THE IMPACT OF ISO 9000 CERTIFICATION ON TQM IMPLEMENTATION PROCESS: *IN THE CASE OF BEDELE BREWERY*

A research project submitted to college of Business and Economics in partial fulfillment of the requirements for the award of the Degree of Master of Business Administration

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The impact of ISO 9000 certification on TQM Implementation Process: *THE CASE OF BEDELE BREWERY FACTORY*

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Declaration

I undersigned declare that this research report is my original work and has not been presented for a degree in any other University, and that all the materials used for this study have been duly acknowledged.

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Abstract

Total Quality Management (TQM) is one of the popular modern management concepts with emphasis on quality in the entire organization and extends from supplier to customer. The main purpose of this study is to assess the adoption of TQM elements in ISO 9000 certified company in case of Bedele Brewery. In this study Bedele brewery was selected as it has been certified in ISO 9000 Quality management system since 2007. Out of 345 employees' 181 were selected using stratified random sampling and five department heads were included. A total of 143 usable questionnaires were received and the overall response rate was 79 percent. The result of the study shows that the company practiced TQM at a moderate level. Among the elements of TQM; process management, customer focus and supplier relationship implement at a high level. Leadership, employees' participation, education and training, and reward and recognition are implemented at moderate level. However, continuous improvement is practiced at low level. The result indicated that ISO 9000 implementation contributes towards the adoption of Total Quality Management. Even though the company is moderate in practice of TQM activities, it should be do more to implement them at their full extent.

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Acronyms

TQM----------Total Quality Management

QMS----------Quality Management System

ISO----------International Organization for Standardization

MBNQA----------Malcolm Baldrige National Quality Award

EFQM----------European Foundation for Quality Management

EQA----------Ethiopian Quality Award

PDCA----------Plan, Do, Check, Act

TPM----------Total productive management

CHAPTER ONE: INTRODUCTION

1.1. Background

"We all are demanding Total Quality Management (TQM) in our life" (Zairi, 1994 p.6). Zairi (1994) explained about the necessity of total quality management as" TQM is all around us, it is being demanded even in the context of public sector and non-profit making organizations" which is a global and universal philosophy of management.

Total Quality Management (TQM) is one of the popular modern management concepts with emphasis on quality in the entire organization and from supplier to customer (Ozden, 2003). Total Quality Management is an integrated system of principles, methods, and best practices that provide a framework for organizations to strive for excellence in everything they do (Total Quality Management , 2010).

TQM has been widely implemented throughout the world and effective TQM implementation can improve competitive abilities and provide strategic advantages in the marketplace. Several studies have shown that the adoption of TQM has led to improvements in quality, productivity, and can allow firms to compete globally (Zairi, 1994).

Over the years, Total Quality Management has becomes a strategic tool for manufacturing organizations to grow and sustain in a highly competitive business environment. The historical evolution of Total Quality Management has taken place in four stages; quality inspection, quality control, quality assurance and Total Quality Management. The first stage started in the 1910s when the Ford Motor Company's 'T' Model car rolled off the production line (Dahlgaard, et al., 2007).

The success of Japan in 1970's changed the emphasis from a quality control approach to a quality assurance approach requiring more of the business functions to be involved in the management of quality and requiring longer implication. The 1980s became an era of competitive challenge between westerns and Japan with an increasing number of companies adopting quality management (Mongabay, 1999).

TQM employs management techniques, productivity improvement initiatives, and various problem solving tools with the ultimate objective of achieving customer satisfaction all the time. The primary elements of TQM includes leadership, customer focused, total employee involvement, process- centered, supplier relationship management, integrated system, human resource management, continual improvement, fact based decision making and communication are core values and principles on which organization is to operate (The global voice of quality, 2012).

Companies make concerted efforts for improving quality to meet customer expectations and to compete in the market. Besides their efforts company's also try to improve quality through different quality assurance and quality management systems. Among the well known and accepted quality management systems, ISO 9000 standard is one route for companies strive to achieve quality. Gotzamani and Tsiotras (2006) findings showed that the development and application of a quality assurance system help companies to better organize and synchronize their operations by documenting their process, clearing out ambiguities and clearly defining duties and responsibilities among employees and departments. For business, ISO 9000 is a strategic tool that reduces costs by minimizing waste and errors and increasing productivity. It help companies to access new markets, level the playing field for developing countries and facilitate free and fair global trade (ISO, 2012).

Gotzamani & Tsiotras (2006) findings indicated that ISO 9000 standard implementation help companies to achieve an initial improvement in their quality performance, but it cannot guarantee that this improvement will continue after certification rather it depends on the motivation of the company for certification. The extent of TQM adoption in a third world country like Ethiopia has never been fully explored.

1.2. Statement of the problem

Many researchers argue that ISO 9000 standard implementation alone is not enough to compete in the world market (Coleman & Douglas, 2003; Wiele, et al, 2000; Gotzamani, et al, 2006), they argued that organization go beyond ISO 9000 standard implementation in order to compete in globalized market. Zhang (2000) states that ISO 9000 has lower effects on business performance than TQM. They indicate that ISO 9000 implementation gives a way for TQM adoption by providing basic building blocks for moving towards TQM implementation. However, many organizations still perceive that ISO 9000 certification is an end of their quality journey, rather than a means to an end (Han, et al., 2007).

ISO 9000 standards as compared to TQM has many shortages but careful and consistent implementation of this standards can offer a good first step towards TQM for which there are no clear requirements and directions (Gotzamani, et al., 2006). Rao et al. (1997) indicated that companies that are ISO 9000-registered had higher levels of TQM than non-registered companies and Wiele, et al. (2000) claimed that ISO 9000 considered as a basic level of TQM maturity. They indicated that proper implementation of ISO 9000 provides a transition to TQM. For developing countries like Ethiopia, ISO 9000 certification provide an introduction to quality in global context and opportunity to move towards adoption of TQM.

The growing liberalization of trade and the globalization of market create difficult challenges to companies in developing countries. Ethiopia is on its way to liberalize the market as a result many foreign companies' have emerged in the local market in different sectors (Ethiopian Trade and Investment , 2012). The emergency of foreign companies in local market seems to create tough competition and also brings technology transitions to host country. To survive and compete in this competitive market, indigenous companies may need to update themselves to the modern quality management philosophy called TQM.

A number of studies have been conducted on the area of TQM implementation, benefits and barriers, however such studies only deals with the developed countries' context and have proposed an implementation framework (Ebrahimpour & Sila, 2002).

Between 1989 and 2000 majority of TQM researches published were done in setting of developed countries such as USA, UK and Australia. Even though, there is no adequate information about the nature and implementation of TQM in developing countries in Africa (Ebrahimpour & Sila, 2002). In Ethiopia also there is a shortage of literature available about TQM and its implementation which gives an insight about the current status of TQM practices.

This study conducted in ISO 9000 certified company in order to measure the degree of implementation of TQM elements and to look the contribution of ISO 9000 in TQM adoption. An ISO 9000 certified company was selected because different researchers argued and found that ISO 9000 standard implementation can serve as a stepping stone towards TQM (Rao, et al., 1997; Quazi, 2002; Gotzamani & Tsiotras, 2001; Gotzamani, et al., 2006). For this study an ISO 9000 certified case company; Bedele brewery was selected which has six years of certification experience. The company certified since 2007 in ISO 9001:2000 version and now certified in ISO 9001: 2008. This study at least will give the chance to managers and practitioners' to think about total quality management and the possibility of transition from ISO 9000 to TQM.

Therefore, this research is conducted to assess the practice of TQM in ISO 9000 certified company and to know the contribution of ISO 9000 standard implementation for adoption of TQM by raising following research questions:

A. What is the extent of adoption of TQM practices in Bedele Brewery?
B. Which elements of TQM are more effectively implemented?
C. What is the contribution of ISO 9000 certification for adoption of potential factors of TQM?

1.3. Objective of the study

1.3.1 General objective

The objective of this study is to assess the potential factors of TQM in the case of ISO 9000 certified company and the contribution of ISO 9000 standard implementation for adoption of TQM.

1.3.2. Specific objectives

1. To assess the level of TQM practices adopted by the company
2. To identify which elements of TQM more effectively implemented
3. To assess the contribution of ISO 9000 certification to adoption of TQM

1.4. Significance of the study

This research is conducted to assess the extent of TQM practice in an ISO 9000 certified company in case of Bedele Brewery. The result of this study provides a good insight about the current status of TQM practice in the company and the result can be used by managers to prioritize those factors which have greater impact on performance of the organization and to make a full adoption of TQM in the company. It also provides the current TQM practice in the factory and future researchers can study TQM in the industry level and can develop implementation framework that fit with the inherent quality culture of the industry. This study also contributes to TQM literature in Ethiopia by presenting empirical data on the TQM status in Bedele Brewery.

1.5. Scope of the study

This study delimited to assessment of Total Quality Management practices in case of Bedele brewery. This study covers the period of time between Januarys to May 2013. The researcher tried to assess the extent to which TQM practices are adopted and implemented in the company.

1.6. Limitations of the study

The study has many limitations and constraints. Among these limitations, mainly finance and time limit the scope of coverage of the study. As this study is conducted only in a single company, so it cannot be generalized to the industry. Despite these limitations, the study is carried out with all possible thoroughness. It endeavor extract the truth and relevant issues from the mass of data and information collected using appropriate methods.

1.7. Organization of the paper

This study is organized into five chapters consisting of introduction, literature review, research methodology, result and discussion, and conclusion and suggestion.

Chapter one gives a brief description about the main part of research. Chapter two describe and discuss the concept of TQM both in theoretical and empirical. Chapter three present the methodological perspectives of this research. The strategies adopted in this research are discussed in detail. Chapter four deals with data presentation, analysis and discussion of primary data collected from respondents. Finally, chapter five present summary, conclusion and suggestion for future studies.

Operational definition

Total Quality Management: TQM is a management philosophy of seeking excellence in all aspects of business through organization-wide participation in the quest for quality with customer satisfaction.

Quality: quality is meeting the customer expectations and requirements'

CHAPTER TWO: LITERATURE REVIEW

2. Introduction

Chapter two introduces the fundamental concepts that are necessary to understand and to use total quality management in an organization. These include a definition of quality and total quality management, critical elements of total Quality Management and the contribution of other quality systems to TQM adoption. This chapter also discusses the benefits and constraints of total quality management implementation. This chapter structured in two main categories: theoretical and empirical aspect of TQM. The first part present TQM from Quality gurus, quality award model and other quality management systems and the second part present literature reviews on empirical studies about TQM.

2.1. Definition of Quality and TQM

2.1.1. What is quality?

Many scholars agreed that quality is expressed as a relative concept and can be different things to different people.

Different quality gurus' define quality from different perspectives; Oakland (2003) defined 'quality is meeting the customer requirements'. The most common definition of quality by quality gurus' is:

- *Fitness for purpose or use –Juran*
- *Conformance to requirements or specification – Crosby*
- *Quality should be aimed at the needs of the consumer, present and future – Deming*
- *'Degree to which a set of inherent characteristics fulfils requirements' – ISO (EN) 9000:2000 Quality Management Systems – fundamentals and vocabulary*

(Oakland, 2003, p. 4)

Stevenson (1996 P.94) defined "quality is the ability of products or service to consistently meet or exceed customer expectation", and have the following dimensions; performance, special feature, conformance, reliability, durability, perceived quality and service after sale.

