ST. MARY UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT ON PRACTICES AND CHALLENGES OF KAIZEN IMPLEMENTATION IN SELECTED MANUFACTURING COMPANIES OF ADDIS ABABA

BY

BIRUK ASFAW GEBREHANNA

ENROLMENT No: SGS7/0317/2006B

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOLS OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF GENERAL BUSINESS ADMINISTRATION

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LIST OF ACRONYMS

DHG: DH Geda Blanket Factory Plc

EKI: Ethiopian Kaizen institute

EPA: European Productivity Agency

Excel: Excel Plastics Plc

GDP: Gross domestic products

GRIPS: National Graduate Institute for Policy Studies

JIT: Just in time

MoFED: Ministry of Finance and Economic Development

PDCA: Deeming wheel represent Plan, Do, check and Act

PLC: Private Limited Company

ODA - Official development assistance

TQC: Total quality control

TQM: Total quality management

TICAD: Tokyo international conference for African Development

WWII: World war two

3F: Finfine Furniture Factory Plc

5s: Five S

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Abstract

In Ethiopia, manufacturing sector is at its infancy. In comparison with the agriculture and service sectors, the manufacturing sector has a limited share in terms of production, employment, and exports. To overcome such challenges on 28th October, 2010 Ethiopian Kaizen institute was legally established and some companies started implementation of Kaizen. The researcher selected three Manufacturing Companies of Addis Ababa namely Excel Plastic Plc, DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc. By taking in to consideration the main objective of the study, the questionnaire was designed and distributed to 240 employees of the companies in proportion 46 questionnaires to Excel Plastic Plc, 74 questionnaires to DH Geda Blanket Factory Plc and 120 questionnaires to Finfine Furniture Factory Plc. From the distributed questionnaires 215 were collected. The result showed that Kaizen tools, Kaizen philosophies, Kaizen principles, and Kaizen three pillars are applied on the companies at moderate and below level of implementation and differed among each other. Further, the selected manufacturing companies have harvested monetary and non monetary benefits by implementation of Kaizen. The research finding also discovered that all the three companies failed to implement suggestion system and all the three companies especially Excel Plastic Plc and DH Geda Blanket Factory Plc faced various challenges on kaizen implementation.

Key words: Kaizen, Kaizen tools, Kaizen philosophy, Kaizen principles, Kaizen three pillars

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Globalization has reduced the world to a small village and creates market competition all over the world. In today's competitive environment, implementing of viable business management has a great concern for organizations to enhance productivity, quality and profit. Those business organizations which implement viable business management are advantageous to overcome the competitive environment. For instance, as per Singh and Bisht (2013) Japanese were successful as kaizen become the component of their business management.

Kaizen is Japans word which stands for contentious improvement in any organization which involves all employees from upper governing bodies to the cleaning crew. It can be applied for continuous improvement in personal life, home life, social life, and working life as a whole (Khan, 2011; Kr, 2011; & Singh and Bisht, 2013).

Japan offers assistance for kaizen in many developing countries through private channels such as intra-company technology transfer and support for local suppliers, as well as through public channels such as Official Development Assistance (ODA) and guidance provided by various public organizations (GRIPS, 2009). On May 2008, at the fourth Tokyo International conference for African Development (TICAD IV), Japan promised to cooperate in the reinvigoration of African's economic growth. After Japan showed its willingness to help with Ethiopian's industrial development, it gave a seminar in collaboration with Ethiopian Ministry of Trade in Addis Ababa on November 4, 2009. As a result, the Governments of Ethiopia and Japan agreed to conduct a Development Study on quality and productivity improvement (KAIZEN) in Ethiopia (Desta, undated). On 28th October, 2010 Ethiopian Kaizen institute /EKI/ legally established under Regulation No 256/2011 (EKI-JICA, 2014).

Considering the usefulness of Kaizen in fighting the challenges of globalization, a number of Ethiopian firms have been instructed by Ethiopian's Ministry of Industry to launch a pilot project using the Kaizen management system in order to internationalize, and accomplish the

following objectives:" first, to formulate a national plan to enhance both quality and productivity in the industrial sector; second to produce a manual for explaining and guiding these activities: third, to transfer relevant skills and techniques to the staff members of Ethiopians Kaizen Unit" (Weldemariam, 2010, cited in Desta, undated). To enhance their product quality and productivity, Kaizen Management system has been implemented in Excel Plastic Private Limited Company, DH Geda Blanket Factory Private Limited Company and Finfine Furniture Factory Plc Private Limited Company.

The researcher wants to assess the extent of Kaizen implementation, contribution of Kaizen in the above companies, and assess their challenges. Since kaizen is a continuous never ending process the researcher will offer suggestion for the areas which need further enhancement through new way of doing or improving the existing performance.

1.2 Overview of the Companies

Excel Plastics Plc is a manufacturing company engages in manufacturing of various plastic products. The company is located in Addis Ababa City, Bole sub city. The company is one of the second round manufacturing private limited companies nominated by government to implement Kaizen. The Company implemented Kaizen on June 2012. Furthermore, DH Geda Blanket PLC is blanket manufacturing company located in the Addis Ababa City, Akaki Kality Sub City. The company implemented of Kaizen on August 2013. Besides, Finfine Furniture Factory Plc is furniture manufacturing company located in Addis Ababa City, Akaki Kality Sub City. The company manufactures various furniture products and was implemented Kaizen on December 2014.

1.3 Statement of the Problem

Some studies explore a number of possible constraints on enterprise growth in Africa, such as excessive regulations, market failures in insurance and credit markets, corruption, limited contract enforcement, increasing labor costs, and poor public infrastructure (e.g. Gunning and Megistae, 2001; Sleuwaegen and Goedhuys, 2002; Bigsten et al, 2003, 2004; Fafchamps, 2004; Söderbom and Teal, 2004 & Eifert et al, 2008, cited in Sonobe et al, 2010). However,

according to (Sonobe et al, 2010) poor management system in the region is being neglected surprisingly.

As per GRIPS (2009), African manufacturers are not only disadvantaged by the technological gap but also by the lack of knowledge in key managerial methodologies like kaizen which realized productivity improvements with little additional investments.

In Ethiopia, manufacturing sector is at its infancy. In comparison with the agriculture and service sectors, the manufacturing sector has a limited share in terms of production, employment, and exports. In 2009, the industry share of GDP value added was 10.7 percent while that of manufacturing was 4 percent. These shares are smaller than the Sub-Saharan averages of 28 percent and 10.2 percent for industry and manufacturing, respectively (World Bank, 2011, cited in Melaku, 2013). Estimates by MoFED (2011) cited in (Melaku, 2013), also showed an almost constant manufacturing share of GDP at about 5 percent, with a contribution of about 3.5 percent coming from medium and large manufacturing and about 1.5 percent coming from small and cottage industries.

As per Desta (2014), many manufacturing companies in Ethiopia are plagued by problems as high quality rejects, high inventories, long lead time of production, high costs of production, and inability to cope with customer orders due to lack of using key managerial methodologies like kaizen.

Empirical study made by Asfaw (2014) on Wonji Shoa Sugar Factory found that there are some considerable benefits obtained by the company by implementing kaizen even at moderate level of achievement. Also, on his study Haile (2015) on selected Metal Industries of Ethiopia found that the companies are benefited by Kaizen but there are some pitfalls and challenges that needs to get appropriate attention of concerned stakeholders.

The analysis of Kaizen Implementation in the Northern Ethiopia's Manufacturing Industries by Desta (2014) found that employees of the firm lacked full capacity to accept the kaizen management system, and the firms did not create lean enterprise that could have minimized waste, and some of the executive managers of the three pilot companies were themselves not committed to the kaizen teamwork.

The above literatures can prove that proper Kaizen implementation will benefit any organization and also there is observed gap in Kaizen implementation in some Ethiopian Manufacturing companies. Accordingly, the researcher wants to assess practices of kaizen implementation and its challenges in Selected Manufacturing Companies of Addis Ababa and will investigate areas which need further improvements.

1.4 Basic Research Questions

Research questions which help to achieve the broad objectives are.

1. What is the contribution of Kaizen to the companies?
2. To what extent the manufacturing companies in Addis Ababa are operating in accordance with the Kaizen tools, Kaizen philosophy, Kaizen principles, and Three pillars of Kaizen?
3. What are the challenges of the companies during and after implementation of Kaizen?

1.5 Objectives of the Study

1.5.1 General objective

The main objective of the study is to assess implementation of kaizen Management philosophy in some selected manufacturing companies; Selectively, Excel Plastics Private Limited Company, DH Geda Blanket Factory Private Limited Company and Finfine Furniture Factory Plc Private Limited Company.

1.5.2 Specific objectives

In line with the general objective, the research will assess the following specific objectives. These are:

- ✓ To assess the contribution of kaizen management philosophy.
- ✓ To examine magnitude of kaizen implementation within the companies.
- ✓ To pinpoint the challenges faced by the companies during and after implementation of kaizen.

1.6 Definition of terms

Kaizen - Japanese word for continuous improvement in any organization (Bisht, 2013).

Gemba - Gemba is a Japanese word meaning 'real place,' where the real action takes place (Thessaloniki, 2006).

Gembutsu - Clear display of tangible objects (Schonberger, 1996, cited in Thessaloniki 2006).

Muda - Japanese word used for waste (Kr, 2011).

1.7 Significance of the Study

This study might be used for managements of each company to evaluate and take appropriate adjustment action based on the findings. Similarly, other manufacturing companies which implement Kaizen might also be able to share experiences to overcome related drawbacks. Other organizations like Ethiopian kaizen institute, Educational service providers and other policy makers can use the research as input for their future actions and needs. Finally, for future researchers, this study will serves future research who wanted to study Kaizen.

1.8 Scope of the Study

This study is geographically limited to Kaizen implementation in some selected manufacturing companies of Addis Ababa. The researcher selected three manufacturing companies namely – Excel Plastics Plc, DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc. The study is also limited to assessment of the existing practices of Kaizen at the companies and other organizational issues rather than Kaizen are not included in this research.

1.9 Organization of the Study

The paper is organized as follows. Chapter one is an introduction of the study, which contains background of the study, overview of the companies, statement of the problem, basic research questions, objectives of the study, definition of terms, significance of the study, and scope of the study. Chapter two entirely focused on the literature review. Chapter three presents research methodology. The fourth chapter is concerned the analysis and presentation of data and the last chapter contains summary of the major findings, conclusion, limitation of the study and recommendations.

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Overview of Kaizen

Kaizen is a Japanese term that means continuous improvement taken from words 'Kai', which means continuous and 'zen' which means improvement. Some translate 'Kai' to mean change and 'zen' to mean good, or for the better (Khan, 2011). It also defined Kaizen as continuous improvement in personal life, home life, social life, and working life as a whole. As related to the work place kaizen means continuous improvement involving managers and workers, customers and suppliers alike (Kr, 2011).

The origin of Japans kaizen movement was the quality control method imported from the United States (US) in the post WWII. This adapted method, which became known as kaizen, and spread rapidly among Japanese companies including a large number of small and medium-sized enterprises. It subsequently spread overseas as Japanese business activities expanded abroad and Japanese companies began to build production networks with local companies (GRIPS, 2009).

Japanese were successful as kaizen become the component of their business management. Quality circles, automation, suggestion system, just-in-time delivery, kanabn and 5s - which is Sorting, Set in order, Shine, Standardize and Sustain are all included within the kaizen system of running a business. Kaizen involves setting standards and then continuously improving those standards. To support the higher standards kaizen also involves providing the training, materials and supervision that is needed for employees to achieve the higher standards and maintain their ability to meet those standards on and ongoing base (Singh and Bisht, 2013).

In many developing countries Japan offers assistance for kaizen through private channels such as intra-company technology transfer and support for local suppliers, as well as through public channels such as official development assistance (ODA) and guidance provided by various public organizations (GRIPS, 2009).

On May 2008, at the fourth Tokyo International Conference for African Development (TICAD IV) also known as the Yokohama Action Plan, Japan promised to cooperate in the reinvigoration of African's economic growth. Given that Ethiopian's manufacturing sector was only about 5% of the country's GDP, it showed no hesitation and jumped to take advantage of the Japanese offer help Ethiopia across its industries. Japan's offer proposed techniques that could accelerate and improve the quality and productivity of Ethiopian's manufacturing enterprises. After Japan showed its willingness to help with Ethiopian's industrial development, it gave a seminar in collaboration with Ethiopian Ministry of Trade for about 300 attendees in Addis Ababa on November 4, 2009. As a result, the Governments of Ethiopia and Japan agreed to conduct a Development Study on quality and productivity improvement (KAIZEN) in Ethiopia (Desta A, undated). On 28th October, 2010 Ethiopian Kaizen institute legally established under Regulation No 256/2011 (EKI-JICA, 2014).

