2-tailed)	.000
	N	32
	Correlation Coefficient	.630**
	FA Sig. (2-tailed)	.000
	N	32
	Correlation Coefficient	.627**
	SR Sig. (2-tailed)	.000
	N	32

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

The results of correlation analysis in the table above indicate that ISO 9001 quality management practice has a strong positive relationship with organizational performance. From the result we can understand that with the implementation of ISO 9001 quality management system there is an improvement in organizational performance.

The results of correlations indicated the existence of the relationship between the variables but did not identify the most crucial variables for this relationship.

4.6.1 Multiple Regressions Analysis

In order to know the most contributory of the relationship between the variables, the multiple regressions was conducted. Hair *et al.* (1998) described the multiple regressions as a statistical technique to predict the variance in a single dependent variable caused by the effect of more than one independent variable. In other words, correlation indicates to the existence of the relationship between the variables while the multiple regressions specify the most crucial variables for this relationship. Stepwise Multiple Regression analysis was used to determine the importance of each independent variable and its contribution to the mathematical model.

Table 4.11 Model summary;

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.721 ^a	.520	.504	.22810
2	.787 ^b	.619	.593	.20661

a. Predictors: (Constant), PI

b. Predictors: (Constant), PI, CF

The variation in organizational performance due to each independent variable is explained through regression. The summary table above revealed that the R² value of 0.619 indicates that the two independent variable which are involvement of people and customer focus can explain 61.9% of the variance on the Organizational performance which is a dependent variable. The finding is partially related with the finding of Veeri *et al.*,(2008) found that where customer focus and continual improvement were perceived as dominant ISO 9001QM practices.

Table 4.12 QMPs Coefficients:

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.382	.267		8.910	.000
	PI	.366	.064	.721	5.701	.000
	(Constant)	1.571	.382		4.118	.000
2	PI	.282	.066	.555	4.284	.000
	CF	.270	.098	.356	2.751	.010

a. Dependent Variable: ORP

The coefficients table showed the independent variables that were found to highly contribute to this relationship were two out of the eight of the QMPs variables which had significant relationships with organizational performance at 99% confidence. These two variables are Involvement of People, and Customer Focus.

CHAPTER FIVE

Summary, Conclusion and Recommendation

This chapter will present major finding of this study, theoretical and managerial implication as well as recommendation for further study also included.

5.1. Summary and Conclusion

This study was conducted in two Chemicals and chemicals products producing firms to investigate the relationship between ISO 9001:2008 quality management practices (QMPs) and organizational performance. In order to answer the hypothesis, the eight ISO 9001:2008 quality management principle (Customer focus, Leadership, Involvement of people, Process approach, System approach, Continual improvement, Factual approach to decision making and supplier relationship) are taken as independent variable and operational performance and business performance as dependent variable.

- In response to the hypothesis, the finding indicates that ISO 9001:2008 QMPs (Customer focus, Leadership, Involvement of people, Process approach, System approach, Continual improvement, Factual approach to decision making and supplier relationship) has a strong positive relationship with operational performance.
- On the other hand ISO 9001:2008 QMPs (Customer focus, Leadership, Involvement of people, Process approach, System approach, Continual improvement, Factual approach to decision making and supplier relationship) has no strong positive relationship with business performance.
- In addition to examine the associated between QMPs with operational and business performance, this study investigates the relationship between ISO9001:2008 QMPs with organizational performance as a whole which helps to have to a full vision. ISO 9001:2008 has a strong positive relationship with organizational performance. From the eight construct

of QMPs (Involvement of people, customer focus) can explain 61.9% of the variance on the Organizational performance as a dependent variable.

- In conclusion, the central finding of this study is that ISO 9001:2008 QMPs has a strong positive relation with operational performance, but has no strong positive relation with business performance. So that ISO 9001:2008 practice plays a vital role in boosting the operational performance of the organization if implemented properly. The ISO 9001 certification represents a worldwide phenomenon and if this standard is correctly implemented and understood, as opposed to being used just as a marketing and promotional tool, there seem to be significant benefits derived for the organizations.

5.2 Implication for Theory and Managers

The findings of this study contributed to both theoretical and managerial perspectives. From the theoretical standpoint, the results gained from this study is consistent with the literature which supported ISO 9001:2008 QMPs enhance operational performance directly but not for business performance. This study by providing empirical evidence throwing in enrichment the body of knowledge about the ISO9001:2008 QMS. Customer focus and involvement of people are two major quality management practices that influenced the organization performance as a whole. The findings obtained from this study further strengthened and supported the relevancy of ISO9001:2008 QMS to enhance organizational performance.