2.1.2. Why organizations concern for quality?

The quality of the product and service can affect the organization in different ways. For example poor quality affects the organization in loss of business, liability costs and productivity (Stevenson, 1996). Poor quality increase certain costs like rework and scrap cost, warranty costs, replacement and repair costs, and other costs. The cost of quality includes failure cost (internal and external), appraisal costs and prevention costs. Failure costs incurred by defective product or parts or faulty services, failures may be internal and external. Appraisal costs include costs for activities to assure there is no defective or to uncover defective products or parts and preventive costs are costs incurred to prevent occurring of defectives.

2.1.3. Evolution of Quality management

Quality management has had many meanings over years. In early 1900s, quality means inspection, which was the primary method used to ensure quality product. In 1940s, quality took on a statistical connotation as statistical method was used to control quality. In 1960s, the meaning of the term quality management was expanded to include the entire organization as all functions helped in designing and producing quality. Now quality is taking broader meaning including continuous improvement, competitive advantage and customer focus. (Dahlgaard, et al., 2007)

2.1.4. What is total quality management?

There are different definitions of total quality management by different authors and researchers, among the many the most comprehensive definition of total quality management is by Kanji (1990) cited in Dahlagaard, et al. (2007 P.14) defined Total Quality Management as follow:

> *"TQM is the way of life of an organization committed to customer satisfaction through continuous improvement. This way of life varies from organization to organization and from one country to another but has certain essential principles which can be implemented to secure greater market share, increase profits and reduce cost".*

Total quality management is a 'philosophy that involves everyone in an organization in the quest for quality with customer satisfaction as a driving force' (Stevenson, 1996 p.101).

It is widely believed that total quality management evolved gradually and took place in four stages namely, quality inspection, quality control, quality assurance and Total Quality Management (Dahlgaard et al, 2007). Total Quality Control (TQC) developed by A.V. Feigenbaum in 1960 never achieved the total acceptance in western companies rather it was accepted in Japan and they call it" company –wide quality control" (CWQC) which is now called TQM in western (Dahlgaard, et al., 2007). He defined 'TQC is an effective system for integrating the various initiatives in the field of quality to enable production and services to be carried out as cheaply as possible consistent with customer satisfaction'. In his definition he didn't mention management's commitment for quality improvement and TQC is left to quality department. To fill this gap the TQM philosophy is emerged by incorporating top management commitments and leadership.

In the definition of TQM all give emphasize total involvement of all employees' from top executives to first line workers, customer satisfaction is the focal point, and supplier relationship are the most common elements in the definition of TQM. TQM emphasizes top management's role in leading a total quality effort on which all employees at all levels must focus. All employees are responsible for continuous quality improvement and quality is the focal of all organizational functions. TQM also emphasize quality is a strategic issue. The organization must understand what the customer wants in terms of quality and then use strategic planning encompassing all functional areas to achieve goals for quality.

2.2. Concepts of Total Quality management

2.2.1. The philosophy of TQM from quality gurus

2.2.1.1. Deming Approach to TQM

William Edwards Deming is one of the gurus of quality who contribute to the development of TQM. He contributes 14 points for approach to TQM and seven deadly disease and sins that should be eliminated. Deming advocate quality is the responsibility

of everybody in the organization includes all employees and top management. Organizations should eliminate the seven deadly disease and sins that impede organizations to produce and deliver high quality products. Deming's 14 points can be used for curing and overcoming those deadly diseases and sins. Deming's 14 principles and seven deadly diseases are presented below (American Society for Quality, 2013; Oakland, 2003; Rungtusanatham, et al., 2003 and Dahlgaard, et al., 2007):

⇒ Create constancy of purpose for improvement of product and service. (Plan to stay in business.)	⇒ Drive out fear. (Encourage employees to speak up.)
⇒ Adopt the new philosophy. (Stop tolerating poor quality or refuse to accept non conformance)	⇒ Break down barriers between departments.
⇒ Cease dependence on inspection to achieve quality. (Improve the process.)	⇒ Eliminate slogans, exhortations, and targets for the work force.
⇒ End the practice of awarding business on the basis of price tag alone. (Seek longer-term supplier relationships; reduce the number of suppliers.)	⇒ Eliminate work standards that prescribe numerical quotas.
⇒ Improve constantly and forever every process in the system of planning, production, and service.	⇒ Remove barriers to pride in workmanship. (Poor supervisors, poor materials, inadequate equipment, lack of training, etc.)
⇒ Institute modern training (for everybody!).	⇒ Institute a vigorous program of education and self-improvement for everyone.
⇒ Institute modern methods of supervision. (The responsibility of foremen must be changed from total numbers to QUALITY.)	⇒ Place everybody in the company to work to accomplish the transformation and create a structure in top management that will push every day on the above points.

Deming's Deadly Sins and Diseases

For properly implementing Deming's 14 points, he recommended for western organization to avoid bad practices he called "unforgivable sins or deadly diseases" (Rungtusanatham, et al., 2003). Deming's deadly sins and diseases are: lack of constancy, short-term profits, performance appraisals, job-hopping (mobility of management) and use of visible figures only.

2.2.1.2. Juran Approach to TQM

Juran characterizes his quality program as a quality trilogy made up of quality planning, quality control and quality improvement. He added the human element to quality in broadening from its statistical origin and then he makes the quality management into Total quality management. He also contributes ten steps towards quality improvement. Juran's ten steps to quality improvement were:

⇒ Build awareness of the need and opportunity for improvement: realize that all processes are improvable

⇒ Set goals for improvement

⇒ Organize to reach the goals (establish a quality council, identify problems, select projects, appoint teams and designate facilitators).

⇒ Provide training

⇒ Carry out projects to solve problems-Juran's trilogy

⇒ Report progress

⇒ Give recognition

⇒ Communicate results

⇒ Keep score

⇒ Maintain momentum by making annual improvement part of the regular systems and processes of the company (Rai University, 2008).

Generally juran contributions are top management involvement, Pareto principle, training in quality management, definition of quality as fitness for use, project-by-project approach (Juran trilogy) and standard reference the Quality Control Handbook.

2.2.1.3. Crosby's approach to achieve TQM

Philip Crosby, who spent his time as Quality Director of ITT and he is famous in his phrase 'quality is free'. He had four absolutes for quality management and 14 steps for quality improvement. Crosby's four absolutes are (Oakland, 2003 Pp.19):

- Definition – conformance to requirements.
- System quality – prevention.
- Performance standard – zero defects.

- Measurement of quality – price of non-conformance.

He also offered 14 management steps to quality improvement:

1. Make it clear that management is committed to quality.
2. Form quality improvement teams with representatives from each department.
3. Determine where current and potential quality problems lie.
4. Evaluate the cost of quality and explain its use as a management tool.
5. Raise the quality awareness and personal concern of all employees.
6. Take actions to correct problems identified through previous steps.
7. Establish a committee for the zero defects program.
8. Train supervisors to actively carry out their part of the quality improvement program.
9. Hold a 'zero defects day' to let all employees realize that there has been a change.
10. Encourage individuals to establish improvement goals for themselves and their groups.
11. Encourage employees to communicate to management the obstacles they face in attaining their improvement goals.
12. Recognize and appreciate those who participate.
13. Establish quality councils to communicate on a regular basis.
14. Do it all over again to emphasize that the quality improvement program never ends.

2.2.2. TQM from Quality Award Models

Quality Awards are one of TQM implementation models. Among the known national quality awards: Malcolm Baldrige National Quality Award (MBNQA) in United States, European Foundation for Quality Management (EFQM) in European Union, the Deming Prize in Japan and Ethiopian Quality Award (EQA) in Ethiopia are some of the quality award models.

2.2.2.1. The Deming prize

The Deming Prize is one of the highest awards on Total Quality Management in the world. It was established in 1951 in commemoration of the late Dr. William Edwards

Deming who contributed greatly to Japan's proliferation of statistical quality control after the World War II. His teachings helped Japan build its foundation by which the level of Japan's product quality has been recognized as the highest in the world. The Deming Prize defines TQM as follow:

"*TQM is a set of systematic activities carried out by the entire organization to effectively and efficiently achieve the organization's objectives so as to provide products and services with a level of quality that satisfies customers at the appropriate time and price*"

(JUSE, 2010)

The Deming prize committee clearly defined TQM requires top management's commitment and leadership by establishing clear long-term vision and strategy as well as quality policies and strategies. TQM requires involvement of everyone at all levels in the company to achieve the objective of the company.

The Deming prize advocates that companies can adopt TQM that is appropriate to their business and scale. Organizations do not force to follow a similar model/format of TQM with other organizations. There are four types of Deming prizes: Deming prize for individuals, Deming distinguished service award for dissemination and promotion, Nikkei QC Literature Prize and Deming application prize.

Deming application prize is an annual prize given to organizations that implement TQM suitable for its management philosophy, scope/type/scale of business, and management environment. Any organization can apply to the prize regardless of its type, size, scale or ownership.

Expected results of Deming prize on organization who try to win and who won the prize are quality stabilization and improvement, productivity improvement/ cost reduction, expanded sales, increased profits, thorough implementation of management Plans/Business Plans, and realization of top management dreams, etc. (JUSE, 2010)

2.2.2.2. The European Foundation for Quality Management (EFQM)

EFQM was established in 1988 on the initiative of 14 leading European companies and awarded for the first time on 15 October 1992 to Rank Xerox Limited.

The model consists of nine elements grouped in two groups, one group comprises five elements which are enablers and the other four elements are the results. (EFQM, 2012)

Table 2. 1 Elements of the European Foundation for Quality Management

Enablers of EFQM	**RESULTS of EFQM**
Leadership	Customer results
Policy and strategy	People results
People management	Society results
Partnership and Resources	Business results
Processes, products and services	

Any company can implement EFQM excellence model to improve their business performance. To begin EFQM for the first time, an organization first assesses its current situation using three assessment tools. This assessment tools are the Quick check, simple questionnaire and determining excellence.

2.2.2.3. Malcolm Baldrige National Quality Award (MBNQA)

The MBNQA was established in 1987 by the US congress to promote quality awareness, to recognize quality and business achievements of US organization and to publicize these successful organizations performance strategies. The Baldrige Award is presented annually to U.S. organizations by the President of the United States. Awards are given in manufacturing, service, small business, education and health care (NIST, 2010). The MBNQA has seven criteria for performance excellence. The MBNQA seven criteria's are:- Leadership, Strategic Planning, Customer Focus, Measurement, Analysis and Knowledge Management, Workforce Focus, Operations Focus and Results (NIST, 2011).

2.2.2.4. Ethiopian Quality Award (EQA)

EQA was established in January of 2008 to design an award that recognizes achievements of Ethiopian companies based on a partnership agreement signed between the Addis Abeba University and Walta Information Center in August of 2007 for encouraging Ethiopian manufacturing and service industry to incorporate and implement quality management. (Walta information , 2012).

EQA has the following criteria to evaluate industries performance and to give award; leadership, policy and strategy, resources management, process management, customer satisfaction, business performance and impact on the society (Beshah, 2011).