2.2 Kaizen elements

According to Kr (2011) Kaizen is constructed at least by two elements namely, improvement /change for the better and ongoing / continuity. Lacking one of those elements would not be considered as kaizen. For instance, the expression of "business as usual" contains the element of continuity without improvement. On the other hand, the expression of "breakthrough" contains the element of change or improvement without continuity. Kaizen contain both elements.

2.3 Kaizen tools

According to Imai (1986; 1997) cited in (GRIPS, 2009) kaizen is an umbrella concept for a large number of Japanese business practices. It encompass Customer orientation, Robotics, Automation, Workplace discipline, Small-group activities, Cooperative labor management relations, Total Quality Control (TQC), Quality Control Circle (QCC), Suggestion System, Total productive maintenance (TPM), Kamban, Quality improvement, Just in time, Zero defects, Productivity improvement, and New-product development.

1. Customer orientation: The objectives of production of goods are aiming to customer will and capability to buy the product, 2. *Robotics*: In manufacturing process information controlled and processed by using automated machine and feedback from computer used, 3. *Automation*: Is the use of various control systems for operating equipment such as machinery, processes in factories, boilers and heat treating ovens, switching on telephone networks, steering and stabilization of ships, aircraft and other applications and vehicles with minimal or reduced human intervention, 4. *Discipline in the workplace*: Discipline is ability to win ones weakness and control emotion and firm stand to follow what is considered as right, with regard to workplace discipline his or her thinking will be substituted by organization discipline rules, 5. *Small-group activities*: it focuses on using small group in might consist from 3-20 individuals, and 6. *Cooperative labor management relations:* Cooperative labor management relation is harmony relationship between management and labor (Wikipedia, cited by Asfaw, 2014).

7. Total quality control (TQC): The Japanese approach to quality control, stressing continuous improvement through attention to manufacturing detail rather than attainment of a fixed quantitative quality standard (Anil and Suresh, 2009, p266).

8. Quality Control Circle (QCC): Refers to small groups of frontline workers organized with the goal of continuously managing and improving the quality of products, services and work. There are three basic principles of activity: 1) exercising human ability and bringing forth unlimited potential, 2) valuing human nature and creating cheerful workplaces where people feel rewarded by their work, and 3) contributing to improvement and development of the company's stature (Japan Industrial Management Association, 2005, cited in GRIPS, 2009).

9. Suggestion system: A Suggestion System is the method by which the ideas and suggestions of employees are communicated upwards through the management hierarchy to achieve cost savings or improve product quality, workplace efficiency, customer service, or working conditions. Examples range from simply placing suggestion boxes in common areas, to implementing formal programs with committees reviewing ideas and rewards given for successful adoption of those ideas (Imai, 1986, 1997, cited in GRIPS 2009, p4).

10. Total productive maintenance (TPM): It focuses on keeping all equipment in best condition to prevent breakdowns and delays in manufacturing process. TPM have the goal of increasing production, job satisfaction and morale of employee by maintaining plants and equipment, it will improve efficiency rate of equipment and reduction of cost by eliminating breakdowns and defects (Lemma 2008, cited by Asfaw, 2014, p12).

11. Kamban: Is a tool for communication in just in time. Its meaning is signboard the following process worker gather parts from previous process by leaving a Kamban which indicate a given quantity to be delivered, by doing so inflow of parts can be coordinated (Ventures1000.com, cited by Asfaw, 2014, p12).

12. Quality improvement: Garvin (1983) cited in (Brown et al, 2001) define quality is conformance to requirements by having this we can improve quality from time to time.

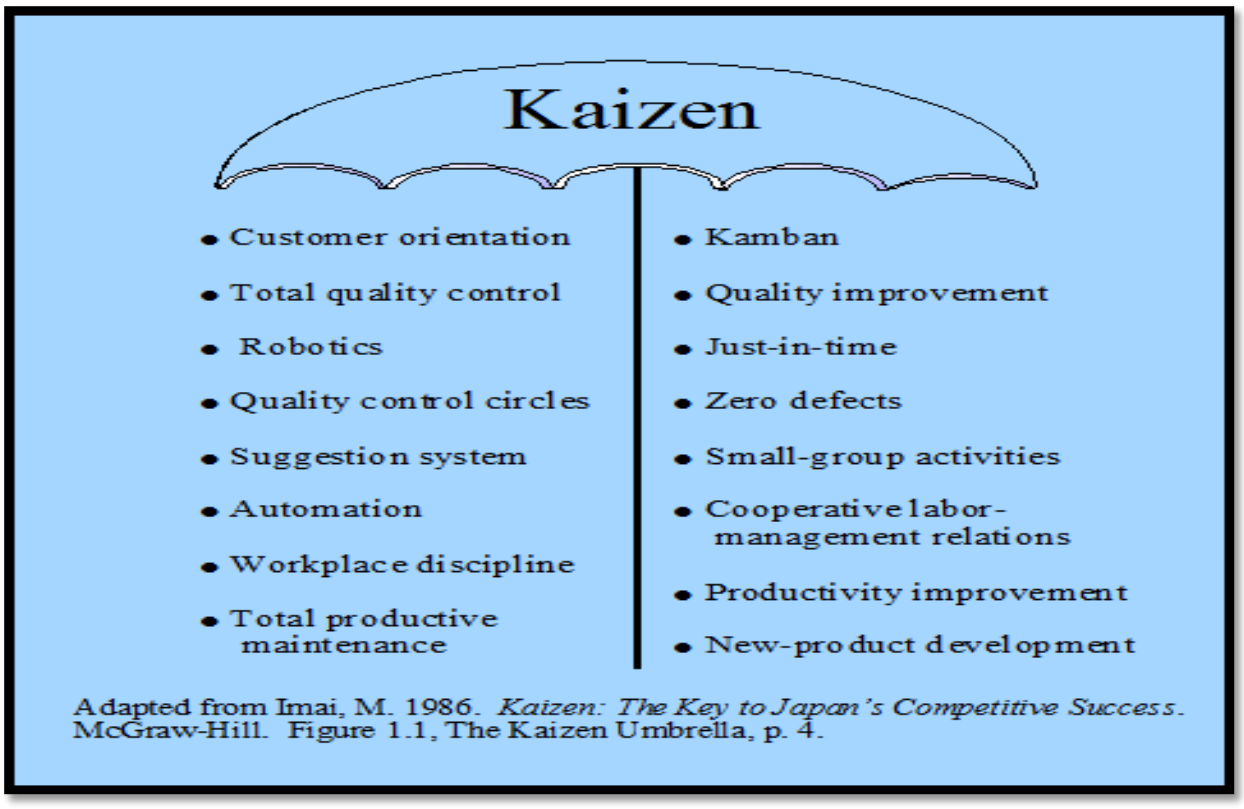
13. Just in time: A manufacturing system whose goal it is to optimize processes and procedures by continuously pursuing waste reduction (Anil and Suresh, 2009,p266).

14. Zero defects: A program to change workers' attitudes about quality by stressing error-free performance (Anil and Suresh, 2009, p277).

15. Productivity improvement: Productivity is a ratio of output to input in production, if we make high output with a lower input our productivity can be improved (Asfaw, 2014, p13).

16. New-product development: It is a full process of bringing a new product or service to market (Asfaw, 2014, p13).

Figurer 2.1 Kaizen tools



Source: Kaizen tools (Imai (1986) cited in GRIPS (2009)

2.4 Kaizen Philosophy

According to Thessaloniki (2006, p3), Kaizen Philosophy listed as; 1- Leadership, 2- Cross functional Teams, 3- 5S, 4- Productivity Improvement, 5- Process Focus, 6- Discipline In the Workplace, 7- Teams, and 8 - Improvement.

In accordance with Maxwell (1993) ***Leadership*** is defined as influence. Nothing is more or less. And, as per Rivenq (2011, pp 1-2) ***Servant leadership*** is defined as a form of leadership focusing on the personal growth of followers. Ten essential characteristic of a servant-leader listed as 1, listening, seeking the will of people and communication importance; 2, Empathy, accepting how and what other by understanding them; 3, Healing, the ability to help make whole; 4, Awareness, being awake; 5, persuasion, influence others based on arguments instead of positional power; 6, conceptualization, thinking beyond the present-day need and stretching it into a possible future; 7, Foresight, foreseeing outcomes of situations and working with

intuition; 8, Stewardship, holding something in trust and serving the need of others; 9, Commitment to the growth of people, helping others to achieve growth of personal, professional and spiritual; 10, Building community, emphasizing that local communities are essential in a personal‟ life. Other authors expanded into 44 different characteristics, which can be regrouped into six major items: 1, Empowering and developing people 2, Humility 3, Authenticity 4, Interpersonal acceptance 5, providing direction 6, stewardship.

Cross-Functional Teams: is a group of people from various experts working toward a common goal. It might include from production, sales and human resource. Members from outside of the organization might be included (Wikipedia). According to Thessaloniki (2006) the term *"Five S"* is derived from the first letters of Japanese words referred to five practices leading to a clean and manageable work area: seiri (organization), seiton (tidiness), seiso (purity), seiketsu (cleanliness), and shitsuke (discipline). As per Asfaw (2014) ***Productivity Improvement*** is improving productivity ongoing basis, Process Focus is focusing with the process instead of focusing on the final result Kaizen, ***Discipline In the workplace*** refers every employee's act in a discipline manner in work place; good behavior must be developed and practices from time to time, ***Teams*** refers Kaizen works on group basis instead of individual basis, and ***Improvement*** is nonstop change for better.

2.5 Kaizen principles

The kaizen process is based on several rules that may vary in detail from company to company. But the underlying concepts are the same: Be open minded, Maintain a positive attitude, Reject excuses, Seek solutions, Ask Why? Why? Why? There are *no* stupid questions, Take action. Implement ideas immediately, Don't seek perfection, That is, do what can be done *now*, with the resources at hand, Use all of the team's knowledge. The experts are frequently found on the factory floor, Disregard rank. All team members are equal and everyone has something to contribute, *Just do it!!* (Khan, 2011, p179).

Kaizen fundamentally differs from traditional continuous improvement processes because it is almost entirely action-based. Teams are charged with both developing and implementing their solutions; they create processes or change existing processes, leaving a *new* process in place. Kaizen is very much a *hands-on* process. Team participants not only plan, they clean

equipment, sort tools, move machinery (within the bounds of safety), assemble, build, and run the process. They get tired, they get frustrated, and they *get dirty together*. Rank is not recognized—factory managers and company officers work side by side with machine operators to find and implement the best of their ideas. The team's job is to make change happen. To create and leave in place a *new way of doing things* ibd.

2.6 Three pillars of Kaizen

(Housekeeping, Muda/Waste Elimination, and Standardization)

2.6.1 Housekeeping

Housekeeping is an indispensable ingredient of good management. Through good housekeeping, employees acquire and practice self-discipline. Employees without self-disciplines make it difficult to provide products or services of good quality to the customer (Kr, 2011, p123).

For proper housekeeping a valuable tool or methodology is used, the 5S methodology. The term "Five S" is derived from the first letters of Japanese words referred to five practices leading to a clean and manageable work area: seiri (organization), seiton (tidiness), seiso (purity), seiketsu (cleanliness), and shitsuke (discipline). The English words equivalent of the 5S's are sort, straighten, sweep, sanitize, and sustain. 5S evaluations provide measurable insight into the orderliness of a work area and there are checklists for manufacturing and non manufacturing areas that cover an array of criteria as cleanliness, safety, and ergonomics. Five S evaluation contributes to how employees feel about product, company, and their selves and today it has become essential for any company, engaged in manufacturing, to practice the 5S's in order to be recognized as a manufacturer of world-class status (Thessaloniki, 2006, p9).

2.6.2 Muda/Waste Elimination

In Japanese, the word Muda means waste. Any activity that does not add value is Muda. People in Gemba either add value or do not add value. This is also true for other resources, such as machines and materials. Muda elimination can be the most cost-effective way to improve productivity and reduce operating costs. Kaizen emphasizes the elimination of Muda in Gemba rather than the increasing of investment (Kr, 2011, p123).

To give some examples, there are presented here Muda in both manufacturing and office settings described below:

Table 2.1Muda in Manufacturing and Office

Muda in Manufacturing	Muda in Office
➢ Shipping defective parts ➢ Waiting for inspection ➢ Walking and transporting parts ➢ Overproduction ➢ Excess inventory which hides	➢ Passing on work that contains errors ➢ Signature approvals, bureaucracy ➢ Walking or routing documents ➢ Copies, files, a lot of papers ➢ Excess documentation

Source: Thessaloniki (2006, p10)

According to Kr (2011, p124) there are various aspects of Muda eliminations that are explained as follows:

Muda of over production – This is regarded as the worst type of Muda. If you produce more than your customer needs, you have extra pieces that need to be taken care of, such as handling and keeping in stock.