From the managerial perspective, the findings obtained from this research provide valuable knowledge in quality management practice from ISO 9001:2008 certifications perspective. In this study, customer focus and involvement of people practices are found to be the key determinants contributing to organizational performance as a whole. Hence, it is recommended that managers of ISO 9001:2008 certified organizations should maintain a high level of customer focus and involvement of people practices in their organizations.

The study could also be used to shed light on the importance of acquiring the certification and developing a quality culture. If an organization that are not currently using a quality management system is enlightened by this study to acquire the certificate and proper implementation.

5.3 Recommendations for Future Research

Like any other study, this study has some limitations. First, the sample firms' could be more extensive to make the results more generalized. More meaningful conclusions can be got by involving a number of firms in to the study. Second, the study does not examine other performance measures such as total productivity, cost of quality, market share etc that can explain organizational performance in detail. Finally the survey data were cross sectional. Though relationships can be inferred from these data, longitudinal research would be necessary to test the causality.

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<http://www.oxebridge.com/news.asp>(Feb. 12, 2015)

Appendixes

Appendixes A: Survey Questionnaires

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF MANAGEMENT

QUESTIONNAIRE

To be filled by: staff

Dear Respondent

I am Firew Adugna an MBA (Masters of Business Administration) student at Adama science and technology University carrying out a survey on "The effect of ISO 9001 Quality Management Systems certification on the performance of chemicals industries". You are selected for this survey and in this regard, I would like to ask for your help by answering questions.

All responses and data collected will be treated with strict confidentiality and will not be used for other purpose(s) other than stated. So, I urge you to your utmost belief and to the best of your knowledge to the items listed below without any reservation. I look forward to carrying out this study in the appropriate time with your auspicious support.

Thank you,

Yours faithfully

Section A: Staff background

This section of the questionnaire refers to background or biographical information about the staff.

1. What is your Gender?

Male:

Female:

3. Educational background?

Certificate:

Diploma:

1st Degree:

Above:

4. What is your position?

Employee:

Team leader:

Supervisor:

Manager:

5. How many years have you worked at the company?

years	Below 5	6-10	11-15	16-20	Above21
Please tick	☐	☐	☐	☐	☐

Section B: Independent variables

Compared with “before ISO certification ”, this is how I feel about the present status of the company. Please indicate the extent to which you agree or disagree with the following statements.

No	Independent variables (Quality management principle)	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
		1	2	3	4	5
	Customer focus					
1	The organization assesses customer needs.					
2	The organization publicises customer needs to all employees.					
3	The organization measures customer satisfaction periodically.					
4	The organization acts on customer complaints/feedback.					
	Leadership					
5	Management establishes a clear vision of the organization.					
6	Management set challenging targets throughout the organization.					
7	Management providing people with required training.					
8	Management creates shared values at all levels.					

	People involvement					
9	Employee understanding their role in the organization.					
10	Employee accepts responsibility for solving problems.					
11	Employee seeks opportunities to improve their competence.					
12	Employees share knowledge openly.					
	Process approach					
13	The organization systematically defines the activities necessary to obtain desired results.					
14	The organization appoints the process owners for all processes.					
15	The organization defines key processes against suitable criteria.					
16	The organization measure and monitor process performance.					
	System approach to management					
17	The organization has a structured approach that integrates processes.					
18	The organization tries to reduce cross-functional barriers.					
19	The organization continually improves the system through measurement and evaluation.					
	Continual improvement					

20	The organization discovers all weaknesses throughout the organization.					
21	The organization releases all resources for the improvement.					
22	The top management create an environment for inventions.					
23	Rewarded people for their successes.					
	Factual approach to decisions making					
24	The organization has a system to ensure that data and information are accurate and reliable.					
25	The organization collects all data from processes needed for decisions making.					
26	The organization makes data accessible to those who need it.					
27	The organization analyses data and information using valid scientific methods.					
	Mutually beneficial supplier relationship					
28	The organization has key suppliers.					
29	The organization shares information with key suppliers.					
30	The organization encourages key suppliers to participate in new product development.					
31	The organization rewards suppliers' contributions.					

Section c: Dependent variable

Compared with “before ISO certification performance”, this is how I feel about the company performance after certification. Please indicate the extent to which you agree or disagree with the following statements.

	Dependent variable	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
	Product quality					
1	Decrease customer complains.					
2	Decrease waste and rework jobs.					
3	Remove potential causes of nonconforming products.					
4	Remove potential causes of nonconforming products.					
5	Better product's perceived quality compared with that of competitors.					
	Customer satisfaction					
6	The organization information is increased with regard to customer needs.					
7	The organization focus on customer needs is increased.					
8	The organization activities increased the level of customer satisfaction.					
9	Better relationship between the organization and customers.					
	Profitability					
10	Increase organisation profit for being certified.					
11	Increase organisation profit margin.					