The Ethiopian quality award criteria categorized into enablers and results, under enablers leadership, policy and strategy, resource management and process whereas under result category customer focus, business performance, and impact on the society. Ethiopian Quality Award has seven main criteria categorized into two Enablers and Results:-

Table 2. 2 Elements of the Ethiopian Quality Award

Enablers of EQA criteria	Results of EQA criteria
Leadership	Customer focus
Policy and strategy	Business performance
Resource management	Impact on society
Process management	

EQA model Framework

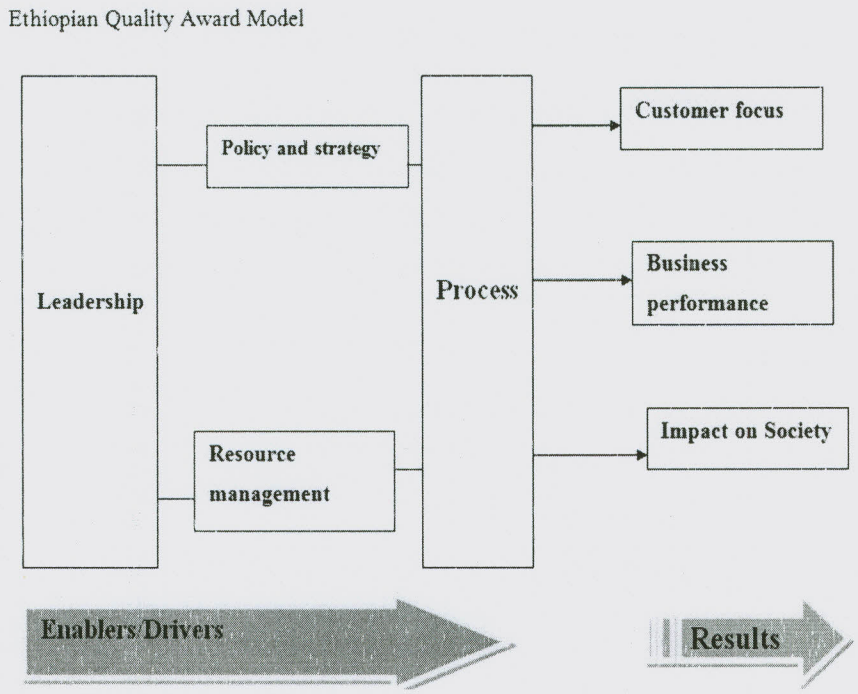


Figure 2. 1 Ethiopian Quality Award (EQA)

(Source: Beshah, 2011, P.31).

2.2.2.5. Comparison of Ethiopia Quality Award with other quality awards

The most known quality awards like European Quality Award (EQA), Malcolm Baldrige Quality Awards (MBQA) are models for TQM implementation and developed from the principles of total quality management. Ethiopian Quality Award also developed based on principles of TQM. Beshah (2011) make a comparison of Ethiopian Quality Award model with other known national quality award models with European Quality Award, Malcolm Baldrige National Quality Award and Australian Quality Awards. All quality award models are derived from the principles of quality management. However, they have some differences in their focus area and weight of criteria.

Table 2. 3 comparison of Ethiopian Quality Award with other Quality Awards

The European Quality Award	Weight	**The Malcolm Baldrige National Quality Award**	Weight	**The Ethiopian Quality Award (EQA)**	Weight
Leadership	10%	Leadership	9%	Leadership	15%
People Management	9%	Information and Analysis	8%		
Policy and Strategy	8%	Strategic quality Planning	6%	Policy and strategy	8%
Resources	9%	Human resources development	15%	Resource management	12%
Processes	14%	Management of process quality	14%	Processes	15%
People Satisfaction	9%	Quality and operational results	18%	Customer focus	25%
Customer Satisfaction	20%	Customer focus and satisfaction	30%		
Impact on the Society	6%			Impact on society	10%
Business Results	15%			Business Performance	15%

Source: Beshah, 2011, Pp: 32

From table 2.3 we can understand that the Ethiopian Quality Award model is similar to European Quality Award model.

2.2.2.6. ISO 9000 Quality management system

International Organization for Standardization (ISO) was established in 1946 when delegates from 25 countries met at the Institute of Civil Engineers in London and the organization officially began operations in February 1947.

International Organization for Standardization have different acronyms in different languages (IOS in English, OIN in French for *Organisation internationale de normalisation*), but founders decided to give it the short form ISO. ISO is derived from the Greek ***isos***, meaning equal. Whatever the country, whatever the language, the short form of the name is always ISO.

ISO is a voluntary organization whose members are recognized authorities on standards, each one representing one country. The purpose of ISO is to promote worldwide standards that will improve operating efficiency, improve productivity and reduce costs. Today the organization has members from 163 countries and 3,368 technical bodies to take care of standard development. More than 150 people work full time for ISO's Central Secretariat in Geneva, Switzerland (ISO, 2013)

ISO 9000

There are many types of ISO standard among this, ISO 9000 series is a set family of quality management and quality assurance standards developed by the International Organization for Standardization. The standards provide guidance and tools for companies and organizations who want to ensure that their products and services consistently meet customer's requirements and that quality is consistently improved (ISO, 2013). ISO 9000 series are revised in different years among these ISO 9000:1994, ISO 9000:2000, and currently ISO 9000:2008.

ISO 9001:2008

ISO 9001:2008 sets out the criteria for a quality management system; it can be used by any organization large or small and regardless of its field of activity. ISO 9001:2008 is implemented by over one million companies and organizations in all over the world. This is the latest improved version of ISO 9000 quality management system released prior. The ISO 9000 quality management system provides eight quality management principles as well as process approach to achieve continuous improvement. ISO 9000:2008 quality management system has the following basic principles (ISO, 2013):

1. **Customer focus:** Organizations depend on their customers and therefore should understand current and future customer needs and meet customer requirements and strive to exceed customer expectations. Understanding what the customer wants is the first step in being able to fulfill customer expectation.
2. **Leadership:** Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives. Top management is required to take a lead in communicating the importance of meeting customer and statutory requirements, in setting quality objectives and deploying them throughout the organization, and in ensuring effective communication throughout the organization.
3. **Involvement of people:** People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.
4. **Process approach:** A desired result is achieved more efficiently when related resources and activities are managed as a process.
5. **System approach to management:** Identifying, understanding and managing a system of interrelated processes for a given objective improves the organization's effectiveness and efficiency.
6. **Continual improvement**: Continual improvement should be a permanent objective of the organization.

7. **Factual approach to decision making**: Effective decisions are based on the analysis of data and information
8. **Mutually beneficial supplier relationship:** An organization and its suppliers are interdependent, and a mutually beneficial relationship enhances the ability of both to create value.

2.3. Review of TQM from empirical literatures

2.3.1. Is ISO 9000 as a stepping stone for TQM?

A number of quality related research studies have been reported on the potential of ISO 9000 as foundation for TQM and the possibility of existence progress towards TQM. However, there is a shortage of research in this area in Ethiopia.

ISO 9000 standards provide a documented system that depicts the activities in an organization which can provide a base for TQM. ISO 9001:2000 and 2008 versions has take into consideration TQM and even laid down pointers for those organizations who want to implement TQM.

The literature extensively cites ISO 9000 as a foundation for TQM or framework on which TQM can be developed (Askey & Dale, 1994; Chan & Lee, 1999; McAdam & Jackson, 2002). ISO and TQM should not be viewed as either or situation but as a complementary (McAdam & Jackson, 2002). In a comparative study in Hong Kong by Chan & Lee (1999) concluded through empirical evidence that, companies' with ISO 9000 achieved improved implementation of TQM practices. Rao, et al. (1997) found that ISO 9000 registered companies exhibit higher levels of leadership, information and analysis, strategic quality planning, human resource development, supplier relationship and customer orientation.

McAdam & Jackson (2002) conducted a study on 90 ISO 9000 certified UK and Irish brewing companies to know the possibility of transition from ISO 9000 to TQM. They found that both ISO 9000 and TQM has a complementarity relationship and successful progression towards TQM only occur if a non-bureaucratic inclusive approach to ISO 9000 implementation is adopted.

Gotzamni, et al. (2006) discussed the importance of ISO 9000 certification as a first step to TQM adoption. ISO 9000 well structured requirements and the existence of a clear and measurable end make top management's commitment to the standards much easier than to the so-called "philosophy" or "never-ending" process of TQM.

McAdam & Jackson (2002) recommended that TQM is best implemented within a controlled environment and having a quality assurance foundation like ISO 9000; having an ISO 9000 system have an impact on the attainment of a number of the important TQM requirements. In summary, it is evident from the literature that acceptance of the link between ISO 9000 and TQM, including ISO as stepping stone towards TQM, has been accepted.

2.3.2. Critical Elements of TQM

In TQM, factors that influence success or failure in TQM implementation have received much research interest and many researchers identified different factors that are critical for TQM implementation.

TQM constructs/ critical elements discussed in the literature vary from author to author. However, there are common themes in findings that are critical for successful implementation and sustaining of TQM. Researchers' categorize those factors into soft and hard factors.

Das, et al., (2008) make a literature review on the constructs of TQM and identified the most common elements of TQM; top management commitment, supplier quality management, continuous improvement, employee involvement, reward and recognition, education and training, customer focus, product innovation and benchmarking. Ahmadi & Helms (1995) identified the critical elements of TQM i.e. customer focus, process improvement, total involvement and continuous improvement. Anderson et al. (1994) cited in Rungtusanatham, et al. (2003) developed TQM constructs based on Deming approach and empirically tested in US manufacturing and finally he set out the following elements/constructs of TQM: visionary leadership, internal and external cooperation, continuous improvement, process management, employee fulfillment, customer satisfaction and learning.

Sila & Ebrahimpour (2003) conducted a study to identify the critical factor for TQM across different countries. They conduct extensive reviewing on 347 researches done between 1989-2000 across in North America, Europe and Asia. They identify the most common critical factors of TQM across countries and their findings showed that the following are critical factors of TQM mentioned across countries; leadership and top management commitment, customer focus, training, supplier management, employee involvement and empowerment, continuous improvement, process management, strategic management, information analysis, team work, human resource, process control, and quality assurance.

The constructs or critical success factors identified in TQM put into two categories as a soft and hard dimension of TQM. "Hard" components of TQM concentrate on the tools and techniques, systems and the supplementary measurement and control of the work process whereas "soft" components relate to areas behavioral concerns such as increasing customer orientation, employee management, organizational and quality culture. These dimensions are interrelated and together are very important for the successful implementation of TQM. (Rahman, 2004 and Oakland, 2003).

Based on the literature review the following elements are used as a critical element of TQM; leadership, customer focus, supplier relationship, employees' involvement, reward and recognition, training and education, process management and continuous improvement. Based on these elements a questionnaire and interview was prepared to assess TQM practice in the company.

2.3.2.1. Leadership

Leadership is the foundation to establish unity of purposes and directions for the institution in order to reach desired outcome. Since, everyone's involvement is prerequisite for TQM; management must exercise leadership abilities to influence the behavior of others that is why Grover, et al (2006) decides without top management involvement no discussion about TQM. A sound foundation for initiating TQM activities is to be laid by top management. Before the implementation of TQM, it is necessary the management decide on the vision, mission, goals, values, ethics and attitude for the organization to follow.

Top management should actively develop quality plans to meet business objectives and communicate company's philosophy to the employees and involve them in the TQM effort and improvement activities, encourage employees to achieve their objectives and ensure adequate resources for employee education and training. Top management should demonstrate their involvement in quality management through commitment, resource allocation and providing leadership in actions rather than words and announcing of quality policy (Das, et al., 2008 p.55).

The TQM literature clearly portray that without top management involvement it is impossible to implement TQM successfully. All quality awards; Malcolm Baldrige National Quality Award (MBNQA) and European Foundation for Quality Management (EFQM), Ethiopian Quality Award (EQA), and ISO9000 quality management system placed leadership factors at the top of their criteria for successful quality management implementation.

Quality gurus' stressed the importance of leadership and top management commitment; Juran and Crosby acknowledge that above 80% of the problems are due to top management. They give great attention to leadership of top management. Deming (1986) in the transformation process of business philosophy calls for managers to institute leadership rather than supervisors. Juran (1993) considers the failure of the quality initiative is due to lack of personal involvement from senior management in quality management movements. Whereas Feigenbaum (1961) states that achieving results and organizational commitment depends greatly on top management's commitment. Top management's commitment to quality management is an absolute precedence for preparing organizational culture before TQM practices can be implemented, top management can facilitate the unity of purpose as well as change process management and learning processes. Top management leadership and commitment element can be positioned at the soft side of TQM. (Jung, et al., 2009).