Muda of inventory – This is the result of over production. If you process only Produces what the next process needs, you can eliminate Muda of inventory altogether.

Muda of waiting – How often do you see operators just waiting for the material to arrive or the machine to start, No value is added when operators are waiting and looking.

Muda of motion – When the operator is moving around, looking for tools or going to get the work pieces, no value is added.

Muda of transportation – When materials are moving on the trucks, forklifts, or on the conveyer, no value is added.

Muda of producing rejects – Producing rejects leads to rework, or else rejects must be thrown away.

Muda of processing – By rearranging the working sequence, often you can eliminate a particular process.

2.6.3 Standardization

Standards can be defined as the best way to do the job. Products of services are created as a result of a series of processes; certain standard must be maintained at each process in order to assure quality. Standards also can prevent recurrence of the same problem. As a general rule of thumb, introducing good housekeeping in Gemba reduces the failure rate by 50percent, and standardization further reduces the failure rate by another 50 percent (Kr, 2011, p123).

Standards are set by management, but they must be able to change when the environment changes. Companies can achieve dramatic improvement as reviewing the standards periodically, collecting and analyzing data on defects, and encouraging teams to conduct problem-solving activities. Once the standards are in place and are being followed then if there are deviations, the workers know that there is a problem. Then employees will review the standards and either correct the deviation or advise management on changing and improving the standard. It is a never-ending process and is better explained and presented by the PDCA cycle (plan-do-check-act), known as Demming cycle (Kilian, 1992, cited in Thessaloniki, 2006, p13)

Figure 2.2 PDCA cycle

Source: Thessaloniki, 2006, p13

The management plans, each employee follow the plan activities, the inspectors check , and the management correct or secure every step , systematically. It is important to be seen that each one employee follows his own PDCA cycle. **PLAN** refers to selecting the theme, understanding the current status and setting objectives, and analyzing the data in order to identify root causes; **DO** is the process of establishing countermeasures based on the data analysis; **CHECK** is confirming the effects of the countermeasures; and **ACT** is to establish or

revise the standards to prevent recurrences, and reviewing the above processes and working on the next steps. Then on each one stage of the cycle the appropriate practices and tools that used for, are presented :P – Plan - Pick a project (Pareto Principle), Gather data (Histogram and Control Charts), Find cause (Process Flow Diagram and Cause/Effect Diagram Pick likely causes (Pareto Principle and Scatter Diagrams), Try Solution (Cause/Effect , ‘’5W AND 1H ‘’ methodology : who, what, why, when, where, how) D – Do - Implement solution; C – Check, Monitor results (Pareto, Histograms, and Control Charts); A – Act , Standardize on new process (Write standards, Train, Foolproof, Quality-At-The-Source [QUATS]) (Imai, 1986, cited in Thessaloniki, 2006, p14).

Standardization process has few key features. It represent the best, easiest, and safest way to do the job, Offer the best way to preserve know-how and expertise, Provide a way to measure performance, Show the relationship between cause and effect, Provide a basis for both maintenance and improvement, Provide objectives and indicate training goals, Provide a basis for training, Create a basis for auditing or diagnosis, and Provide a means for preventing recurrence of errors and minimizing variability (Thessaloniki, 2006).

2.7 The Concept of Quality Circles

Quality circle is a group of staff who meet regularly to discuss quality related work problems so that they may examine and generate solutions to these. The circle is empowered to promote and bring the quality improvements through to fruition. Thus the adoption of quality circles (quality improvement team) has a social focus. There must be commitment from senior management, unit management and supervision, other staff and of course the circle members. A team of 3-9 people need to participate freely together, to challenge assumptions and existing methods, examine data and explore possibilities. They need to be able to call in expertise and ask for training. The quality circle needs a budget so that members can be responsible for tests and possible pilots. The need a skilled team leader who works as a facilitator of team efforts not a dominator. The circle needs to have a very good approach to analyzing the context of the problem and its situation defining just exactly what the problem is and the relationship between its component parts. How it identifies and verifies that the causes are indeed the causes. These must be understood otherwise solutions as developed may fail to address the real problem (Thessaloniki, 2006, pp 23 -24).

2.8 The Concept of Quality

Quality is often described as getting things done 'right first time, every time'. A number of writers have attempted to clarify the nature of quality (Brown et al, 2001, p267). However, Garvin (1983, p40) cited in (Brown et al, 2001) identifies five different definitions of quality are – 1)**Transcendent quality** is 'innate excellence' – an absolute and universally recognizable high level of achievement, 2)**User-based quality** 'lies in the eye of the beholder', so that each person will have a different idea of quality, based on its fitness for use by the individual, 3)**Value-based quality** is performance or conformance at an acceptable price or cost. In a sense the distinction between 'high' and 'low' quality is largely meaningless – quality is no longer a term associated with 'high end' market tastes, but rather is measured by each particular customer segment within an overall market, 4) **Product-based quality** is a precise and measurable variable, and goods can be ranked according to how they score on this measure. This allows customers and manufacturers to compare products, sometimes without even using or experiencing the product, and 5) **Manufacturing-based quality** is 'conformance to requirements', adhering to a design or specification. This view of quality takes little account of customer needs or preferences. In reality, successful quality management is achieved by linking the needs of the customer with operations capabilities.

2.9 The Concept of productivity and profit

According to Anil and Suresh (2008), productivity refers to the efficiency of the production system. It is the concept that guides the management of production system. It is an indicator to how well the factors of production (land, capital, labor and energy) are utilized. Arithmetic ratio of amount produced (output) to the amount of resources (input). Productivity can be expressed as:

Productivity = Output/Input

European Productivity Agency (EPA) has defined productivity as, *"Productivity is an attitude of mind. It is the mentality of progress, of the constant improvements of that which exists. It is the certainty of being able to do better today than yesterday and continuously. It is the constant adaptation of economic and social life to changing conditions. It is the continual effort to apply new techniques and methods. It is the faith in progress." (*Anil and Suresh, 2008, p172).

As per Charles et al, (2012) profit is an excess of revenue from expenses as a result of operations.

2.10 The Concept of visual management

The role of visual management as a concept, practice or tool is promoted in Kaizen through individuals or teams to help people identify problems or promote empowerment. The practice of visual management involves the clear display of tangible objects (Gembutsu), charts, lists, records of performance, so that both management and workers are continuously reminded of all the elements that make the Visual controls make it easy for everyone to identify the state of a normal or abnormal condition, thus providing operators and management visibility into performance. Visual controls tracking performance should capture the team effort rather than the individual. Visual controls usually lead to visual management, which can be particularly efficient if it is used adequately to replace the bureaucratic monitoring systems that many companies employ in order to maintain control and attempt to prevent anything from going wrong. Visual controls must be relevant, easy to understand by the people performing the task being measured, and must emphasize proactive actions, rather than blaming, so the visual workplace will Improve safety, Make critical information available at a glance, Gain immediate measurable results including: reduced floor space, decreased process, time and machine down time, Keep everyone informed of production schedules, daily attendance, inventory levels, Reduce search time by as much as 50%, Reduce inventory as much as 10% to 30%, Raise morale and on-time delivery, Introduce techniques that will allow significant reductions in lead time (10-25%), Build communication between shifts, work areas, and organization levels, Improve quality 10-20% (Schonberger, 1996, cited in Thessaloniki 2006, pp6-7).

2.11 The Suggestion System

Kaizen covers every part of a business. From the tasks of laborers to the maintenance of machinery and facilities, Kaizen has a role to play. All improvements will eventually have a positive effect on systems and procedures. Many top Japanese executives believe that Kaizen is 50 percent of management's job, and really, Kaizen is everybody’s job! It is important for management to understand the workers role in Kaizen, and to support it completely. One of the main vehicles for involving all employees in Kaizen is through the use of the suggestion system. The suggestion system does not always provide immediate economic payback, but is

looked at as more of a morale booster. Morale can be improved through Kaizen activities because it gets everyone involved in solving problems. In many Japanese companies, the number of suggestions made by each worker is looked at as a reflection of the supervisor's Kaizen efforts. It is a goal of managers and supervisors to come up with ways to help generate more suggestions by the workers. Management is willing to give recognition to employees for making efforts to improve, and they try to make this recognition visible. Often, the number of suggestions is posted individually on the wall of the workplace in order to encourage competition among workers and among groups (Khan, 2011, pp183-4).

2.12 Kaizen and Western approach

There are notable conceptual differences between the Japanese and the Western management approaches. In particular, kaizen contains many features unique to the Japanese industrial experience. First, the Japanese approach emphasizes small incremental changes under existing technology while the Western approach favors innovation based on technological breakthroughs (Clark et al, 2009 & Imai, 1986 and 1997, cited in GRIPS, 2009, p6). Second, the Japanese approach focuses on human elements and advocates peoples process-oriented efforts for improvement, while the Western approach is more inclined towards reviewing performance from results-based criteria (Imai, 1997, cited in GRIPS, 2009, p6).

Kaizen does not necessarily call for large investments, such as installing new machines or hiring experts. Instead, it requires continuous effort and commitment at all levels of the workforce to propose and practice the use of existing human and capital resources to improve quality and productivity (Imai, 1986, cited in GRIPS, 2009, p6).

Table 2.2: Comparison of Kaizen versus innovation -1-

S/N	FACTOR	KAIZEN	INNOVATION
1	Improvement Size	Small improvements	Major improvements
2	Improvement Basis	Conventional knowledge	Technology of equipment
3	Main resource	Personal involvement	Money investment
4	People involved	Many people	A few champions
5	Orientation	Improve the process	Improve results
6	Economy	Even in slow economy	Mainly in good economy

Source: Thessaloniki (2006, pp 15-16)

Table 2.3: Comparison of Kaizen versus innovation -2-

S/N	COMPARISON	KAIZEN	INNOVATION
1	Effect	Long term	Short term
		Un-dramatic	Dramatic
2	Pace	Small steps	Big steps
3	Time frame	Continuous & incremental	Intermittent & non incremental
4	Change	Gradual & consistent	Abrupt & volatile
5	Involvement	Everybody	"Champion"
6	Approach	Collectivism, group efforts, systems approach	Rugged individualism, individual ideas & efforts
7	Mode	Maintenance &	Scrap
		Improvement	& Rebuild
8	Spark	Conventional know-how & state of the art	Technological breakthroughs, new inventions, new theories
9	Practical Requirements	Little investment	Large investment
		Great effort to maintain	Little effort to maintain
10	Effort orientation	People	Technology
11	Evaluation criteria	Process & efforts for better results	Results for profits
12	Economic condition	Slow growth economy	Fast growth economy

Source: Imai (1986, p.25) cited in GRIPS (2009, P.6)

2.13 Advantages of Kaizen

According to Singh and Bisht (2013), Kaizen has advantage in reductions of waste in areas such as inventory, waiting times, transportation, worker motion, employee skills, over production, excess quality and in processes. Further, it improves space utilization, product quality, use of capital, communications, production capacity and employee retention and it will improve the capital projects process in the on-going process of continually making small improvements that improve processes and reduce waste. Kaizen also provides immediate results. Instead of focusing on large capital intensive improvements, Kaizen focuses on creative investments that continually solve large numbers of small problems.

For late starters like Ethiopia, the Japanese tools of hands-on technical cooperation were expected to improve organizational capacity, empower and continuously improve the quality of workers, and add value to their products so that they would become productive and produce internationally competitive products that could meet the needs of a global market (Desta, undated).

2.14 Kaizen Training

In order to implement Kaizen, a team needs to be set up to look at a workplace. The employees within the Kaizen team need to be trained in Kaizen logic. The underlying of Kaizen is that it makes employees become aware that by using their skills to improve a process, results in the business becoming more successful, which lends itself to meaning more job security for the employee. Kaizen requires bringing employees together to look at their jobs, sections, and processes, to realize changes that will help performance (Khan, 2011, p182).

2.15 Employee Motivation

As per Steven et al (2008, p35) motivation refers the forces within a person that affect his or her direction, intensity, and persistence of voluntary behavior.

2.16 The Transferability of kaizen techniques to non Japan cultures:

Kaizen management system is spreading through the world. It has become a goal for many manufacturing companies to build a culture of continuous commitment to improvement. However, to be effective, the following five organizational culture ground rules are needed for transferability of the Japanese kaizen method to other non – Japanese countries (Desta and Asfaw, 2015, p10)

As suggested by Recht (2008) cited by (Desta and Asfaw, 2015, p10) this five factors are 1) clear employee orientation, supported (contractually or verbally) by a non –lay-of policy 2) employees who are committed to a company's long term viability; 3) transparent and free flow of information, both the vertical axis and between unites that belong to the same hierarchal level; 4) empowered employees, i.e, employees that have the information and skills needed to make decisions on a wide range of issues concerning their own working environment; and 5) employees who are both process –and results-oriented.