ADAMA SCIENCE AND TECHNOLOGY UNIVERSITY

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF MANAGEMENT

QUESTIONNAIRE

To be filled by: customers

Dear Respondent

I am Firew Adugna an MBA (Masters of Business Administration) student at Adama science and Technology University carrying out a survey on "The effect of ISO 9001 Quality Management Systems certification on the performance of chemicals industries". You are selected for this survey and in this regard, I would like to ask for your help by answering questions.

All responses and data collected will be treated with strict confidentiality and will not be used for other purpose(s) other than stated. So, I urge you to your utmost belief and to the best of your knowledge to the items listed below without any reservation. I look forward to carrying out this study in the appropriate time with your auspicious support.

Thank you,

Yours faithfully

Section A: Customer satisfaction

Awash Melkassa Aluminium sulphate and sulphuric Acid S.C is ISO 9001 quality management system certified firm in 2011. So, Compared with "before and after ISO certification" how do you rate your degree of satisfaction after certification?

Please tick the appropriate box to indicate your degree of satisfaction.

Where: 1 = Very Poor, 2 = Poor 3 = Satisfactory, 4= Good, 5 = Excellent

አዋሽ መልካሳ አልሙኒየም ሰልፌት እና ሰልፈሪክ አሲድ አ.ማ ISO 9001 የጥራት ሥራ አመራርን ከ2011 እንደ አውሮፓን አቆጣጠር ጀምሮ በመተግበር ላይ ይገኛል ስለዚህ ከ2011 በፊት የነበረውን ከ2011 በዋላ ካለው አሰራር ጋር በማነጻጸር የዕርካታ ደረጃዎችን ይገምግሙ

1, በጣም ደካማ 2, ደካማ 3, ዕርካ 4, ጥሩ 5, በጣም ጥሩ

No	Customer satisfaction Evaluation Point የደንበኞች እርካ መለኪያ ነጥብ	Very Poor	Poor	Satisfactory	Good	Excellent
		1 በጣም ደካማ	2 ደካማ	3 ዕርካ	4 ጥሩ	5 በጣም ጥሩ
	DELIVERY					
1	How do you rate delivery on time performance of the company? በወቅቱ ለማስረከብ ብቃት					
2	How do you rate delivering capacity according to customer order? በደንበኛ ጥያቄ መሰረት የምርት አቅርቦት ብቃት					
	PRODUCT QUALITY:					
3	How do you rate product's general performance?					

	የምርቱ ተገቢውን አገልግት የመስጠት ብቃት					
4	How do you rate packaging strength? የምርት ብቃት ያለመለዋወጥ ወይም ውጥነት					
5	How do you rate packaging strength? የምርት የማሸጊያ ጥንካሬ					
6	How do you measure product's perceived quality compared with that of competitors? የምርት ጥራት ከሌሎች ተወዳዳሪ ምርቶች ጋር ሲነጻጸር					
	RESPONSIVENESS:					
7	How do you rate information exchange effectiveness between the company and customers? በድርጅቱና በደንበኞች መካከል ያለው የመረጃ ልውውጥ ብቃት					
8	How do you rate the company willingness on damage compensation due to company fault? በድርጅቱ ስህተት ለደረሰ የምርት ችግር ወይም ጉድለት የመተካት ተቀባይነት					
	PROFESSIONALISM:					
9	Office service quality? የቢሮ አገልግሎት ብቃት					
10	How do you rate the company transparency and uniformity of duties in dealing with customers? ያሰራር ግልጽነትና ወጥነት					

Appendixes B: Reliability Test Result

No	QMPs Variable	Cronbach's Alpha
1	Customer Focus	0.799
2	Leadership	0.765
3	Involvement of People	0.820
4	Process Approach	0.713
5	System Approach	0.763
6	Continual Improvement	0.886
7	Factual Approach to Decision making	0.813
8	Mutually Beneficial Supplier Relationship	0.817
9	Product Quality	0.782
10	Profitability	0.942

Reliability Statistics

Cronbach's Alpha	N of Items
.957	42

Appendixes C: Regressions Table

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.691	1	1.691	32.500	.000 ^b
	Residual	1.561	30	.052		
	Total	3.252	31			
2	Regression	2.014	2	1.007	23.589	.000 ^c
	Residual	1.238	29	.043		
	Total	3.252	31			

a. Dependent Variable: ORG

b. Predictors: (Constant), PI

c. Predictors: (Constant), PI, CF