2.3.2.2. Supplier relationship Management

The philosophies behind the various TQM and excellence models support the establishment of partnerships with suppliers and lay down principles and guidelines for them. Developing partnership with suppliers is one of the major factors for successful

TQM implementation. An efficient supply chain process, built on strong confident partnerships, will create high levels of people satisfaction, customer satisfaction and support and, in turn, good business results (Oakland, 2003 pp. 64).

There are various ways of ensuring the partnership processes work well for an organization. These range from the use of quality management system audits and reviews, performance reviews and joint action plans. Supplier quality management can be defined as the set of supplier-related quality management practices for improving suppliers' quality of products and services. Supplier quality management can be emphasize product quality as the criterion for supplier selection, participation in suppliers, communication with suppliers, understanding of supplier performance, and supplier quality audit (Zhang, et al., 2000). Supplier quality management is an important dimension of quality management as defective incoming materials and parts lead to process and product quality problems. Extensive, long-term relationship with the suppliers' helps minimize inspection cost of the raw materials.

2.3.2.3. Continuous Improvement

Continuous improvement is very essential for the survival of a company due to ever changing tastes of customers and pressures from competitors. The tendency of the institution to purse incremental and innovative improvements of its process, products and services should be the deriver to achieve continuous improvement. Continuous improvement of processes and product quality leads to increased revenues through product reliability and reduced costs through process efficiency.

The Deming PDCA wheel "Plan-Do-Check-Act" can be used as a tool for continual improvement. The "Plan" establishes the objectives and processes necessary to deliver results in accordance with customer requirements and the organizations policies; the "Do" implements the processes, the "Check" monitors and measures the processes and products against policies, objectives and requirements and reports on the results, and the "Act" takes actions to continually improve process and system performance. (Lewis, et al., 2006).

Empowering and involving employees for making continuous improvement is essential element for TQM, because employees will have more enthusiasm toward change processes, and thus result in more participation (Jung, et al., 2009).

2.3.2.4. Education and Training

Training refers to the acquisition of specific skills or knowledge. Training programs attempt to teach employees how to perform particular activities or a specific job. Education, on the other hand, is much more general, and attempts to provide employees with general knowledge that can be applied in many different settings (Zhang, et al., 2000).

In order to effectively participate in quality management, employees need to be adequately trained and explained about principles and benefits of the TQM practices and management must ensure an organization-wide training program (Jung, et al., 2009).

2.3.2.5. Employees' Participation

Management participation in quality activities is not enough to contribute to quality improvements as costs of total quality is difficult to control by management alone. Employees' participation is very important elements for successful implementation of TQM. Employee participation can be defined as the degree to which employees in a firm engage in various quality management activities. Employees' can be participated or involved in the form of teamwork and employee suggestions.

Employees should be empowered as they are the center of TQM approach and involved in managing and improving process and serving customers. Employee empowerment is giving workers the responsibility and authority to make changes for improvement. This puts decision making into the hands of those who are closest to the job and have considerable insight into problems and solutions (Dahlgaard, et al., 2007). Employees' should be empowered and encouraged to provide innovation and creativity at all levels of the work force and total employee involvement is necessary to ensure excellence in all quality dimensions (Mehra, et al., 2001).

Employees' can participate in the organization through team and by providing improvements and suggestions. Teams can be cross-functional or Quality Circle which is

composed of different department representatives and who are necessary to implement TQM throughout the organization. Quality circle is small groups which are voluntarily carrying out quality control activities within its own work area (Dahlgaard, et al., 2007). Each member in the group participates and carries out quality control continuously, as a part of a company's total quality control activities and using quality control activities within its own work area.

2.3.2.6. Customer Focus

Customer focus can be defined as the degree to which a firm continuously satisfies customer needs and expectations. Obtaining customer complaint information is to seek opportunities to improve product and service quality (Zhang, et al., 2000). To improve customer focus efforts, customer complaints should therefore be treated with top priority (Juran & Gryna, 1993). In the TQM philosophy, customer satisfaction is the goal of the entire system. The term customers in the quality management literature refer to both internal and external customers. The external customer is the consumer or client is the end user of the products or services being offered. An internal customer is a second process or department within the organization which depends on the product of the first. These internal customers receive products and information from other groups of individuals within their organization. Thus, satisfying the needs of these internal customers is an essential part of the process of supplying the final external customer with a quality product. Every party in a process has three roles: supplier, processor, and customer (Lakshman, 2006). The ability to manage the customer relations is crucial for an organization in sustaining a competitive advantage.

2.3.2.7. Process Management

From the quality management perspective, process management is described as an arrangement of the necessary elements for creating quality and as a means to allocate and coordinate constituent activities of typical processes of quality management. The related processes are systematically designed, managed, and innovatively improved.

Process management best practices are (Oakland, 2003 pp. 169):

- Identifying the key (core) business processes: prioritizing on the basis of the value chain, customer needs and strategic significance, and using process models and definitions.
- Managing processes systematically: giving process ownership to the most appropriate individual or group and resolving process interface issues through meetings or ownership models.
- Reviewing processes and setting improvement targets: empowering process-owners to set targets and collect data from internal and external customers.
- Changing processes and evaluating the benefits: through process improvement or re-engineering teams, project management and involving customers, and suppliers.

2.3.2.8. Reward and Recognition

Recognition and rewards are one of the important soft factors of TQM which are very important element for successfully implementing and sustaining TQM. Recognition defined as the public acknowledgment of superior performance of specific activities. Reward is defined as benefits, such as increased salary, bonuses and promotion, which are conferred for generally superior performance with respect to goals. (Juran & Gryna, 1993).

The three types of recognition that all companies can build on: company awards for quality, awards for teams with successful track records, and awards for staff who meet customer expectations. (managementstudyguide.com, 2013). Employees are parts of the firm's process and improving quality at lower cost can only be achieved when the company has good, committed and satisfied employees. Recognition is the most important factor which acts as a catalyst and drives employees to work hard as a team and deliver their best. Mehra, et al., (2001) recommended that the reward system should be team-based and the need to switch the incentive systems from individual- to group-oriented.

Table 2. 4 Summary of critical success factors of TQM

Critical quality factors	Supporting literature
Leadership	Feigenbaum, 1989; Deming; 1986; Crosby; 1979; Juran, 1993; Powell,1995; Saraph et al, 1989; Black and Porter, 1996; Ahire et al, 1996; Motwani et al, 1994; Deming Prize; Baldrige Award; European Quality Award; Australian Quality Award; Canadian Quality Award; Kanji, 1990; Oakland, 2000; Zairi, 1999; George and Weimerskirch, 1998; Ross, 1999; Krasachali and Tannock, 1999; Laszlo, 1999; Evans and Linsday, 2001; Ramirez and Loney, 1993; Hoffman and Mehra, 1999; Zeitz et al, 1997; Grahn, 1995; Stamatis, 1997; Garvin, 1983; Anderson and Sohal, 1999; Mohanty and Lakhe ,1998
Employee involvement	Deming, 1986; Juran, 1993; Ross, 1999; Ramirez and Loney, 1993; Evans and Linsday, 2001; Crosby, 1979; Zairi, 1999; Flynn et al, 1995; Tan, 1997; European Quality Award; Canadian Quality award; Zhang et al, 2000; George and Weimerskirch, 1998; Ahire et al, 1996
Training and education	Saraph et al, 1989; Kanji, 1990; Deming, 1986; Juran, 1974; Black and Porter, 1996; Powell, 1995; Motwani et al, 1994; Thiagaragan and Zairi, 1997; Flynn et al, 1994; Oakland, 2000; Zhang et al, 2000; Mann and Kehoe, 1995; Ishikawa, 1985; Crosby, 1989; Porter and Parker, 1993;Rao et al, 1996; Mathews et al, 2001a; Evans and Linsday, 2001
Reward and Recognition	Zhang et al., 2000; Johnston and Daniel, 1991;London and Higgot, 1997; Sweatman 1996; Crosby 1989; Evans and Lindsey, 2001; Rao et al., 1996; Zhang et al., 2000; George and Weimerskirch, 1998; Thiagaragan and Zairi, 1997
Supplier's Management	Zhang et al, 2000; Crosby, 1989, Deming, 1986; Ishikawa, 1985; MBNQA, Canadian Quality Award; Garvin, 1988; Juran, 1988; Saraph et al, 1989; Powell, 1995; Badri et al, 1995; Richardson, 1996
Process Management	Flynn et al, 1994; Juran, 1988; Powell, 1995; Deming, 1986; Motwani et al, 1994; Oakland, 2000; Ross, 1999; Mcteer and Dale, 1996; Evans and Linsday, 2001; Singels et al, 2001; Saraph et al, 1989; Mann and Kehoe, 1995; Ramires and Loney, 1993; Ahire et al, 1996; Black and Porter, 1996; MBNQA; EFQM; Australian Quality Award; Canadian Quality Award. Tan, 1997
Customer Focus	Deming, 1986; Juran, 1988; Crosby, 1979; Powell, 1995; Black and Porter, 1996; EFQM; MBNQA; Flynn et al, 1994; Oakland, 2000; Govers, 2001; Zairi, 1996; Evans and Linsday, 2001; Richardson 1996; Ross, 1999; Saraph et al, 1989; Zeitz et al, 1997; Kanji, 1990; Spring et al,1998; Chan and Chan, 2001

Source: Ebrahimpour & Sila, 2002

2.3.3. Tools and Techniques of TQM

Total quality management has been developed around a number of critical factors. However, TQM is much more than a number of critical factors; it also includes other components, such as tools and techniques for quality improvement. The seven quality control tools includes: cause and effect diagram, Pareto diagram, Stratification, Check sheet, Histogram, Control chart and Scatter diagram, and techniques includes: Analytical hierarchy, Matrix diagram, Affinity analysis and Matrix data analysis (Dahlgaard, et al., 2007).

2.3.4. Constraints/ failure/ factors of TQM

Different studies in a lot of countries were especially accomplished to assess the TQM implementation and its barriers. This were accomplished to promote the awareness about the best quality practices and to overcome the global competitive challenge. We can learn from these studies to implement TQM properly.

There are many organization face failures in TQM implementation; Martins & de Toledo (2000) mentioned some of the failure factor of TQM are inadequacy of planning and incomplete implementation programs, lack of appropriate quality management reference model, an emphasis on image rather than business results, focused on minimum standard existent, non alignment with strategic objective, and lack of continuity of the implementation program. They recommend the use of implementation frameworks that guides Total Quality Management implementation to avoid failures. Zairi (1994) recommended that it is more important to understand how it works as a philosophy and appreciate it for its long-term nature for successful implementation.

Tamimi and Sebastianelli (1998) cited in Lau & Idris (2001) identified that 48 percent of the barriers to TQM implementation were caused by people (soft elements). Lau & Idris (2001) finding showed that soft elements are critical to TQM tangible effects (productivity, market competitiveness and cost reduction). They mentioned the soft elements of TQM are top management leadership on quality, training and education, team work, employee involvement and trust. Human factors are the most influential on the implementation of TQM as compared to other factors (Grover, et al., 2006).

Improvement in the soft elements is important since there is adequate research proving that business performance is more heavily influenced by these elements of TQM (Gotzamani & Tsiotras, 2006).

Macdonald (1996) mentioned some of principal reasons for unsuccessfulness of TQM implementation in companies. These are:- lack of management commitment, the people were not really involved, lack of vision and planning, satisfaction with the quick fix, the process became tool bound, and Satisfaction with customer satisfaction, Culture change versus project approach, Quality management became institutionalized: throwing its quality problems over the wall to the "quality people".