2.17 Challenges in implementing kaizen in Africa

As per GRIPS (2009), there are a few challenges in implementing *kaizen* in Africa. Firstly, power may be very much concentrated in the hands of top managers, whereas the basic concept of *kaizen* is empowering the workers in *gemba*. It may be a challenge for managers to change their attitude and trust the workers in *gemba*. Secondly, workers without sufficient educational backgrounds may not understand tables and figures. Since visualization of production and quality performance is one of the key tools of the *kaizen* method, separate training for workers may be required to develop a full understanding of the tools. Thirdly, the sources of productivity loss are often found outside the company, particularly delays in the delivery of materials and sudden interruption of orders from retailers and traders due to oversupply in the markets.

2.18 Related Empirical Studies

Empirical study conducted by Chi et al (2015) on Transferability of Kaizen Practices in Vietnamese Manufacturing Companies found that that there is positive correlation on Kaizen practices and culture's dimensions in relation to performance of manufacturing companies in Vietnam. The results of the study suggest that manufacturing firms in Vietnam should adopt and adapt Kaizen practices effectively and flexibly to enhance the Performance and achieve competitive advantage.

On his study Tadesse (2014) on kaizen implementation process, success stories, challenges and employees' work attitude at Wonji/Shoa Sugar Factory found that Kaizen has been creating company values system for change, and employees are acquiring new skills as a result of kaizen and positively involved in kaizen activities and kaizen decision making, and the determinant commitment shown by top management and employees of the company are encouraging. Further, both employees and management have positive perception for the company value system. Despite, the study evidenced same challenges like lack of skilled man power, pessimistic impression on the kaizen suggestion system, lack of adequate training and information about kaizen, and established system for training and education, lack of understanding about Kaizen management tools and techniques, difficulty to break still rigid hierarchical structures and employee resistance to change. And, according to study made by

Asfaw (2014) on effects of kaizen implementation at Wonji Shoa Sugar Factory found that the company had harvested both financial and non financial benefits by implementing kaizen at moderate level.

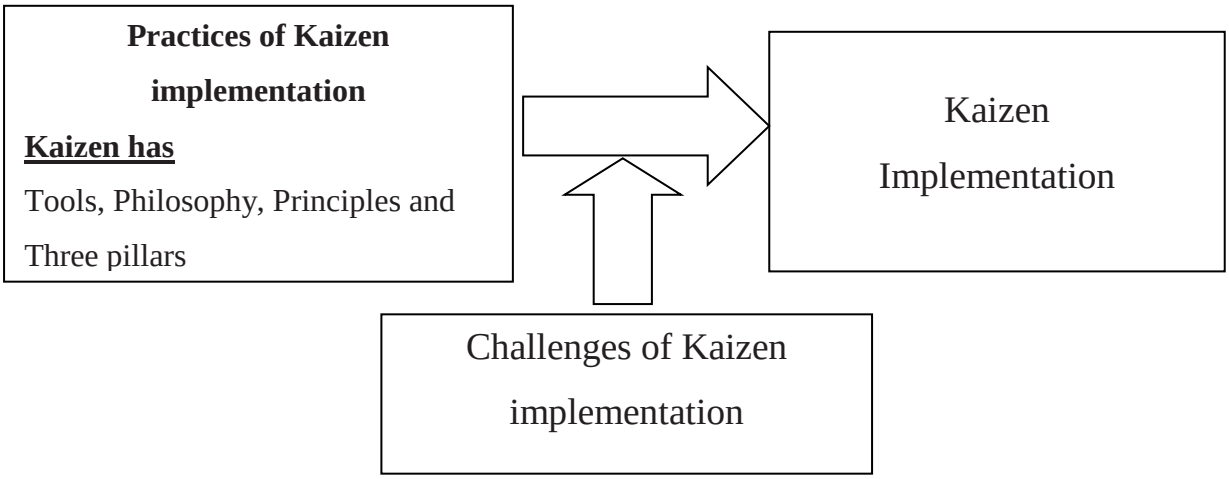
As per empirical study on Challenges and Practices of Kaizen Practice in selected metal Industries of Ethiopia by Haile (2015) found that Metal Industries are obtained considerable benefits by Kaizen implementation but there are some pitfalls and challenges that needs to get appropriate attention of concerned stakeholders.

On the other hand, result of pilot study analysis of Kaizen Implementation in the Northern Ethiopia's Manufacturing Industries such as Mesfin Industrial Engineering Plc, Almada Textile Factory Plc, and Shaba Leather and Tanning Industry Plc conducted by Desta (2014) disclosed that employees of the companies lacks full capacity to accept the kaizen management system, and the firms did not create lean enterprise that could have minimized waste, and some of the executive managers of the companies were themselves not committed to the kaizen team work.

2.19 Conceptual framework

For successful kaizen implementation organization managements as well as employees must have clear understanding about kaizen. Thus, proper training and education have to be given to all level of employees including top level managers. After common understanding of kaizen obtained from that, organizations has expected to properly implement kaizen tools, philosophy, principles, and the three pillars and passing the challenge leads to Kaizen implementation.

FIGER 2.3 Conceptual frame work



Source: (Own Design)

Implement kaizen tools, philosophy, principles and kaizen three pillars and passing the challenge leads to Kaizen implementation.

Table 2.4: Kaizen tools, Kaizen philosophy, kaizen principles and kaizen three pillars

Kaizen Tools	Suggestion System, Quality Control (QC) Circles, Total quality control (TQC), Small - group activities, Cooperative labor-management relations, Quality improvement, Workplace discipline, Robotics, Total productive maintenance (TPM), Kamban, Just-in-time (JIT), Productive improvement, customer orientation /Focus on customer' need, Automation, Zero defects and New product development.
Kaizen philosophy	Leadership, Cross functional Teams, 5S, Productivity Improvement, Process Focus, Discipline In the Workplace, Teams and Improvement.
Kaizen principles	Be open minded, Maintain a positive attitude, Reject excuses, Seek solutions, Ask Why? Why? Why? There are no stupid questions, Take action. Implement ideas immediately, Don't seek perfection, Use all of the team's knowledge.
Kaizen three pillars	Housekeeping (5S), Standardization and Waste elimination.

Source: Imai, (1986, 1997) cited by (Thessaloniki, 2006) and Khan, (2011)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Research Design

To reach the research objectives, the researcher has used both qualitative and quantitative research approaches. Since various segments of population are sampled at a time, the researcher used cross sectional design as per Zikmund (2010). As purpose of the study the descriptive research design for describing of the characteristics of groups and individuals (Kothari, 2004).

3.2. Population and Sampling techniques

3.2.1 Target Population

According to Diamantopoulos and Schlegelmilch (2006), a population is a group of items that a sample will be drawn from. The target population of the study are Kaizen implemented manufacturing companies located in Addis Ababa City. Due to time constraint the researcher selected three manufacturing companies namely Excel Plastic Plc, which is located in Bole Sub City, and DH Geda Factory Plc and Finfine Furniture Factory Plc. Both companies are located in Akaki Kality Sub City. Bases for selection for the companies were willingness of their management organs to conduct the study and preliminary recommendation of the kaizen institute to conduct the research. The participants for the study were all permanent employees who served the companies for more than a year and directly worked at kaizen implemented operational areas. This was done for the sake of getting sufficient information about Kaizen. Thus, all permanent employees who worked for less than a year and temporary employees were not involved. The questionnaires' were distributed using random sampling system.

3.2.2 Sample Size and Sampling Techniques

The populations where contained heterogeneous group among each companies and homogenous groups among each groups. The researcher uses purposive sampling, select samples that satisfy their specific purposes. As per (Kothari, 2004), purposive sampling is considered more appropriate when a known characteristic of it is to be studied intensively. The questionnaires were distributed to purposively to selected employees and interviews were

conducted to company higher officials and Kaizen supervisors of each company. During this study, the sample selected companies have a total of 600 permanent employees who worked for more than a year and directly work at Kaizen implemented operational areas. Details of their employees are depicted below:

Table: 3.1 – Employees of the companies

S/N	Company name	Total number of respondents
1	Excel Plastic Plc.	115
2	DH Geda Blanket Factory Plc.	185
3	Finfine Furniture Factory Plc.	300
Total		**600**

Source: Survey (2016)

The researcher uses the following formula to determine the sample size:

$$n = \frac{N}{1+N(e)^2}$$

where n= sample size, N= Total of population, e = Sampling error at 95% of level of confidence

$$n = \frac{600}{1+600(.05)^2} = 240$$

Using the above formula, considering 5 percent margin of error, 95 percent level of precision the sample size was take is the population of 240 respondents. Accordingly, the questionnaire was distributed as follows:

Table: 3.2– Bases and proportion of questionnaire distributed

S/N	Company name	Number of workers	Sample size taken	Bases for sample size taken
1	Excel plastic Plc.	115	46	(115/600)*240
2	DH Geda Blanket Factory Plc	185	74	(185/600)*240
3	Finfine Furniture Factory Plc.	300	120	(300/600)*240
Total		**600**	**240**	

Source: Survey (2016)

3.3.Type and Sources of Data

For the purpose of this research both qualitative and quantitative data were collected. To gather the required data, the researcher uses two sources of data: primary and secondary. The primary data was collected from employees, supervisors and management (Top, Middle, Lower level) of the companies through questionnaires, interview from higher officials and kaizen supervisors, and physical observation was conducted within to each companies. For secondary data, the researcher uses various documents like Internal reports, performance reports including pictures submitted to Ethiopian kaizen institute, Journal articles, Different books, Working papers, Various websits and Unpublished theisis.

3.4.Data Collection Methods

Well organized questionnaires were distributed to respondents; the questionnaire was prepared using Likert scaling questions. The Likert type scale measures, 1. Strongly disagree – which indicates very much dissatisfied with the case described 2. Disagree– which indicates dissatisfied with the cases described 3. Neutral – which indicated nil response with the case described 4.Agree - satisfied with the case described, and 5. Strongly agree - very much satisfied with the case described. The questionnaires is standardized and adopted from previous related studies conducted by (Asfaw, 2014 & Haile, 2015). The questionnaire is designed and has two parts. The first part of the questionnaire is general characteristics of respondents and the rest parts were the main issues to be addressed and reached the objective of the study. Well organized and open ended Interview was conducted for higher officials and kaizen supervisors of each company. Through observation, the researcher was collected information on how Kaizen was implemented in the companies. Concerning secondary documents the researcher was collected relevant secondary data from Ethiopian kaizen institute and from the companies.

3.5.Method of Data Analysis

The researcher analyzed the collated data by using statistical package for social science (SPSS) 20. In this process, descriptive statistics such as mean and standard deviation, percentage and frequencies were used. As a tool of analysis, the mean results are used to exposure that the level of respondents agreement or disagreement on availability of proper implementation on Motivation, training and education, and proper implementation of kaizen tools, kaizen

principles, kaizen philosophies, and the three pillars. It was also used to measure the level of challenges of the companies on implementation of Kaizen. Percentages were used to describe the composition of respondents in terms of their demographic characters.

3.6.Reliability Test

Reliability test is an important tool to check whether the collected data is consistent or not. To measure consistency of the collected data, the researcher uses Cronbach's alpha, which is a test reliability technique that requires only a single test administration to provide a unique estimate of the reliability for a given test. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale (Joseph and Rosemary, 2003, p84).

As per George and Mallery (2003) cited in (Joseph and Rosemary, 2003, p87) provide the following rules of thumb: > .9 – Excellent, > .8 – Good, > .7 – Acceptable, > .6 – Questionable, > .5 – Poor, and < .5 – Unacceptable. As per Joseph and Rosemary, (2003) an alpha of .8 is probably a reasonable goal.