2.3.5. Benefits of TQM

The adoption of quality conscious culture can help organizations to improve their performance through a cyclical effect: improved quality lead to improved customer satisfaction, which in turn lead to improved product reputation which can in turn led to increased sales and profits. Walsh, et al. (2002) identified that the adoption of TQM philosophy has many benefits to organizations among these: elimination of defects, reduced scrap and rework, reduced level of cost, increased level of efficiency and productivity and increase employee morale and motivation. Talavera (2005) finding showed that adoption of TQM helps company to improve productivity, reduction in cost and overall change in the way employees' value their work and organization, thereby resulting in significant improvement in performance and competitiveness.

2.4. Theoretical framework of the study

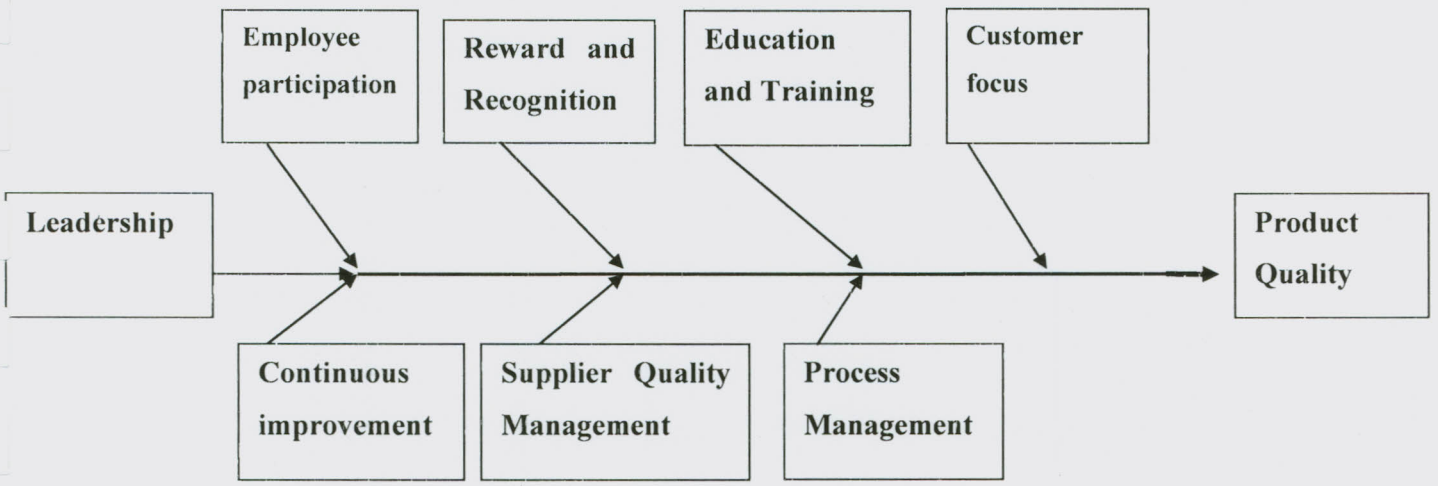
Based on the literature and previous studies a TQM model has been adopted to evaluate the practices of TQM in a manufacturing organization to be surveyed. TQM provides a generic concept for continuous improvement in quality and other performances.

Several authors agree that TQM is a philosophy that stresses a systematic, integrated, and consistent perspective involving everyone and everything. However, the definitions of TQM elements vary a lot. For examples, ISO 9000:2000 refers to eight principles of quality management and, the Malcolm Baldrige National Quality Award (MBNQA)

shows seven dimensions for a framework of quality management. In this study 8 dimensions of TQM are used to evaluate the TQM practices in Bedele brewery context.

This study adopt a TQM implementation frame work developed by Zhang, et al., (2000) which constitutes eight critical TQM implementation elements (enablers). This study guided by this framework.

TQM implementation frame work



2.5. Summary

TQM is one of the management philosophies which emphasizes quality in the entire organization and extends from supplier to customer. TQM is based on the following principles top management leadership, customer focus, continuous improvement, employee participation, reward and recognition, education and training, supplier relationship and process management.

Different quality experts contribute for the development of TQM. Among the quality guru, who contribute towards TQM are Deming, Juran, and Crosby. Quality award models can be used as an implementation framework for TQM. These quality awards are: the Deming Prize in Japan the European Foundation for Quality Management (EFQM) in Europe, and the Malcolm Baldrige National Quality Award (MBNQA) in the United States of America and Ethiopian Quality Award (EQA) in Ethiopia, and ISO 9001:2008. In addition, some TQM literatures from other researchers were reviewed. In this study, TQM consists of 8 constructs; leadership, customer focus, continuous improvement, process management, supplier relationship, employee participation, reward and recognition, and training and education.

CHAPTER THREE: RESEARCH METHODOLOGY

3. Introduction

This chapter discusses methodology adopted for the study and aspects of the research methodology including research design, data collection and data analysis methods.

3.1. Study area

This study was conducted at Bedele Brewery from March 1 to March 15, 2013. Bedele Brewery Share Company was established on October, 1993 under the ownership of the Federal government of Ethiopia. It is located in the South Western of Ethiopia, Oromia Region, Illubabor Zone, Bedele City, and 483 km from Addis Ababa. The company has production capacity of 300,000 hectoliter or 75,000,000 bottles of beer per year. The company sells its product in domestic and foreign markets. Heineken, the leading Dutch brewer owned Bedele brewery since August 2011 from the government of Ethiopia (Bedele Brewery Share company, 2012).

3.2. Research Design

The study adopted descriptive research design and both quantitative and qualitative methods were used. The role of research design is to connect the questions to data. Design sits between the two showing how the research questions will be connected to the data tools and procedures to use in answering them. Descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. Descriptive study sets out to collect, organize, and summarize information about the matter being studied (Punch, 2006).

3.2.1. Sampling

For this study an ISO 9000 certified company is selected judgmentally from Ethiopian manufacturing company; Bedele brewery is selected as it fulfills ISO 9000 certification and proximity to the researcher. ISO 9000 certification with at least three years of experience is used as minimum selection criteria (Gotzamani, et al., 2006) and the reason that ISO 9000 implementation is stepping-stone towards TQM journey (R & Tan, 2011; Dahlgaard, et al., 2007; McAdam & Jackson, 2002). Bedele Brewery fulfills this criteria

and the company certified starting from 2007 in ISO 9001:2000 version and now certified in 2008 version of ISO 9000 so the company suit for this study.

The populations of the study were employees working in the company. Employees from the company were selected randomly through stratified random sampling method. The population of the study stratified in departments for giving equal chance to all workers in all departments and to minimizing sampling errors. The reason to use stratified sampling is, first as the TQM philosophy implies that everyone who is working in the organization should be involved in quality improvement and responsible for quality. Second stratified sampling increases precision or help to get the maximum precision in estimation of the population parameters (Cochran, 1977). To incorporate all departments in the study, employees from each department selected based on proportional random sampling. Proportional random sampling used to minimize sampling error in selecting samples from the company and to avoid bad sample. In simple random sampling some departments may not be included if as they have small employees' and others may dominate because of large number. In addition to employees' department heads selected for interview.

3.2.2. Sample size

The total number of employees' currently working in Bedele brewery is 490 out of this janitorial workers, clerks, guards and temporary workers were excluded and finally 345 employees were considered as potential respondents for this study. Stratified random sampling method was used to select respondents; departments were used as strata to classify employees' in to non overlapping groups, finally proportional stratified random sampling was used to select respondents from seven strata (departments).

Cochran sample size determination is used for determining sample from the population. The sample size calculated at 95% confidence level and at 5% confidence interval (margin of error). Cochran's (1977) correction formula was used to calculate the final sample size. By using Cochran's formula for sample size determination, 181 samples were selected, for reserving to non response 10% of the sample size was added and totally 199 questionnaire were distributed.

A total of 199 questionnaires were distributed to respondents to rate the extent of implementation of each TQM activity, out of this 150 questionnaires were returned from this seven questionnaires were rejected due to missing data and unfilled. A total of 143 usable questionnaires were used for data analysis. The study also includes unstructured interview with department heads. The major departments included in the interview were production, quality assurance, marketing and sales, purchasing and supply and human resource management.

3.3. Data type and collection

3.3.1.1. Data type

Primary data

The study used primary data to evaluate the extent of TQM adoption and implementation level in the company. For this purpose the researcher used self administered questionnaire and unstructured interview to collect primary data from the respondents. Questionnaire was developed to assess the practice of TQM in the ISO 9000 certified company. The questionnaire and interview adopted from previous researches and from extensive reviewing of literature.

Secondary data

Secondary data was collected from journals, books, magazines, company manuals and other published materials. Extensive literature review was conducted from published researches in the subject area. The literature review in all aspects of TQM helps to provide a detailed understanding of the state of TQM today in terms of its research and its application within industries.

3.3.1.2. Method of Data collection

Both questionnaire and interview were used to collect primary data, self administered questionnaire were distributed for employee to rate the extent of implementation of each TQM activities in company. The questionnaire include five elements of TQM; leadership, employee participation, reward and recognition, training and education, and continuous improvement. Unstructured personal interview were conducted with five department

heads on process management, customer focus, and supplier relationship management, reward and recognition and on quality system of the company.

The questionnaire used to measure/assess TQM adoption in ISO 9000 certified company was adopted and customized from a standard TQM measurement constructs. This questionnaire is adopted from Zhang, et al., (2000) and Das, et al, (2008). They developed a standardize survey instrument for data collection in TQM researches. They develop a TQM constructs from extensive literature review and award models and empirically test the validity and reliability of the measurement tool.

Questionnaire preparation

All studies reviewed in this study are in English, so the original questionnaire was prepared in English. The questionnaire was targeted to Ethiopian manufacturing company to Bedele Brewery, so it is necessary to translate to Amharic by translator in cooperation with practitioner that is working in similar industry.

Following the methodology adopted in similar studies Zhang, et al., 2000 and Das, et al., (2008) a likert scale was used for all items in the questionnaire. Items in the likert scale measured as 1=not at all, 2 =low, 3= moderate, 4= high and 5= very high.

3.4. Validity and reliability

The questionnaire used to this study is adopted from the reliable and empirically validated TQM constructs from Zhang, et al., (2000) and Das, et al. (2008). The original questionnaire was developed and empirically tested to provide a reliable and validated TQM constructs to assess TQM implementation in ISO 9000 certified companies. The TQM constructs and items are customized to fit Ethiopian manufacturing companies.

Zhang, et al., (2000) developed an instrument for measuring TQM implementation in Chinese manufacturing firms. First he identified TQM constructs from extensive literature review and empirically tests the validity and reliability of the measurement tool in 212 Chinese manufacturing firms. Finally he identified 11 valid and reliable constructs 8 constructs are implementation elements (enablers) and the remaining three are performance measurements (results).

Das, et al. (2008), prepared a reliable and validated TQM constructs to measure TQM implementation in ISO 9000 certified manufacturing companies. They incorporated 275 managers from 275 manufacturing companies to evaluate TQM constructs and finally used factor analysis, reliability and validity tests to develop valid and reliable TQM constructs. They also review and compare previous TQM measurement instruments. Ten TQM constructs were identified and their reliability coefficients (Cronbach's) as ranged from 0.84 to 0.95. These constructs are top management commitment, supplier quality management, continuous improvement, employee involvement, reward and recognition, education and training, customer focus, product quality, product innovation and benchmarking. They guaranteed that other researchers can use this empirically reliable and valid TQM implementation measurement constructs.

To ensure content validity, for each elements of TQM a detailed variables are prepared to measure each construct (elements) in the scale. The items in the scale should cover sufficiently the scope of the construct for content validity. The researcher claims that, this questionnaire is valid (content) it has measurement items that cover all aspects of the variable being measured. Before administration of the questionnaire discussion on it was conducted with practitioner and academician and they give comments on the questionnaire. Based on the feedback some modifications were made on the questionnaire.

3.5. Data analysis

The study used descriptive statistics to analyze the collected data in order to evaluate the extent to which TQM are practiced in the company. Tarı (2005) similar to this study was used descriptive analysis to study TQM in ISO 9000 certified firms in Spain. Primary data collected using questionnaire was processed by the Statistical Package for Social Science (SPSS) for windows version 16.

3.6. Ethical consideration

This study is conducted for academic purpose and the information obtained from the case company is kept strictly confidential and not used for other purpose. Individual participants not identified in the analysis as only aggregated results is analyzed and presented.

CHAPTER FOUR: RESULT AND DISCUSSION

4. Introduction

This chapter presents the data analysis and findings from the questionnaires completed by employees of Bedele brewery and interview with department heads. The purpose of the study is to assess the practice of TQM in the company. A total of 199 questionnaires were distributed to employees to rate the extent of implementation of each TQM activity. Out of 199 distributed questionnaires 150 questionnaires were returned from this, seven questionnaires were rejected due to missing data and unfilled. A total of 143 usable questionnaires were used for data analysis.

The questionnaire has two sections, section one about demographic information of the respondents and part two includes questions for addressing the purpose of the study. Each questionnaire has a total of 50 questions categorized under five elements (constructs).

4.1. Respondents' background information

This section of the questionnaire covered the respondent's educational background, work experience and working department.

4.1.1. Respondents' educational background

The respondents were asked their educational qualification; table 4.1 presented respondent's educational background.

Table 4. 1 Employee educational background

Qualification	Frequency	Percent
12completed and below	1	0.7
Certificate or Diploma	71	49.7
Degree	61	42.7
Master and above	10	7.0
Total	143	100.0

Source: Own questionnaire, 2013

The respondents educational background shows that majority of respondents (49.7 %) have certificate and diploma, 42.2% of the respondents have degree and 10% of the respondents have Master and above.

4.1.2. Work experience

This question asked respondents' working experience in the company; table 4.2 depicted respondents work experience.

Table 4. 2 Respondents work experience

Employee Work experience		
Number of years	Frequency	Percent
1 and less than one year	1	0.7
1-5 years	37	25.9
6-10 years	62	43.4
10 and Above	43	30.1
Total	**143**	**100.0**

Source: Own questionnaire, 2013

The above table 4.2 depict that majority (43.4%) of the respondents have between 6-10 years of working experience, 30.1% have 10 years and above, and 25.9% have 1-5 years working experience. From the above result majority (73.5%) of the respondents have above 6 year working experience. This indicates that respondents are more familiarized and experienced in their job as well as in the company so they are capable enough to give the right answer to the question to be investigated.

4.1.3. Working department/section

This question asked respondents' working section in the company. Actually the questionnaire was distributed in departmental basis, because the methodology was used stratified random sampling so departments were used as a strata. Table 4.3 presented respondents working section.

Table 4. 3 Respondents working department

Department	Frequency	Percent
Production	64	44.8
Technical	39	27.3
Marketing	6	4.2
Human resource	10	7.0
Finance	12	8.4
Purchasing	6	4.2
Quality Assurance	6	4.2
Total	**143**	**100.0**

Source: Own questionnaire, 2013

Majority of the respondents (44%) work in production department and 27.3% are in technical, and 8.4% are in finance department.

4.1.4. Summary of respondent's demographic data

From the above tables, almost half of the respondents (49.7%) have a qualification of degree and above, majority of respondents (73.5%) have above 6 years of working experience and majority of respondents (44.8%) are working in production section. This indicates that respondents are potential for this study.

4.2. Assessment of Total Quality management

This section presents the main body of the questionnaire and interview that is designed to answer the basic research questions. The questionnaire part contains 50 questions categorized under five category, leadership, employee participation, continuous improvement, training and education, and reward and recognition. The questionnaire were distributed to employees' of the company to rate the level of implementation of each TQM activities. In addition to questionnaires personal interview was conducted with five department heads regarding process management, customer focus, supplier relationship, and reward and recognition with production, marketing and sales, purchasing and supplies, quality assurance and human resource departments respectively.

4.2.1. Leadership

Leadership is one of the critical elements of Total Quality Management, for successful implementation of TQM top management leadership plays a crucial role.

Under this construct different sub elements were prepared to measure the latent variable of leadership. These sub elements are top management commitment, top management participation, employee empowerment, and top management encouragement/support for employees and fact based decision making. The mean score for each sub elements and latent variable are presented below.

Table 4. 4 Mean score analysis of sub-elements of leadership

Sub elements of leadership	Mean	Std. Deviation
Top management commitment	3.5734	.94148
Top management Participation	3.0979	.88648
Employee empowerment	2.4615	.89418
Top management Support	3.1836	.76450
Fact based decision making	3.6873	.83161
Leadership	**3.1990**	**.66529**

Source: Own questionnaire, 2013

From the above table 4.4 the sub elements, employee empowerment is the least score (mean 2.46) which is implemented at low level and management by fact is the highest score (mean 3.67) implemented at high level. However the total score for quality leadership is the composite score of the above sub-scales which result a mean score of 3.2 which indicates that it is implemented at a moderately level. This needs the company to do more on employee empowerment which is implemented at low level.

4.2.2. Employees' participation

Employee participation is another critical element of TQM philosophy; this construct measured using two sub elements: team work and employee suggestion system.

Table 4. 5 Mean score analysis of sub-elements of employee participation

Sub elements of employees participation	Mean	Std. Deviation
Teamwork	3.3829	.81459
Employee Suggestion	2.2951	.79038
Employee Participation	**2.8390**	**.67045**

Source: Own questionnaire, 2013

The above table 4.6 shows that employees' suggestion is implemented at the low level with a mean score of 2.295 and team work is implemented moderately with a mean score of 3.38. The table below shows the total score for employees' involvement in the form of team work and in providing suggestion. The mean score result of employees participation (mean 2.84) show that employee involvement is practiced in the company at a moderate level.

4.2.3. Recognition and reward

Recognition and reward is other element of Total Quality Management, for successful implementation of TQM employee's effort should be rewarded and recognized. For measuring the level of implementation of this construct two sub elements; reward and recognition program availability and working environment improvement are used to measure the latent variable.

Table 4. 6 Mean score analysis of reward and recognition

Sub-elements of reward and recognition	**Mean**	**Std. Deviation**
Reward Recognition Plan	**2.1049**	.46668
Working environment improvement	3.8298	.83250
Reward and Recognition	**2.9674**	**.46808**

Source: Own questionnaire, 2013

The mean score result of sub elements show that working environment improvement score 3.829 which indicate that it is implemented at high level, however reward and recognition is implemented at low level. Table 4.9 below depicts the total score for

recognition and reward. The mean score result 2.96 of reward and recognition indicates that implementation of reward and recognition in the company is at a moderate level.

4.2.4. Education and training

Training and education is one of the crucial constructs of Total quality management used to equip employees the necessary skill and knowledge. Table 4.10 below presented the result of sub criteria used to measure the latent variable implementation of education and training in the company.

Table 4. 7 Mean score analysis of education and training

Sub-elements of education and training	Mean	Std. Deviation
Training and education plan	2.8517	.97885
Quality awareness training	3.0047	.89139
Training and Education	**2.9282**	**.86149**

Source: Own questionnaire, 2013

The above score on both training and educational plan and quality awareness indicate that they are implemented moderately. The total means score for education and training is 2.9 indicate that education and training are implemented at a moderate level.

4.2.5. Continuous Improvement

Continuous improvement is one of the pillars of the philosophy of Total Quality Management, employees asked to rate the level of practice of each activity under the continuous improvement. Table 4.12 below presented the mean score result.

Table 4. 8 Mean score analysis of Continuous improvement

	Mean	Std. Deviation
Continuous Improvement	2.4224	.68919

Source: Own questionnaire, 2013

The result shows that continuous improvement practiced at low level with the mean score of 2.42. However the company was certified in ISO9000 starting from 2000 version and now 2008 version but continuous improvement practiced at low level.

4.2.6. Customer focus

Customer focus is one of the pillars of TQM because customers are the ultimate judge of quality. So, companies' existence depends on customers. In today's dynamic world customers' needs and wants change at rapid pace hence organizations should continuously monitor and understand their needs.

The vice-Head of the department of marketing and sales were interviewed on customer focus. The response for the interview with vice- head of the department is presented below.

Q1. How did the company collect information about customers' needs and expectations? How often?

Regarding the first question, the vice –Head give an explanation how the company undertakes market investigation. The response for this question is presented as follow:

- The company performs market investigation in different ways among these methods, customer satisfaction survey and customer compliant and information system. The extent of market investigation is conducted on a continuous or ongoing basis however the customer satisfaction survey is conducted periodically.
- The company conducts customer satisfaction survey periodically. For conducting this activity, marketing and sales teams are used. Each team assesses and provides feedback on customer's satisfaction especially on retailer (Hotels, restaurants and groceries) and also monitors competitors' action.

Q2. **Has the company established a customer complaint collection and management system and how often did you used?**

- The company has a system for collecting and managing customers' complaint. The system is open for all customers in Ethiopia as well as abroad. The company

uses a sole agent for distributing its product to customers. Each sole agent receives customers' complaints and informs to the company accordingly.

Q3. Does your company treat customer complaints with top priorities?

- The company treats customer's complaints on top priorities and immediate action is taken to solve their complaints. The company use compliant information as a key source of information for improving the quality of products and services. For facilitating this, the company hires marketing professional in each sales region. Each marketing professional processes customers' complaints and send to the company to take actions on complaints as soon as possible.

Q4. Does your company have effective customer relationship management?

- The company has established a sound relationship with customers i.e. hotels, restaurants, groceries and tries to expand market shares through customer relationship. The company provides after-sale service for customers. The company has indeed put a slogan "Customers are the Kings"

4.2.7. Supplier relationship

Supplier relationship is another pillar of Total Quality Management. To know how this element is practiced in the company interview were conducted with Head of Purchasing and Supply department. In the interview different issues were raised. A detailed analysis on supplier relationship is presented below:

Q1. Does the company pursue long-term and stable business relationships with suppliers?

- The company currently has both local and foreign suppliers of raw materials. The local suppliers who supply malt and sugar are monopolized; sugar is supplied only from Ethiopian Sugar Corporation and malt from Asela Malt factory, with regard to domestic suppliers the company has no other alternative. However, they work together with agreement for a long term supply the raw materials.
- Foreign suppliers who supply special malt for export beer are selected from internationally known suppliers based on different criteria's. Currently the company uses Heineken suppliers.

Q2. How long the company has a relationship with current supplier?

- The company has established a long-term relationship with domestic suppliers starting from its establishment. However foreign suppliers have been changed in recent years after Heineken took the ownership of the company.

Q3. How do you select suppliers to the company? What are the criteria?

- Suppliers are selected using different criteria among this, quality has top priority. The following criteria are used to choose suppliers: ISO certification (on some items), Suppliers' facilities and production capabilities, Quality of products and services, etc.

Q4. Does your company participate in suppliers operation? If yes how?

- The company does not directly participate in suppliers operation. However the company informs its requirements and monitors whether requirements are fulfilled. The company informs quality specifications and making inspection regularly on incoming raw materials.