By developing Cronbach's alpha to test reliability and consistencies of the collected questionnaire the following result is obtained:

Table 3.3 Results of Cronbach's alpha

S/N	Questionnaire	Numbers of items	Cronbach's alpha			Interpretation		
			Excel	DHGB	3F	Excel	DHGB	3F
1	Contribution of kaizen	9	0.87	0.94	0.87	Good	Excellent	Good
2	Motivation, Training and education.	7	0.83	0.92	0.86	Good	Excellent	Good
3	Kaizen tools	22	0.91	0.97	0.92	Excellent	Excellent	Excellent
4	Kaizen Philosophy	7	0.88	0.91	0.74	Good	Excellent	Acceptable
5	Kaizen principles	9	0.81	0.77	0.91	Good	Acceptable	Excellent
6	Kaizen pillars	15	0.91	0.90	0.86	Excellent	Excellent	Good
7	Challenges	7	0.79	0.87	0.80	Acceptable	Good	Good
Total		76	0.96	0.98	0.90	Excellent	Excellent	Excellent

Source: Survey (2016)

The Cronbach's alpha test result of the companies is ranges from .74 to .98; which is acceptable and above. Further, overall test of each company is excellent, their score is .96, .98 and .90 for Excel Plastic Plc, DH Geda Blanket Plc, and Finfine Furniture Factory Plc respectively. Thus, the response obtained from respondent through Likert scaling questions is reliable.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Response rate of questionnaire

The researcher had distributed 240 questionnaires to the selected companies namely; Excel plastic Plc, DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc. Questionnaires were distributed to the companies based on their population size. Accordingly 46 questionnaires were distributed to Excel Plastic Plc, of which 42 questionnaires around 91.3 percent were collected, and 74 questionnaires were distributed to DH Geda Blanket Factory Plc, of which 71 questionnaires were collected, which is around 95.95 percent and 120 questionnaires were distributed to Finfine Furniture Factory Plc, of which 102 questionnaires were collected which is around 85 percent. Summary of their response is presented as follows:

Table 4.1 Number of questionnaires distributed and collected

S/N	Company Name	Number of questionnaires distributed	Number of questionnaires collected	Percentage of questionnaires collected
1	Excel Plastic Plc	46	42	91.30 percent
2	DH Geda Blanket Factory Plc.	74	71	95.95 percent
3	Finfine Furniture Factory Plc.	120	102	85 percent
Total		**240**	**215**	

Source: Survey (2016)

4.2 Demographic analysis of respondents

Demographic characteristics of respondents include their Sex, Age, Education Level, and Work experience. The aim of collecting demographic data is to provide general picture about respondents. The following table 4.2 shows demographic of respondents.

Table 4.2 Demographic of respondents

S/N	Description of demographics	Categories	Excel Plastic Plc.		DH Geda Blanket Factory Plc.		Finfine Furniture Factory Plc.		Total	
			Number	Percent	Number	percent	Number	percent	Number	percent
1	Sex	Male	32	76.2	49	69	86	84.3	167	78
		Female	10	23.8	22	31	16	15.7	48	22
		Total	**42**	**100**	**71**	**100**	**102**	**100**	**215**	**100**
2	Age	18 – 25	17	40.5	13	18.3	38	37.3	68	32
		26 – 30	12	28.6	35	49.3	26	25.5	73	34
		31 – 40	9	21.4	16	22.5	22	21.6	47	22
		41 – 50	4	9.5	6	8.5	10	9.8	20	9
		>50	-	-	1	1.4	6	5.9	7	3
		Total	**42**	**100**	**71**	**100**	**102**	**100**	**215**	**100**
3	Level of education	1 – 8	3	7.1	11	15.5	13	12.7	27	13
		9 -12	10	23.8	37	52.1	27	26.5	74	34
		Certificate	6	14.3	8	11.3	16	15.7	30	14
		Diploma/ TVET	9	21.4	14	19.7	34	33.3	57	27
		Degree	14	33.3	1	1.4	10	9.8	25	12
		Masers and above	-		-	0	2	2.0	2	1
		Total	**42**	**100**	**71**	**88**	**102**	**100**	**215**	**100**
4	Work experience at the company	1 – 3	25	59.5	16	22.5	42	41.2	83	39
		4 -6	4	9.5	26	36.6	22	21.6	52	24
		6 – 9	4	9.5	19	26.8	6	5.9	29	13
		9 – 12	2	4.8	5	7.0	7	6.9	14	7
		>12	7	16.7	5	7.0	25	24.5	37	17
		Total	**42**	**100**	**71**	**100**	**102**	**100**	**215**	**100**

Source: Survey (2016)

As presented in the table 4.3; total numbers of respondents of the three companies are 240, of which 78 percent of respondents are males and the rest 22 percent of respondents are females. Proportionally, the numbers of male respondents in three companies were 76.2 percent, 69

percent and 84.3 percent, at Excel Plastic Plc, DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc respectively. The proportion of females respondents at the three companies were 23.8 percent 31 percent and 15.7 percent at Excel Plastic Plc, DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc respectively.

Concerning respondent's age, majority of respondents of Excel Plastics Plc were ranges from age 18 to 25, which is followed by age group ranges from 26 to 30, their percentage coverage from the total respondents is 40.5 percent and 28.6 percent respectively. Further, 21.4 percent and 9.5 percents of the company respondents were age ranges from 31 to 40 and 41 to 50 respectively. Finally no respondent were above age 50. On the other hand, DH Geda Blanket Plc respondent's age range from 26 to 30 were 49.3 percent, other age groups range from 31 to 40, 18 to 25, 41 to 50, and above age 50 obtained 22.5 percent, 18.3 percent, 8.5 percent and 1.4 percent respectively.

Finally, respondents of Finfine Furniture Factory Plc age ranges from 18 to 25 were 37.3 percent, age rages from 26 to 30 were 25.5 percent, age range from 31 to 40 were 21.6 percent, age range from 41 to 50 were 9.8 percent and age above 50 were 5.9 percent. From overall respondents; the percentage of the majority age groups were 34 percent for age groups ranges from 26 to 30, and the percentage of the list age group were 3 percent for age group above 50.

As far as employee's level of education is concerned; only 7.1 percent of respondents at Excel Plastics Plc were in-between grade 1 to grade 8, and 23.8 percent of respondent's level of education were in-between grade 9 to12. The rest 14.3 percent, 21.4 percent and 33.3 percent of respondents of the company awarded Certificate, Diploma and Degree respectively. Besides, education level of 15.5 percent of respondents at DH Geda Blanket Factory Plc were in-between grade 1 to grade 8, and 52.1 percent of respondents education level were in-between grade 9 to grade 12. Percentage of respondents who awarded Certificate, Diploma and Degree were 11.3 percent, 19.7 percent, and 1.4 percent respectively. On the other hand, 12.7 percent of respondents education level at Finfine Furniture Factory Plc were in-between grade 1 to grade 8, 26.5 percent of respondents grade were in-between grade 9 to grade 12; percentage of respondents who award Certificate, Diploma, Degree and Masers and above were 15.7 percent, 33.3 percent, 9.8 Percent and 2 percent respectively. In general, from total respondents; level of

education ranges from grade 1 to grade 8 were 13 percent, grade 9 to grade 12 were 34 percent, who award Certificate were 14 percent, award Diploma were 27 percent, award Degree were 12 percent, award Masters and above were 1 percent.

Concerning respondents work experience; 59.5 percent of respondents work experiences at Excel Plastics Plc were ranged from year 1 to year 3, while respondents work experience ranges year 4 to year 6 were 9.5 percent, year 6 to year 9 were 9.5 percent, year 9 to year 12 were 4.8 percent, above year 12 were 16.7 percent. Besides, 22.5 percent of respondents at DH Geda Blanket Factory Plc had work experience ranged from year 1 to year 3, 36.6 percent of respondents had year 4 to year 6 years of work experience, 26.8 percent of respondents had year 6 to year 9 work experience, year 9 to year 12 were 7 percent, and above 12 years were 7 percent.

Moreover, 41.2 percent of respondents at Finfine Furniture Factory Plc had work experience from year 1 to year 3, the rest 21.6 percent, 5.9 percent, 6.9 percent and 24.5 percent of respondents had year 4 to year 6, year 6 to year 9, year 9 to year 12 and above 12 years respectively work experience in the company. Generally, from the overall respondents, 39 percent of total respondents had year 1 to year 3 work experience, 24 of total respondents had year 4 to year 6 work experience, 13 percent of them had year 6 to 9 work experience, 7 percent had year 9 to year 12 work experience and the rest 17 percent had above 12 years work experience. Thus, respondents were diversified in composition of age, education level, and work experience.

4.3 Descriptive Statistics of Scaled Type Questionnaires

In this part descriptive statistics in the form of mean and standard deviation were presented to illustrate the level of agreement of the respondents with their implications of the organization. The responses of the respondents for the variables indicated below were measured on five point Likert scale with: 1= strongly disagree, 2= disagree, 3 = neutral, 4= agree and 5= strongly agree. But, while making interpretation of the results of mean the scales were reassigned as follows to make the interpretation easy and clear. Used formula adapted from Vichea (2005, p 80) N = 5, (N-1) = (5-1) = 4 = 0.8. It means items which fall between the ranges of 4.20 - 5.00 are considered as strongly Agree, 3.40 - 4.19 are considered as Agree, 2.60 - 3.39 are

considered as Neutral, 1.80 - 2.59 are considered as Disagree , 1.00 - 1.79 are considered as strongly disagree.

4.4 Perception of respondents on Kaizen contribution

Table 4.4 Perception of respondents on Kaizen contribution

S/N	Variable	Excel Plastic Plc.		DHGB		3F	
		Mean	S.D	Mean	S.D	Mean	S.D
1	Sales is increased.	4.20	.78881	3.82	1.07872	3.47	.79982
2	Costs of processing time reduced.	4.20	.42164	4.17	.71774	4.06	.82694
3	Defect of raw materials reduced.	3.90	.87560	4.00	.85280	3.95	.88704
4	Costs related to acquisition of machineries are reduced.	4.10	.87560	4.09	.70065	3.33	1.18818
5	Time wastage related to searching tools is reduced.	3.90	.87560	4.00	1.04447	3.95	.99868
6	Employee's occupational safety increased and clean work environment created.	3.90	.99443	4.00	.95346	4.10	1.16529
7	Employee's participation in continuous improvement increased.	4.20	1.22927	3.92	.90034	3.90	.96791
8	Employees work motivation increased.	4.60	.69921	4.08	.79296	3.90	1.11921
9	Employees are work for improvement of their company.	3.60	1.42984	3.50	1.08711	3.95	.97032
Average mean		**4.07**		**3.95**		**3.85**	

Source: Survey (2016)

The result obtained by the three companies by implementing kaizen is satisfactory. The mean results of kaizen contribution at Excel Plastics Plc registered the lower mean of 3.60 for question related to employees work for improvement of their company, and the higher mean registered is 4.60 regarding Kaizen contribution for increment of employees work motivation. From the listed questions, respondents strongly agreed on kaizen contributed for increment of

sales, reduction of processing time, increment of employee's participation in continuous improvement and motivation of employees. The average of mean result fall under Agree level; Which means, by implementing kaizen the company were able to increase its sales volume, reduced costs of processing time, reduced defect of raw materials, reduced costs related to acquisition of machineries, reduced waste related to searching of tools, increase employee's occupational safety and create clean work environment, increase employees participation in continuous improvement, increase work motivation, and be able to set its employees to work for improvement of their company.

The lower mean for kaizen contribution on DH Geda Blanket Factory Plc registered is 3.50 for question related to kaizen contribution to create employees work for improvement of their company and higher mean result registered is 4.17 for kaizen contribution for reduction of costs related to processing time. All mean results as well as the average mean were under Agreed level. As indicated before on mean results of Excel Plastic PLC, DH Geda Blanket PLC also benefited by implementing Kaizen and be able to increase its sales volume, reduced costs of processing time, reduced defect of raw materials, reduced costs related to acquisition of machineries, reduced waste related to searching of tools, increase employee's occupational safety and create clean work environment, increase employees participation in continuous improvement, increase work motivation, and be able to set its employees to work for improvement of their company.

Further, the lower mean result for kaizen contribution at Finfine Furniture Factory Plc registered is 3.33 for question related to kaizen contribution in reduction of costs related to acquisition of machineries and the higher mean result registered is 4.10 for question related to Kaizen contribution on increment of employee's occupational safety and creation of clean work environment. The average mean result as well as mean results of each questions fall under Agree level except for the company failed to get benefit on reduction of costs related to acquisition of machineries since the mean result fall under neutral level. Besides, the company be able to increased its sales volume, reduced costs of processing time, reduced defect of raw materials, reduced waste related to searching of tools, increased employee's occupational safety and created clean work environment, increased employees participation in continuous

improvement, increased work motivation, and be able to set its employees to work for improvement of their company after Kaizen implementation.

However, there are differences in gaining the benefit from Kaizen implementation. For instance, Excel Plastics Plc has harvest better benefit regarding kaizen contribution on increment of sales, reduction of costs of processing time, reduction of costs related to acquisition of machineries, increment of employee's participation in continuous improvement, increment of employees work motivation. On the other hand, DH Geda Blanket Factory Plc highly benefited than the two companies on kaizen contribution on reduction of defect of raw materials and reduction of time wastage related to searching of tools. Finfine Furniture Factory Plc has grasp better benefit by increased employee's occupational safety, created clean work environment, and helped employees to work for improvement of their company than the two companies. However, Finfine Furniture Plc failed to get benefit on reduction of costs related to acquisition of machineries. Despite, all the three companies' average mean result showed their agreement for benefits of Kaizen implementation item by item and its related benefit differ from company to company.

Similarly, as per feedback collected from respondents of the three companies through open ended questions, some respondents of each were forward their agreement on kaizen benefits and as per interviews conducted to each companies Kaizen supervisors and top level managers, some benefits of kaizen implementation as stated by respondents are reduction of searching tools time, motivation of employees, increase quality and productivity, creating of easy and favorable work atmosphere.