Q5. Does the company have supplier performance evaluation system for measuring suppliers' performance?

- The company evaluates supplier's performance and communicates the results to suppliers. The evaluation includes onsite observation and capacity utilization (domestic suppliers). The company has partnership agreements with most of its suppliers, however inspection is conducted on incoming (purchased) materials from suppliers at all times. This inspection is required due to the nature of the raw materials, as some of raw materials are sensitive to weather. So, checking at all time is required to prevent poor quality.

4.2.8. Process Management

Process management is one of the critical elements of TQM philosophy that advocate organizations should understand the process to make improvements. For assessing how this element is practiced in the company interview were conducted with the Head of Production department. The responses for each question by the Head of Production department are presented as follow:

Q1. Does the company clearly explain its core and supporting process?

- The company has clearly identified and documented its core process, as well as communicated to all employees in the form of Quality Manual. As he replied one of the requirements of ISO 9000 is documentation of all process. The company certified starting from ISO 9000:2000 version and now certified ISO9000:2008 version. The factory has clearly identified, documented and communicated its core process to employees.

Q2. How the production process are managed and controlled? What tools and techniques are used to manage the process?

- The company uses different process control techniques to minimize variations and to produce quality products. The company uses some Statistical Process Control (SPC) tools in the production. For example different diagrams (fermentation diagram), check sheets, and control charts, etc.
- Employees' use check sheets during the production process and have to document all the must be operations followed and this check sheet also used in the check phase. The company is now on the introduction and implementation of the Deming cycle "PDCA" (Plan, Do, Check, Act) for process management on a continuous basis.
- A new process management technique that the company is now ready for implementation is Total productive management (TPM), this tool concerned with maximizing the efficiency of production machinery through participation of all employees. The company is now in the preparation phase and facilitates the awareness creation of TPM in the company through establishing a TPM coordinator at the company level. The TPM concept familiarize to workers through training and through posting concepts of TPM in work area. I have observed the concept of TPM in the wall of the office and in production areas. He explained the PDCA Deming wheel and the other four concepts of TPM (focus, visualization, participation and sustainable) are the core elements of TPM.
- The company has implemented the japans 5 S' (Seiri, Seition, Seiso, Seiketsu-Seiketsu, Shitsuke) and they posted the concept and definition of 5S' in all work

areas to familiarize as well as to incorporate it in workers normal daily work. I have observed the 5S' with their definition in production site and offices as well.

Q3.How often does the department review the inspection reports?

- The department (production) did inspection on incoming (raw material) and outgoing products in manufacturing site. Inspection reports are reviewed on a daily basis to take corrective and preventive actions.
- We can conclude that the company is well practiced process management using different techniques and tools. They use different quality control tools like check sheet, different diagrams, 5S' and continuous improvement tool PDCA cycle under TPM.

4.2.9. Human Resource Management

Human resource management is one of the core elements of Total Quality Management with its emphasis on human resource as the invaluable resource of the organization. Interview was conducted with Human Resource Management Head on recognition and reward, and education and training. The response from the human resource management department head is presented below:

Q1. Does your company have a reward and recognition programs? If so what are they?

- The company currently has salary promotion and bonus system as a reward for employees. Bonus is given to all employees' based on performance at the end of the fiscal year and employees' salary also increased on the basis of performance. The performance appraisal is individual based and not team based.
- Till date the company does not have any recognition program for well performing employees'.

Q2. Does your company improve the working environment regularly? If so what are the improvements?

- The company gives great attention to employees' safety and well being by providing suitable equipment and devices. For example employees' in the production areas must wear safety clothes, shoes and eyeglass. Employees in

production area are not allowed to do their job without fulfilling safety requirements. As he told without safety no one is allowed to enter in the production site, if an employee did one month salary will be taken as a penalty.

- We can conclude that reward and recognition is implemented or practiced at a low level. However, improvement in working environment is implemented at a high level.

Q3. Does the company have an effective education and training plan?

- Now the company has different educational and training plans to be implemented in the future. Different trainings were given to employees like on ISO 9000, 5S' and now on TPM.
- Trainings are given to employees' based on job specific and common to all. However, the company gives more attention on job specific trainings for example production, technical and quality assurance departments take more training than other departments. Trainings are not given on regular basis to workers rather it is given as when it is needed.
- The company encourages and facilitates employees to improve their education. For example the company has recently negotiates with Bedele Technical and vocational College to provide formal education and the company pays tuition fees for the selected employees.

Q4. Does the company provide quality awareness trainings regularly to existing and for newly recruited employees?

- Quality awareness training for employees' is not given on a regular basis. For example training on ISO 9000 quality management was given at the time of certification at the company level. However employees in quality assurance departments take training and education on a regular basis. A newly selected employee takes training regarding his/her job just after selection.
- We can understand from the interview that, training and education activities in the company are implemented moderately.

4.2.10. Quality system

Interview was conducted with the Head of Quality Assurance department regarding to current quality management practices of the company. The response from the Head of the department is presented as follow:

Q1. What is the current quality management system of the company?

- Currently the company certified in ISO 9001:2008 quality management systems, the company was certified since 2000 version of ISO 9000. Quality assurance department is responsible unit for control quality in the company. Heineken introduced new quality management systems like 5HMS (5 Heineken manufacturing stars), TPM and 5S's, among these the japans 5S's are implemented and TPM is on the preparation phase.

Q2. **How are the quality manuals prepared? Who is the responsible for preparing it?**

- The company has quality manuals since it was certified in ISO 9001:2000. Manuals were prepared through cross functional teams and verified by management representative'. Each department has representative team in the preparation of quality manuals. As the Head of Quality Assurance department explained that; to be certified in ISO 9000 the company must fulfill the standard requirements. Among the requirements, documentation is the second requirement which includes preparation of quality manuals and quality policy is a mandatory. The company has quality policy and communicated to all employees, I have observed quality policy posted at offices, production areas, and outside the offices.
- All departments have participated in the preparation of quality manuals and reviewed by top management for final approval.
- We can conclude from the interview that, the company is quite successful in quality manual preparation and communicating quality policies across the company. The company implements the requirements of ISO 9000s' i.e. documentation (quality manual, quality policy and document control) and process management successfully.

4.3. Discussion

The main objective of this study is to assess the extent of TQM adoption in Bedele brewery and to investigate the contribution of ISO 9000 certification on adoption of TQM. The company was certified in ISO 9000 since 2007 and now certified in 2008 version of ISO 9000. It is more experienced in ISO 9000 quality management system. The elements of the revised 2000 version of ISO 9000 were established based on TQM philosophy. Different researcher argue that proper implementation of TQM can serves as a stepping stone towards TQM journey.

Employees' of the company rate the level or extent of implementation of each TQM activities in the company and interview was conducted with department heads to know how the company practiced on TQM activities.

The findings of this study indicate that customer focus, supplier relationship, and process management are practiced at a high level.

The result of this study reveals that process management is implemented at high level in the company. This finding supports the previous research done in Malaysian ISO 9000 certified manufacturing firms by R & Tan, (2011). They found that among from the other standards process management was practiced at high level. They argued that the standard requirements of documentation in ISO 9000 helps firms to identify and documented all process, this help organizations to manage process in consistent manner.

The finding of this study indicates that customer focus is practiced at high level in the company. This result also supports Gotzamani & Tsiotras (2006) findings; they found that ISO 9000 certification highly contribute towards customer focus and for the development of a formal system for collecting and processing customer complaints. Juran (1980) and Crosby (1997) emphasized continuously satisfying customer's need and expectations are the key for competitive advantage.

The result of this study shows that supplier relationship management is practiced at a high level. According to Mehra, et al. (2001), 50 percent of a company's non conformances are caused by defective purchased materials and he argued supplier

involvement and partnership is critical for quality improvement and successful TQM implementation.

The result of this study also reveals that leadership, employee participation, reward and recognition, education and training elements of TQM are practiced at moderate level in the company. This study supports previous research findings of Gotzamani & Tsiotras (2006). They conducted a longitudinal study on the contribution of ISO 9000 towards TQM in Greek industry and they found that ISO 9000 standards implementation highly contribute towards improvement in the areas of employee training and education, and employee encouragement for active participation in improvement activities. However, Tarı (2005) found out ISO 9000 certified firms implement human aspects, such as work teams, suggestion schemes, recognition and reward at lower extent than technical. However, the result of this study shows that some of the soft elements (customer focus and supplier relationship management) are implemented at higher and one hard element (continuous improvement) is implemented at low level which is contradicted with Tarı (2005) results. Tarı (2005) argued that adoption of TQM allows firms to acquire these human factors and the use of TQM tools.

The finding of the study indicates that reward and recognition is implemented at moderate level. Mehra, et al. (2001) argues organizations should design reward and recognition system to promote behaviors that contribute to firms' wellbeing and the reward system should be team-based.

The result of continuous improvement indicates that this element of TQM is implemented at a low level. However, the company has now introduced the tool for continuous improvement the 'Deming PDCA (Plan, Do, Check, and Act) cycle under TPM program.

Generally, the findings of this study shows that the company is moderate in TQM adoption, except continuous improvement all other factors are implemented at moderate and above level.

Most previous researches categorized the critical elements of TQM as 'soft' and hard factors. Many researchers claimed that soft factors or the human aspect of TQM are more

critical and predictors for successful implementation of TQM (Samson and Terziovski (1999) cited in Taylor & Wright, 2003 and Hoang, et al., 2010).

The result of this study shows that soft elements i.e. leadership, employee participation, recognition and reward, and education and training are implemented at moderate level and customer focus and supplier relationship are implemented at high level. Mehra, et al. (2001) found that total employee involvement is necessary to ensure excellence for all quality dimensions and teams have become a necessity rather than a choice, Lakshman (2006) also support Mehra, et al. (2001), the involvement and participation of managers and employees at all levels is important to the successful management of quality in organizations. He also found that management behavior and lack of management commitment is the predominant cause of failure of TQM. Abdullah, et al. (2008) found that soft factors such as management commitment, customer focus and employee involvement are the most influential on the performance of the organization.

Many researchers claimed that ISO 9000 certification or standard implementation has a positive impact on quality management practices. They found that ISO 9000 serve as a stepping stone or initial point for TQM journey. The findings of this study show that some of the critical elements of TQM were implemented at a high level and majority of the elements are at moderate level. However continuous improvement is practiced at low level.

The result of this study indicates that process management is implemented at high level. This may be due to those ISO 9000 certification forces organizations to describe and document its key process and make them more transparent. So, we can claim that ISO 9000 certification contribute towards process management. This finding is consistent with the results of Coleman & Douglas (2003); he found that ISO 9000 certification provides a process control maturity and quality system development. Coleman & Douglas, (2003) also claimed that the maturity of process management laid down a basin line for continuous improvement however, this is contradict with the finding of this study which continuous improvement is practiced at a low level. He claimed that the maturity of process control provides organizations to understand the process and helps to know where improvement is needed.

Tarı (2005) conducted a study on 106 ISO 9000 certified Spain firms and found hard (technical) part of the standards are practiced at higher extent and people orientation (soft) factors are implemented at lower level. However, the finding of this study shows that soft (human aspect) are implemented at a moderate level and continuous improvement (hard factor) is practiced at lower level in the company.

Tarı (2005) recommended that firms must improve their people orientation and use quality improvement techniques and tools to a higher extent in order to progress towards TQM. Costa & Lorente (2004) conducted a case study in 14 biggest Spain manufacturing firms and they recommended that, it is important organizations to adapt ISO 9000 requirements to facilitate TQM implementation otherwise; the only advantage of the registration is the "permission" to sell in the market.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5. Summary, conclusion and recommendation

5.1. Summary

The purpose of the study is to assess the practice of TQM and to look the contribution of ISO 9000 certification towards adoption of critical elements of TQM in the company. Stratified sampling is used to select respondents from the company, 143 usable questionnaires are used in the analysis.

Nearly half (49.7%) of respondents had first degree and above, 73.5% of the respondents have above six year working experience in the company, and majority (44.8%) of respondents work in production department and five department heads were interviewed. This indicates that respondents can provide the required information asked on the questionnaire.

The company practiced quality leadership at moderately. Among the sub elements in leadership, employee empowerment and fact based decision are implemented at a low and high level respectively.

Employee participation practiced at moderate level in the company and each sub-element is also implemented at a moderate level.

Reward and recognition is practiced at moderate level. However, the sub-element of working environment improvement is practiced at high level and in contrast reward and recognition programs are at low level.

Education and training element of TQM is implemented at moderate level in the company.

Continuous improvement is practiced at low level. However, one of the tools of continuous improvement the 'PDCA' Deming wheel is introduced under the package of TPM.

The company practiced customer focus, process management and supplier relationship at a high level.

The company is certified in ISO 9000 starting from 2007 and has six years of experience certification. In addition the company has implemented the japans 5S' and in preparation phase to implement TPM.

5.2. Conclusion

Based on the findings of the study on the critical elements of TQM; Bedele Brewery had moderate level of TQM adoption. Among the elements; process management, customer focus and supplier relationship are implemented at a high level. Leadership, employee participation, reward and recognition, and training and education are practiced at a moderate level. However continuous improvement is practiced at low level.

Based on the findings of this study and the literature ISO 9000 implementation contribute towards adoption of TQM. Particularly in this study ISO 9000 certification contribute for better implementation of process management, customer focus and supplier relationship.

Soft factors of TQM; leadership, employee participation, training and education, and reward and recognition are practiced at a moderate level and customer focus and supplier relationship are practiced at a high level in the company. Among the hard factors, process management is practiced at a high level. This indicates that the company is in a good journey towards full implementation of TQM. Many researches showed that soft factors of TQM are more influential than hard elements of TQM.

5.3 Recommendation and Suggestion

Based on the findings of the study, the researcher forwards the following suggestions:

- The company should do more on continuous improvement to implement TQM at full extent. The company should facilitate the awareness creation and usage of PDCA cycle i.e. continuous improvement tools through training and workshops. Even though the company is moderate in practice of TQM activities, it should be do more to implement them at their full extent.

- It is recommended that more studies should be carried out covering the brewery as well as a manufacturing industry to establish effective implementation framework. It is also recommended to conduct longitudinal research in this case company to track what changes have happened after full implementation of Heineken quality management systems.

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APPENDIXES

JIMMA UNIVERSITY
COLLAGE OF BUSINESS AND ECONMOIMIC
MASTER OF BUSINESS ADMINSTRATION

Dear respondent

First thank you for participating in this Study

This assessment tool used to assess TQM adoption in a company. The first column lists the TQM practices. The second column lists the addressed area(s) for each practice. Thus, respondents rate the company TQM practice implementation using a score between "1 (not at all)" and "5 (very high)". The number "1" means that the firm is not at all practiced it and while the "5" indicates that the firm is strong in practicing it. In order to help the respondents in rating each TQM practice implementation, scoring guidelines is developed.

Scoring Guidelines for the next questions related to the implementation of each practices

1 (not at all) ------ the activity is not practiced (implemented) at your level
2 (low) -------little information is available about existence of the activities
3 (moderate) ------ you know the activity and get the chance to participate/implement
4 (high) ------ you are familiar and have experience in it
5(very high) ---- the activity is implemented very routinely and everyone know it

The success of this survey depends on your participation and frank responses. Hence, I would greatly appreciate your assistance in answering the questionnaire. Please be assured that your responses will be kept strictly confidential. Individual participants will not be identified in the analysis as only aggregated results will be analyzed and presented.

If you have any queries, please contact me by *091282884*- Dirgu getenet

Part I. Background information: please mark a "√" on the box that fits you.

Educational background

Primary ☐ High school ☐
Collage /university ☐ Master and above ☐

Work experience

Less than 1 one ☐ 1-5 year ☐
6- 10 year ☐ above 10 years ☐

Department _____

PART I. The following statements pertain to Quality Leadership practices in the department /company. Please tick (√) or encircle your answer in the appropriate box.

S.No	TQM practices	Not at all (1)	Low (2)	Moderate (3)	High (4)	Very high (5)
	Top management commitment					
1.	Extent to which top management demonstrate consistent commitment to the vision of the company	1	2	3	4	5
2.	Extent to which top management demonstrate commitment to quality through actions rather than words	1	2	3	4	5
3.	Extent to which top management effort to establish an organization-wide quality culture.	1	2	3	4	5
	Top management participation					
4.	Extent to which top management lead quality management implementation standing from the front	1	2	3	4	5
5.	Extent to which top management participate in assessing quality management implementation progress	1	2	3	4	5
6.	Extent to which top management give quality related training and lectures to employees'	1	2	3	4	5
7.	Extent to which top management communicate with and listen to employees	1	2	3	4	5
8.	Extent to which top management eager and willing to learn from employees' experience	1	2	3	4	5
	Employees' empowerment					
9.	Extent to which top management empower employees to solve quality problems by themselves	1	2	3	4	5
10.	Extent to which top management empower employees to make some urgent decisions	1	2	3	4	5
	Top management encouragement/support/ to employees'					
11.	Extent to which top management encourage employees' involvement in quality management activities	1	2	3	4	5
12.	Extent to which top management trust and believe that employees can do things better	1	2	3	4	5
13.	Extent to which top management encourage employees to list the firm's shortcomings	1	2	3	4	5
14.	Extent to which top management encourage employees to focus on quality of work	1	2	3	4	5
	Fact based decision making					
15.	Extent to which top management use various information for	1	2	3	4	5

	decision-making.					
16.	Extent to which top management make decisions based on facts rather than by imagination and assumption	1	2	3	4	5

Part II. The following statements pertain to <u>Employee Participation in the department and company</u>. Please tick (√) or encircle your answer in the appropriate box.

S.No	**Team work**	**Not at all (1)**	**Low (2)**	**Moderate (3)**	**High (4)**	**Very high (5)**
17.	Extent to which teams or quality circles are used to solve problems	1	2	3	4	5
18.	Extent to which cross-functional teams are used to solve cross-functional problems.	1	2	3	4	5
19.	Extent to which employees' encouraged to participate in cross functional teams /QC circles	1	2	3	4	5
20.	Extent to which cross functional teams/quality circles effect or results evaluated	1	2	3	4	5
	Employee suggestions					
21.	Extent to which effective employee suggestion systems are available	1	2	3	4	5
22.	Extent to which employees' encouraged to submit suggestion	1	2	3	4	5
23.	Extent to which top management give great value to employees' suggestions	1	2	3	4	5
24.	Extent to which employee suggestions are implemented	1	2	3	4	5
25.	Extent to which the company provide recognition and reward for employee suggestions.	1	2	3	4	5

Part III. The following statements pertain to <u>Recognition and Reward</u> in the department and company. Please tick (√) or encircle your answer in the appropriate box.

S.no	**Recognition and reward program**	**Not at all (1)**	**Low (2)**	**Moderate (3)**	**High (4)**	**Very high (5)**
26.	Does a company have effective recognition and reward plan	1	2	3	4	5
27.	Extent to which objective and measurable criteria used for rewarding and recognizing employees'	1	2	3	4	5
28.	Employees' salary increased on the basis of employees' performance	1	2	3	4	5
29.	Provide attractive bonuses to well performing employees (teams, departments, or business Units).	1	2	3	4	5
30.	Extent to which moral awards given to well-performing employees by means of a thank-you note, award certificate	1	2	3	4	5
31.	Extent to which employees are rewarded fairly and rationally	1	2	3	4	5
	Working environment improvement					
32.	Extent to which working environment is improved for recognizing employees' quality improvement efforts	1	2	3	4	5
33.	Extent to which the company pay sufficient attention to employee well-being, safety, morale, and growth	1	2	3	4	5
34.	Extent to which the company provide suitable equipment, devices, or tools to care employees' health and safety	1	2	3	4	5

Part VI. The following statements pertain to <u>Education and training</u> in the company. Please tick (√) or encircle your answer in the appropriate box.

S.no	**Education and training plan**	**Not at all (1)**	**Low (2)**	**Moderate (3)**	**High (4)**	**Very high (5)**
35.	Have an effective education and training plan in the division/company	1	2	3	4	5
36.	The company formulate the education and training plan on the basis of employees' requirements and the firm's resources	1	2	3	4	5
37.	The company provides sufficient resources for implementing the education and training plan.	1	2	3	4	5

38.	Extent to which team members encourage to present their ideas during team work	1	2	3	4	5
39.	Extent to which teams share knowledge among each other regularly	1	2	3	4	5
	Quality awareness training and education					
40.	Extent to which the company provide quality awareness training to employees regularly/ongoing basis	1	2	3	4	5
41.	The company provide extensive quality awareness training to newly recruited employees	1	2	3	4	5
42.	Extent to which the company train employees on understanding ISO 9000:2000 philosophy	1	2	3	4	5
43.	Extent to which the company give training to employees on Quality control tools and techniques and their using	1	2	3	4	5
44.	The company provide different training to different employees according to their actual job requirements	1	2	3	4	5
45.	Extent to which the company aware the quality of the company product is the resopnsibility of all employees	1	2	3	4	5

Part.V. The following statements pertain to <u>Continuous Improvement practices in the</u> department/ company and. Please tick (√) or encircle your answer in the appropriate box.

S.no	**Continuous Improvement**	**Not at all (1)**	**Low (2)**	**Moderate (3)**	**High (4)**	**Very high (5)**
46.	Extent to which employees are encouraged to give improvement mechanisms regularly	1	2	3	4	5
47.	Extent to which employees' are involved in performance evaluation and improvement programs	1	2	3	4	5
48.	Extent to which employees encouraged to improve their work regularly	1	2	3	4	5
49.	Management encourage and reward employees to introduce improvement methods continuously	1	2	3	4	5
50.	Extent to which goals and objectives are evaluated with a view to improve them on a regular basis	1	2	3	4	5

Interview question for department heads

Part I. Interview question for marketing managers about customer focus

1. How did the company collect information about customers' needs and expectations? How often?
2. Has the company established a customer complaint collection and management system and how often did you used?
3. Does your company treat customer complaints with top priorities?
4. Does your company have effective customer relationship management?

Part II. Interview question for purchasing manager regarding Supplier relationship management

5. Does the company pursue long-term and stable business relationships with suppliers?
6. How long the company has a relationship with current supplier?
7. How do you select suppliers to the company? What are the criteria?
8. Does your company participate in suppliers operation? If yes how?
9. Does the company have supplier performance evaluation system for measuring suppliers' performance?

Part III. Interview question for production manager about Process management

10. Does the company clearly explain its core and supporting process?
11. How the production process are managed and controlled? What tools and techniques are used to manage the process?
12. How often does the department review the inspection reports?

Part IV. Interview question for Human Resource manager about human resource management

13. Does your company have a reward and recognition programs? If so what are they?

14. Does your company improve the working environment regularly? If so what are the improvements?

15. Does the company have an effective education and training plan?

16. Does the company provide quality awareness trainings regularly to existing employees and for newly recruited employees?

Part V. Interview question for quality assurance manager about Quality system of the company

17. What is the current quality management system of the company?

18. How the quality manuals prepared? Who is the responsible for preparing it?