On it internal report dated on July 19, 2013, Excel Plastic Plc's disclosed that the company had obtained 232 square meters additional space in company compound, be able to reduced average searching of tools time from 3 hours to higher of 15 minutes, improved water leaks and reduced monthly water consumption by 32,000.00, reduced mold setup time by 26 percent, that means from 6278 seconds to 4651 seconds, and defect of raw materials also reduced to 2 percent from 15 percent. Finally, the company was able consumed re-work PVC raw materials and obtained Birr 12,253,483.86 during one year.

As per internal report of DH Geda Blanket Factory Plc on June 8, 2014; before implementation of Kaizen, average daily production capacity of the factory within three shifts was 1,650 blankets. However, after implementation of Kaizen, average daily production capacity of the factory within three shifts increased to 3,350. This implies that the average production capacity of the company doubled after kaizen implementation. The report also disclosed that the company had also reduced waste of raw materials used for production by 1230 kilo grams per a bulk of cotton fabric, in monetary terms waste of raw materials reduced by 49,180.00 grams per a bulk of cotton yarn. Finally, the report confirmed that the company was able to save above Birr 500,000.00 during the first three months of its Kaizen implementation.

Further, Finfine Furniture Factory Plc on its internal report dated July 22, 2015 had disclosed that after implementation of Kaizen; the company saved Birr 38,150.00 by reused damaged materials, obtained additional space of 390.1 Square Meters Area at the factory compound, and sold out unnecessary materials and get Birr 22,520.00 excluding unnecessary materials presented for bid for sale as of the report date. In addition, the report disclosed that kaizen creates employees work motivation, restore employees collaboration for work and employees can develop finding of solution in harmony.

The research findings of the three companies on the bases of their average mean is consistent with (Asfaw, 2014, p55; Haile, 2015). Findings of Wonji Showa Suger Factory and selected metal industries of Ethiopia had also verified that both companies were benefited by implementing kaizen.

4.5 Training and Education related

As per Khan (2011) Employees within the kaizen team needs to trained Kaizen logic. Kaizen requires bringing of employees together to look at their Jobs, Sections, and Process to realize changes that will help performance. Thus, respondent's response regarding employee's motivation, training and education at the three companies is tabulated in the table below:

Table 4.5 Motivation, Training and education

S/N	Variable	Excel Plastic Plc.		DH Geda Blanket Factory Plc.		Finfine Furniture Factory Plc	
		Mean	S.D	Mean	S.D	Mean	S.D
1	There are reward system to motivate employees	3.00	1.63299	3.18	1.60114	3.67	1.31656
2	Motivation system helps employees to utilize their full effort.	3.50	1.51186	3.27	1.19087	3.05	.94451
3	Employees are motivated due to the results obtained by kaizen.	3.20	1.31656	3.00	1.00000	3.29	1.05560
4	Trainings before implementing kaizen are sufficient.	4.30	.67495	3.55	.93420	3.81	1.24976
5	Training helps all employees for proper implementation of kaizenall employees for proper implementation of kaizen.	4.10	1.10050	3.27	1.10371	3.76	.94365
6	Trainings are understandable to all employees.	4.20	1.03280	3.55	.93420	3.14	1.31475
7	Up-to-date trainings are given after implementing kaizen.	2.30	1.56702	2.36	.80904	2.62	1.24403
Average mean		**3.51**		**3.17**		**3.33**	

Source: Survey (2016)

As we observed from the above table, the lower mean obtained by Excel Plastics Plc regarding employee motivation, training and education is 2.30, which is question related to the company's commitment to provide up-to-date trainings after implementation of Kaizen and the higher mean result is 4.3 for question in sufficiency of trainings before implementation of Kaizen. As per mean results stated on the table above; Excel Plastics Plc provided sufficient trainings before implementation and trainings given by the company were understandable to all employees. Both mean results fall under strongly agreed level. Also, trainings given by the company helped employees for proper implementation of kaizen and the company motivation system helped employees to utilize their full effort. Both mean results fall under Agreed level. However, the mean results related to the company reward system to motivate employees and employee's motivation due to the results obtained by kaizen fall under neutral level. Regarding

trainings given by the company after implementation of kaizen were not up-to-date since the mean result fall under disagreed level. Thus, the company failed on three items listed above, which are, the company failed to provide up-to-date trainings, its reward system failed to motivate employees and employees were not motivated due to results obtained by kaizen. Despite, the average mean result fall under agreed level due to the company's level of achievement regarding motivation, training and education differed item by item.

On the other hand, DH Geda Blanket Factory Plc registered lower mean result of 2.36 regarding up-to-date trainings given after implementing kaizen. The higher mean result for questions related to employee motivation, trainings and education is 3.55; which discovered that trainings given before implementing kaizen were sufficient and trainings were understandable to all employees. Both results fall under agreed level. All other mean results fall under neutral level except, question related to providing of up-to-date trainings after implementing kaizen fall under disagreed level. The average mean result of the company is 3.27 on motivation, training and education related questions; it implies that the company had implementation gap towards motivation, training and education related questions. The company achieved agree level implementation for two questions out of seven the rest five registers below point.

Finally, Finfine Furniture Factory Plc had registered the lower mean result for question related to Motivation, training and education with mean of 2.62; which is question for up-to-date trainings given after implementing kaizen and the higher mean result is 3.81 for question for sufficiency of trainings before implementing kaizen. For three variables, the company fall under agreed level of achievement namely - Sufficiency of trainings before implementing kaizen, Helpfulness of the training for all employees for proper implementation of kaizen, and Existence of reward systems to motivate employees. However, the rest mean results related to employee motivation, training and education fall under neutral level; which indicates the company had gap to provide up-to-date trainings after implementing kaizen, the motivation system failed to help employees to utilize their full effort, trainings were not understandable to all employees and employees were not motivated due to the results obtained by kaizen. The average mean result fall under neutral level, the result discovered that the company had gap regarding questions related to motivation, training and education.

As per average mean results of the three companies; there is below the desired level of implementation on employee motivation, training and education at DH Geda Blanket Plc and Finfine Furniture Factory Plc. Further, all the three companies failed to provide up-to-date trainings especially mean results of the Excel Plastics Plc and DH Geda Blanket Factory Plc fall under disagreed level. The mean result related to up-to-date trainings given by Finfine Furniture Factory Plc fall under neutral level. Also, the mean results of the three companies for questions related to employee's motivation due to results obtained by kaizen fall under neutral level. On the other hand, existence of reward system to motivate employees at Excel Plastics Plc and DH Geda Blanket Factory Plc, motivation system to help employees to utilized their full effort, and helpfulness of trainings for proper implementation of kaizen at DH Geda Blanket Factory Plc, Motivation system to help employees to utilized their full effort and understandability of trainings to all employees at Finfine Furniture Factory Plc were fall under neutral level. Further, all the three companies employees were not motivated due to the results obtained by kaizen since all mean result fall under neutral level. Thus, the companies registered below the desired level of achievement on the stated item by item.

On the other hand, Finfine Furniture Factory Plc registered the desired level of achievement on reward system to motivate employees, Motivation system at Excel Plastics Plc were helped employees to utilize their full effort, training helped all employees to properly implement kaizen at Excel Plastics Plc and Finfine Furniture Factory Plc, training were sufficient before implementation of kaizen at the three companies, and trainings were understandable to all employees at Excel Plastics Plc and DH Geda Blanket Factory Plc.

We can infer from the above data various companies didn't give sufficient attention at equal level or doesn't have equal level of awareness towards the benefit of Motivation, training and education. As per respondent's feedback forwarded by open ended questions, respondents agreed that there were gaps on motivations and training systems of each company. For instance, respondents from DH Geda Blanket Factory Plc disclosed that kaizen training was not provided by the company to new employees. Others disclosed weakness of motivation system in their companies. Some respondent from the three companies reflected that each companies had gaps on Motivation, training and education system. As per the average mean results, Excel provided moderate emphasis that the two companies. Its result finding on Motivation, Training and

Education is consistent with (Asfaw, 2014,p59) on the other hand, the average mean results of the rest two companies is below the desired level. Thus, the research finding is inconsistent with (Asfaw, 2014, p59) the finding of Wonji Showa Suger Factory discovered that the compnay has has implemented and exhibited better performance in employee Motivation, Training and Education than the two companies.

4.6 Perception of respondents on kaizen tools

Table 4.6 Perception of respondents on kaizen tools

S/N	Variable	Excel		DHGB		3F	
		Mean	S.D	Mean	S.D	Mean	S.D
1	**Suggestion system**						
1.1	There is smooth and convenient way to deliver ideas.	3.20	1.61933	3.00	1.00000	3.62	1.11697
1.2	Reviewed committees are reviewed forwarded ideas properly.	2.60	1.57762	2.55	1.03573	3.67	.91287
1.3	Forwarded ideas successfully implemented.	2.70	1.49443	2.55	.82020	2.76	1.09109
Average mean		**2.83**		**2.70**		**3.35**	
2	**Quality control (QC) Circles**						
2.1	Quality circle teams are properly organized.	3.44	1.50923	2.83	1.26730	3.14	1.35225
2.2	All group members within the quality control circles properly participate.	3.56	1.23603	2.83	1.26730	3.24	1.26114
2.3	Group performs activities with regard to quality, productivity and self-development.	3.56	1.13039	2.75	1.28806	2.86	1.06234
Average mean		**3.52**		**2.81**		**3.08**	
3	**Total quality control (TQC)**						
3.1	All employees involve in total quality control.	3.56	1.23603	3.58	1.08362	2.62	1.16087
3.2	Various methods used for quality control.	3.44	1.23603	2.67	1.15470	2.71	1.00712
3.3	The company has sufficient quality control tools.	3.56	1.33333	3.00	1.27920	2.62	1.02353
Average mean		**3.52**		**3.08**		**2.65**	

Source: Survey (2016)

Regarding suggestion system, mean results of each question at Excel Plastics Plc and DH Geda Blanket Factory Plc fall under neutral level. Their average mean results are 2.83 and 2.70 respectively. Which indicates, in both companies availability of smooth and convenient way to deliver ideas to concerned section, revision of forwarded ideas by the reviewed committees, and implementation of forwarded ideas were below the desired level of implementation and which arise from lack of uniformity in all sections of the companies, some of employee agree the existence and some are not, thus companies failed implementation of suggestion systems.

Despite of the aforementioned two companies, the mean results registered by Finfine Furniture Factory Plc on availability of smooth and convenient way to deliver ideas to concerned section, and revision of forwarded ideas by the reviewed committees are 3.62 and 3.67 respectively and fall under Agree level. This indicates that the company registered moderate level of achievement on the stated cases. However, its mean result regarding implementation of forwarded ideas is 2.76 and the average mean result regarding suggestion system is 3.35; both fall under neutral level of implementation. This clearly indicated that the companies' implementation of suggestion system is below the desired level of implementation. The research findings are consistent with (Asfaw 20014, p44 & Tadesse, 2014, p49) the finding of Wonji Showa Factory discovered that implementation suggestion system were below the desired level.

Quality control (TQC) Circles

The mean results for each questions as well as the average mean at Excel Plastics Plc fall under Agree level. This indicated that the company exhibited moderate level of achievement on proper organization of quality circle teams, proper participation of all group members within the quality control circles and group performs activities with regard to quality, productivity and self-development. The mean results of each item as well as average mean results registered by DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc fall under neutral level; hence their level of implementation on quality control circles were below the desired at both companies. The research finding of Excel Plastics Plc is inconsistence with Asfaw (2014, p46) the finding of Wonji Showa Suger Factory disclosed that there were below the desired level of implementation of quality control (QC) circle.

Total Quality controls (TQC)

The mean results of each question regarding total quality controls at Excel Plastics Plc fall under Agree level. The average mean result of the company concerning total quality controls is 3.52; hence, all employees were moderately involved in quality control, the company moderately used various methods for quality control like statistical quality control and other, and the company had sufficient quality control tools. Thus, the company exhibited moderate level of achievement in total quality control.

Furthermore, mean result of DH Geda Blanket Factory Plc regarding involvement of employees in total quality control is 3.58, it fall under Agree level. But, the average mean results as well as mean results of the two questions - the company utilization of various methods for quality control like statistical quality control and other, and sufficiency of quality control tools fall under neutral level. Hence; the company's levels of implementation on total quality control were below the desired point. Similarly, the mean results of each question on total quality control at Finfine Furniture Factory Plc fall under neutral level; the average mean result 2.65 also fall under neutral level. Therefore; the company's level of implementation on total quality control exhibited below the desired.

When we compare the level of achievement of total quality control of the three companies; Excel Plastics Plc exhibited better performance on utilization of various methods for quality controls like statistical quality control and others, and the company has sufficient quality control tools stated under total quality control. On the other hand, DH Geda Blanket Factory Plc exhibited better performance on involvement of employees in quality control than the two companies. But, based on the average mean of the companies both DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc failed to exhibit the desired level of implementation on total quality control. The research finding of DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc is consistent with (Asfaw, 2014, p46). The finding of Wonji Showa Sugar Factory Plc also discovered that the company had implemented Total quality control (TQC) below the desired level. Thus, implementation of Total quality control at Excel Plastics Plc is better.

4.7 Perception of respondents on other kaizen tools

Table 4.7 Perception of respondents on other kaizen tools

S/N	Variable	Excel Plastic Plc.		DH Geda Blanket Factory Plc.		Finfine Furniture Factory Plc	
		Mean	S.D	Mean	S.D	Mean	S.D
1	Activities done by small group.	3.78	.83333	2.82	1.16775	3.47	1.17229
2	There is cooperative labor management relations.	2.33	1.11803	2.92	1.44338	2.90	1.33377
3	Quality improvement	4.56	.52705	2.73	1.27208	3.38	1.16087
4	Workplace discipline	3.38	1.06066	2.83	1.19342	3.29	1.18924
5	Robotics	2.89	.92796	3.17	1.33712	2.52	.98077
6	Total productive maintenance (TPM)	3.44	1.42400	2.75	1.13818	2.71	1.05560
7	Kamban	3.56	1.33333	3.67	.98473	2.86	1.10841
8	Just – in – time (JIT)	3.80	1.03280	3.42	.99620	2.81	1.12335
9	Productivity improvement.	3.80	1.13529	3.73	1.19087	3.14	1.31475
10	Customer orientation - Focus of customers' needs	4.10	1.28668	3.27	1.27208	3.52	.98077
11	Automation – utilization of various automatic system for work.	3.30	1.05935	2.55	1.36848	3.33	1.06458
12	Zero defect.	3.00	1.15470	2.75	.86603	2.43	.97834
13	New product development.	4.00	.94281	2.64	1.02691	2.67	1.01653
Average mean		**3.53**		**3.02**		**3.00**	

Source: Survey (2016)

Respondent's perception regarding other kaizen tools

The higher mean result of respondents regarding other kaizen tools by Excel Plastics Plc is 4.56; which shows respondent's strong agreement on quality improvement and the lower mean result is 2.33, which shows respondent disagreement of existence of cooperative labor management relations. Other kaizen tools like, Zero defect, which is freeness of the company products from defect, Robotics, which is utilization of information controlled and process by using automated machine and feedback from computer, Automation - which is utilization of various automatic system for work, and Workplace discipline results fall under neutral level of implementation. On the other hand, the mean results on questions for activities done by small group, Kamban - which is utilization of signboards which help to order and transfer needed quality and type for one department to other department, New product development, Just – in – time (JIT), Productivity improvement, Customer orientation, which is focus of customers' needs, and Total productive maintenance fall under Agree level. The average mean result is 3.53, it fall under Agree level. Thus, the company achieved moderate level of implementation of other kaizen tools.

As per response obtained from respondents of DH Geda Blanket Factory Plc; the higher mean result registered for other kaizen tools is 3.73, for question on the company's productivity improvement. It fall under Agree level. Also, the mean results for Kamban, the utilization of signboards which help to order and transfer needed quality and type for one department to other department and Just –in-time fall under Agree level. However, all the remaining other kaizen tools like activities done by small group, New product development, Quality improvement , Workplace discipline, Robotics - which is utilization of information controlled and process by using automated machine and feedback from computer, Total productive maintenance (TPM), Customer orientation, which is focus of customers' needs, Automation - which is utilization of various automatic system for work, Zero defect, existence of cooperative labor management relations were fall under neutral level of implementation. Further the average mean result fall under neutral level of implementation of other kaizen tools. Thus, company failed to achieve the desired level of implementation for other kaizen tools.

On the other hand, the higher mean result of other kaizen tools for Finfine Furniture Factory Plc is 3.52; for question on Customer orientation, which is focus of customers' needs. The result fall under Agree level thus, the company has moderate level of desire on its customer's needs. Similarly, the mean result for question for activities done by small groups falls under Agree level. Despite, the mean result for question for Zero defect and Robotics - which is utilization of information controlled and process by using automated machine and feedback from computer were fall under disagree level. For the remaining ten questions, namely - New product development, Quality improvement, Workplace discipline, Total productive maintenance (TPM), Kamban - utilization of signboards which help to order and transfer needed quality and type for one department to other department, Just – in – time (JIT), Productivity improvement, Automation - which is utilization of various automatic system for work and cooperative labor management relations mean results fall under neutral level of implementation. The average mean result also fall under neutral level. Thus, company failed to achieve the desired level of implementation for other kaizen tools.

When we compare the three companies on implementation of other kaizen tools in detail; Excel Plastics Plc had exhibit better result on implementation of activities done by small group, Quality improvement, Workplace discipline, Total productive maintenance (TPM), Just – in – time (JIT), Productivity improvement, Customer orientation, which is focus of customers' needs, Zero defect, and New product development. On the other hand, DH Geda Blanket Factory Plc obtained better results on Kamban - utilization of signboards which help to order and transfer needed quality and type for one department to other department, Robotics - which is utilization of information controlled and process by using automated machine and feedback from computer and existence of cooperative labor management relations. Finfine Furniture Factory Plc has also obtained better result on Automation - which is utilization of various automatic system for work than the two companies.

As per average mean results of the three companies, better level of implementation for other Kaizen tools is registered at Excel Plastics Plc with moderate level of achievement. But, both DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc failed to achieve the desired level regarding other kaizen tools even if they register Agree level on some items.

The research finding of Excel Plastics Plc concerning activities done by small group, Robotics, Automation, Kamban - utilization of signboards which help to order and transfer needed quality and type for one department to other department, Quality improvement, Customer orientation, which is focus of customers' needs, Productivity improvement, Just – in – time (JIT), Total productive maintenance (TPM), and New product development are consistent with (Asfaw, 2014, p47) the finding of Wonji Showa Sugeer Factory and Excel Plastics Plc had discovered better level of implementation of the stated tools except both failed to implement the desired level on Robotics - which is utilization of information controlled and process by using automated machine and feedback from computer and Automation - which is utilization of various automatic system. But the research finding of Excel Plastics Plc regarding the existence of cooperative labor management relations, Workplace discipline, and Zero defect are inconsistent with (Asfaw, 2014,p47) the findings of Wonji Showa Sugar Factory discovered that there were better implementation of the company on the stated items than Excel Plastic Plc.

The research findings of DH Geda Blanket Factory Plc concerning Automation, Productivity improvement, Just – in – time (JIT), Kamban - utilization of signboards which help to order and transfer needed quality and type for one department to other department, Robotics - which is utilization of information controlled and process by using automated machine and feedback from computer are consistent with (Asfaw, 2014,p47). Based on their findings, both companies implementation of the stated tools were moderate except, both failed to implement the desired level on utilization of Robotics - which is utilization of information controlled and process by using automated machine and feedback from computer and Automation - which is utilization of various automatic system. The research finding on other kaizen tools namely - Activities done by small group, Customer orientation, which is focus of customers' needs, Total productive maintenance (TPM), Workplace discipline, Quality improvement, Cooperative labor management relations, New product development, and Zero defect are inconsistent with (Asfaw, 2014,p47). The findings of Wonji Showa Suger Factory Plc discovered that the company had better level of utilization of stated tools that DH Geda Blanket Factory Plc.

The research finding of Finfine Furniture Factory Plc on kaizen tools namely - Activities done by small group, Customer orientation, which is focus of customers' needs, and Automation - which is utilization of various automatic system are consistent with (Asfaw, 2014, p47). Both

company's implementation level on Activities done by small group, and Customer orientation, which is focus of customers' needs are achieved at the desired level and both failed to implement the desired level on implementation of Automation. On the other hand, the research finding on Cooperative labor management relations, Quality improvement, Workplace discipline, Total productive maintenance (TPM), Kamban - utilization of signboards which help to order and transfer needed quality and type for one department to other department, Just – in – time (JIT), Productivity improvement, Robotics - which is utilization of information controlled and process by using automated machine and feedback from computer, Zero defect, and New product development are inconsistent with (Asfaw, 2014, p47). Based on the findings Wonji Showa Suger Factory had exhibited better result that Finfine Furniture Factory Plc.

4.8 Perception of respondents on kaizen philosophy

Table 4.8 Perception of respondents on kaizen philosophy

S/N	Variable	Excel Plastic Plc.		DH Geda Blanket Factory Plc.		Finfine Furniture Factory Plc	
		Mean	S.D	Mean	S.D	Mean	S.D
1	Leadership - Management commitment to kaizen implementation.	3.50	1.26930	2.50	1.16775	3.30	.92338
2	Cross – functional teams	3.40	1.34990	2.75	1.05529	3.80	.95145
3	All employees have adequate awareness on all 5s.	3.20	1.39841	2.73	.90453	3.62	1.24403
4	All employees are focus on productivity improvement.	3.90	1.10050	3.50	.67420	3.48	1.07792
5	All employees have emphasis on the processes – on the 'how' of achieving the required results.	3.80	1.31656	3.00	.95346	3.62	1.02353
6	All employees are disciplined within the company.	3.30	1.41814	3.00	1.12815	3.71	1.10195
7	Teams are properly organized and operationally active.	3.00	1.15470	2.75	1.05529	3.67	1.23828
Average mean		**3.44**		**2.89**		**3.60**	

Source: Survey (2016)

Regarding kaizen philosophy seven questions are raised and the mean results concerning Leadership - Management commitment to kaizen implementation, employees focus on productivity improvement, Cross – functional teams - which is teams working within and between other groups and all employees emphasis on the processes – on the 'how' of achieving the required results at Excel Plastics Plc fall under Agree level. Whereas, the mean results of the remaining three variables for the existence of properly organized and operationally active teams, adequacy of awareness 5s by all employees and discipline of employees within the company result at Excel Plastics Plc fall under neutral level. The average mean result is 3.44 reflected that implementation of kaizen philosophy at Excel Plastics Plc fall under moderate level.

On the other hand, the higher mean result regarding Kaizen philosophy at DH Geda Blanket Factory Plc is 3.50; which shows respondents agreement on employees focus on productivity improvement. Despite, the lower mean result 2.50 reflects respondent's disagreement and lack of Leadership - Management commitment to kaizen implementation. Other kaizen philosophies fall under neutral level. It indicated that the level of implementation of properly organized and operationally active teams, adequate awareness of employees on all 5s, all employees' emphasis on the processes – on the 'how' of achieving the required results, discipline of employees within the company, and Cross – functional teams; which is teams working within and between other groups were below the desired level. Also, the average mean result 2.89 reflected that implementation of kaizen philosophy at DH Geda Blanket Factory Plc fall below the desired level of point.

Despite of the latter company, the mean results of all kaizen philosophies at Finfine Furniture Factory Plc fall under Agree level except lower mean result 3.30, which is neutral and below the desired achievement level registered concerning management commitment to kaizen implementation. On the other side, existence of cross – functional teams; which is teams working within and between other groups, adequate awareness of all employees on all 5s, focus of all employees on productivity improvement, employees emphasis on the process – on the 'how' of achieving the required results, all employees discipline within the company and existence of properly organized and operationally active teams were implemented at moderate

level. The average mean result 3.60 also shows that the company had implemented kaizen philosophies at moderate level.

As per average mean results of the three companies, Finfine Furniture Factory Plc's had exhibit better performance on implementation of kaizen Philosophies than the two companies. Following that, the average mean result of Excel Plastics Plc also fall under moderate level of implementation. The level of implementation of kaizen philosophies at DH Geda Blanket Factory Plc fall below the desired point.

Based on the average mean results, the research finding of Excel Plastics Plc and Finfinfe Furniture Factory Plc on kaizen philosophies were consistent with (Asfaw, 2014,p49), but the research finding of DH Geda Blanket Factory Plc is inconsistent with (Asfaw, 2014,p49). The finding of Wonji Sowa Sugar Factory discovered that the company had better level of implementation on Kaizen Philosophies than DH Geda Blanket Factory Plc. Inconsistence with (Desta, 2014,p55) employees of Excel Plastics Plc and DH Geda Blanket Factory Plc employees had no adequate awareness on all 5s.

4.9 Perception of respondents on kaizen principles

Table 4.9 Perception of respondents on kaizen principles

S/N	Variable	Excel		DHGB		3F	
		Mean	S.D	Mean	S.D	Mean	S.D
1	All workers are open minded for improvement.	3.90	1.19722	3.67	.49237	3.67	1.31656
2	All workers conserve a positive attitude.	3.90	1.10050	3.83	.93744	3.33	1.23828
3	Reject excuses	3.78	.44096	3.75	.75378	3.21	.97633
4	Understanding for seeking of solutions crates wisdom.	4.10	.56765	3.42	.66856	3.48	1.07792
5	Take action to rectify mistakes.	4.10	.87560	3.42	.99620	3.33	1.27802
6	Implement ideas immediately instead of using other money.	3.90	1.19722	3.50	1.00000	3.38	1.16087
7	Don't seek perfection	3.90	.99443	3.67	.65134	3.30	1.12858
8	Ask Why? Why? Why? There are no stupid questions	4.10	.56765	3.42	.90034	3.33	1.49443
9	Use all of the team's knowledge	4.10	.56765	4.00	.42640	3.62	1.32198
Average mean		**3.98**		**3.63**		**3.41**	

Source: Survey (2016)

The mean results for each questions and average mean result regarding Kaizen Principles at Excel Plastics Plc and DH Geda Blanket Factory Plc shows respondents agreement on the stated items. This indicates that, both companies' employees had open minded for improvements, conserve a positive attitude, reject excuses, understand for seeking of solutions crates wisdom, take action to rectify mistakes, implement ideas immediately instead of using other money, don't seek perfection, Ask Why? Why? Why? There are no stupid questions, and use all of the team's knowledge. Therefore, level of implementation of kaizen principles at Excel Plastics Plc and DH Geda Blanket Factory Plc fall under moderate level.

In the case of Finfine Furniture Factory Plc; except for three questions namely - workers are open minded for improvements, understanding for seeking of solutions crates wisdom, and usage of the team's knowledge which shows agreement of respondents and moderate level of achievements on the stated questions. Other mean results fall under neutral level. Which are conserve a positive attitude, reject excuses, take action to rectify mistakes, implement ideas immediately instead of using other money, don't seek perfection, and Ask Why? Why? Why? There are no stupid questions. Further, as per responses collected by open ended questions, some respondents of the company were disclosed that implementation of kaizen had not brought better benefit to employees; they refuse to take the advantages of their company as own. This is an indication for lack of positive attitude, thus, the mean result obtained by those companies might reflect the majorities instead of the whole employees. Nevertheless, the mean result of the company is 3.41 means the level of implementation of Kaizen principles at the company had exhibited moderate level of implementation.

When we compare the three companies result based on their mean of each variables as well as their average mean, Excel Plastics Plc has exhibited better results on implementation of kaizen principles in every aspects. As per average mean result of all the three companies, Kaizen principles fall under moderate level of implementation. The research findings of the three companies are consistent with (Asfaw, 2014, p51) the finding of Wonjo Sugar Factory also discovered that the company had achieved moderate level of implementation on Kaizen principles.

4.10 Perception of respondents on three pillars of kaizen

Table 4.10 Perception of respondents on three pillars of kaizen

S/N	Variable	Excel.		DHGB		3F	
		Mean	S.D	Mean	S.D	Mean	S.D
Five S, 5S							
1	Sorting	3.90	1.10050	4.08	1.16450	4.38	.58959
2	Set in order	3.70	1.25167	3.92	.99620	3.76	.94365
3	Shine	4.00	.81650	3.75	1.13818	4.05	.74001
4	Standardize	3.70	1.05935	3.64	.80904	3.62	1.11697
5	Sustain	3.80	1.13529	3.33	.77850	3.67	1.06458
Average mean		**3.82**		**3.74**		**3.90**	
Standardization							
1	The company has standard to undertake it's a certain work.	3.70	.94868	3.67	.65134	3.48	1.28915
2	There is proper inspection made by the company to assure works are done according to standard.	3.80	.91894	3.25	.96531	3.48	1.28915
3	There are improvements on standards set by the company.	3.80	.78881	3.18	.98165	3.16	1.11869
Average mean		**3.77**		**3.37**		**3.37**	
Waste elimination							
1	Waste of over production	4.11	.60093	3.45	.68755	3.33	1.06458
2	Waste of inventory level	3.80	.78881	3.08	.99620	3.29	.95618
3	Waste of waiting without work	3.90	.87560	3.58	1.08362	3.48	1.03049
4	Waste of unnecessary motions	3.60	1.26491	3.83	1.11464	3.38	1.02353
5	Waste of transportation	3.60	.84327	3.36	1.02691	3.20	.89443
6	Waste of production reject	4.10	.56765	3.50	1.08711	3.10	1.04426
7	Waste of process time	3.90	.56765	3.50	1.00000	3.62	.97346
Average mean		**3.86**		**3.47**		**3.34**	

Source: Survey (2016)

Five S, 5S

The mean results for each questions regarding implementation of the Five S, namely Sorting, Set in order, Shine, Standardize and Sustain at Excel Plastics Plc and Finfine Furniture Factory Plc fall under Agree level. Whereas, except for question of sustainability at DH Geda Blanket Factory Plc, which fall under neutral level; all results for implementation of Five S at the three companies fall under Agree level.

When we compare the results of each company on 5s, Finfine Furniture Factory Plc had exhibited better result on Sorting, and Shine and DH Geda Blanket Factory Plc had exhibited better result on Set in order and Excel Plastics Plc had exhibited better level of achievement in Standardize and Sustain.

Despite of the results achieved by Excel Plastics Plc and DH Geda Blanket Factory Plc, some higher officials and kaizen supervisors of both companies forwarded their frustrations on sustainability. Some believe that sustainability of results achieved by kaizen implementation including housekeeping becomes reduced from time to time due to turnover of major kaizen officers and employees. Further as per feedback collected through open ended questions from respondents of Excel Plastics Plc and DH Geda Blanket Factory Plc, sustainability of results achieved by kaizen implementation were shown declining trend from time to time.

The average mean of companies 3.82, 3.74, and 3.90 for Excel Plastic Plc, DH Geda Blanket Factory Plc, and Finfine Furniture Factory Plc respectively exhibited moderate level of achievements on Housekeeping. The research finding of all the three companies are inconsistent with finding of Wonji Showa Sugar Factory (Asfaw, 2014, p49), Based on the research, Wonji showa sugar factory had achieved high level of implementation on housekeeping.

Standardization

The mean results of each questions regarding standardization at Excel Plastics Plc fall under Agree level. It indicates that the company have standard to undertake a certain work, it made proper inspection to assure works done according to standard and there were improvements on

standards set by the company. Also, the average mean result 3.77 discovered that the company achieved standardization at moderate level.

Furthermore, the mean result registered by DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc on existence of standard to undertake a certain work are 3.67 and 3.48 respectively. Both results fall under Agree level. But, the rest mean results for question on existence of improvements on standards set by the company at both fall under neutral level. Also, the mean result on existence of proper inspection made by the company to assure works are done according to standard at DH Geda Blanket Factory Plc fall under neural level. Nevertheless, the mean result of 3.48, Agree level were registered at Finfine Furniture Factory Plc on existence of proper inspection made by the company to assure works are done according to standard. The average mean result for each companies regarding standardization is 3.37; both fall under neutral level. Therefore, both companies level of achievement on standardization is below the desired level.

When we compare the results of each companies regarding standardization, Excel Plastics Plc has shown better result on implementation of standardization, while both DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc were not able to achieve the desired level. The research finding of Excel Plastics Plc is consistent with (Asfaw, 2014, p49) while the research finding of both DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc are inconsistent with (Asfaw, 2014, p49);the finding of Wenji Showa Sugar Factory found that standardization were implemented at the company at moderate level.

Waste elimination

The mean results for questions regarding waste elimination at Excel Plastics Plc fall under Agree level. Its average mean result 3.86; also falls under Agree level. This implies that the company had reduced waste of overproduction, waste of inventory level, waste of waiting without work, waste of unnecessary motions, waste of transportation, waste of production reject and waste of process time. Achievements of the company on waste elimination fall under moderate level.

Similarly, mean results of five questions concerning waste elimination at DH Geda Blanket Factory Plc fall under Agree level. Except, redaction of waste of inventory level and waste of transportation, both falls under neutral level, the company had reduced waste of overproduction, waste of waiting without work, waste of unnecessary motions, waste of production reject and waste of process time. The average mean result 3.47; also fall under Agree level. Therefore, DH Geda Blanket Factory Plc's achievements on waste elimination fall under moderate level.

However, the mean results of five questions concerning waste elimination at Finfine Furniture Factory Plc fall under neutral level, namely it failed to reduce waste of overproduction, waste of inventory level, waste of unnecessary motions, waste of transportation, and waste of production rejects. But, the mean result for elimination of waste of waiting without work and waste of process time fall under Agree level. Finally, the average mean result 3.34 fall under neutral level. Therefore, the company's achievement on waste elimination is below the desired level.

When we compare mean results of each companies, Excel Plastics Plc had obtained better result on elimination of waste of over production, inventory level, waiting without work, transportation, production reject, and process time than the two companies. On the other hand, DH Geda Blanket Factory Plc had exhibit better result on elimination of Waste of unnecessary motions. But, Finfine Furniture Company hadn't scored better result than the two companies on elimination of any types of wastes.

When we summarize the average means, waste elimination result shows moderate level of achievement at Excel Plastics Plc and DH Geda Blanket Factory Plc. But, the level of achievement by Finfine Furniture Factory Plc is below the desired level. The research findings at Excel Plastics Plc and DH Geda Blanket Factory Plc are consistent with the research findings of Wonji Showa Sugar Factory (Asfaw, 2014, p49) while the research finding of Finfine Furniture Factory Plc is inconsistent with (Asfaw, 2014, p49). As per their findings Wonji Showa Sugar Factory, Excel Plastics Plc and DH Geda Blanket Factory Plc had achieved better results on waste elimination than Finfine Furniture Factory Plc

4.11 Perception of respondents on Challenge of kaizen implementation

4.11Challenge of kaizen implementation

S/N	Variable	Excel Plastic Plc.		DH Geda Blanket Factory Plc.		Finfine Furniture Factory Plc	
		Mean	S.D	Mean	S.D	Mean	S.D
1	Traditional hierarchical work trends.	4.10	.31623	3.92	.51493	3.05	1.35927
2	Lack of management support or leadership.	3.90	1.19722	3.58	.99620	3.15	1.34849
3	Poor training.	4.00	.81650	3.55	.82020	2.90	1.13599
4	Lack of Skilled manpower.	3.80	1.13529	3.42	.90034	3.10	1.17918
5	Lack of proper kaizen implementation measurement	3.70	1.25167	3.75	.62158	2.90	1.17918
6	Insufficient participation of employees.	3.60	1.17379	3.75	.86603	3.67	1.11056
7	Misconception about kaizen.	3.80	1.22927	4.00	.60302	3.52	1.40068
Average mean		**3.84**		**3.71**		**3.18**	

Source: Survey (2016)

Concerning challenges of Kaizen implementation; results of each questions and average mean of Excel Plastics Plc and DH Geda Blanket Factory Plc fall under Agree level. The mean results of all questions as well as their average mean disclosed that both companies were faced challenges on implementation of kaizen due to traditional hierarchal work trends, lack of management support, poor trainings, lack of skilled manpower, lack of proper kaizen implementation measurement, insufficient participation of employees and misconception about kaizen.

On the other hand, the mean results of five questions on challenges of Kaizen implementation at Finfine Furniture Factory Plc, namely traditional hierarchical work trends, lack of management support or leadership, poor trainings, lack of skilled manpower and lack of proper kaizen implementation measurement fall under neutral level. Despite, mean results for two

questions concerning insufficient participation of employees and misconception about kaizen were fall under Agree level. Nevertheless, the average mean result 3.18 fall under neural level. Therefore, as per the average mean result, the degree of challenges of the company by the all stated variables other than insufficient participation of employees and misconception about kaizen are low.

As per respondent's response through open ended questions, continuous training and education were big challenges for Excel Plastics Plc and DH Geda Blanket Factory Plc to insist kaizen and transfer kaizen to new employees of each company. On the other hand, respondents of Finfine Furniture Factory Plc disclosed that there were misconceptions by employees towards kaizen.

When comparing the level of challenges of the three companies, Traditional hierarchical work trends, Lack of management support or leadership, Poor training and Lack of Skilled manpower are the big challenges of Excel Plastics Plc than the two companies, while, Lack of proper kaizen implementation measurement, Insufficient participation of employees and Misconception about kaizen were big challenges of DH Geda Blanket Factory Plc than the two companies. The research findings of kaizen implementation challenges at Excel Plastics Plc and DH Geda Blanket Factory Plc are consistent with (Asfaw, 2014, p52) the finding of Wenji Showa Sugar Factory disclosed that the company had also faced various challenges.

4.12 Summary of results

The findings on contribution of kaizen implementation by the three companies' verified that the companies have harvested positive result by implementing kaizen. All the three companies' average mean results are fall under Agree level. Thus, the companies were benefited by implementing kaizen. Further, as per internal reports of each companies; the benefits harvested by implementation of kaizen were proved in terms of monetary values like cost savings, reduction of wastes and income from sales of damaged materials in addition to the normal operational income; non monetary benefits of kaizen implementation include employee work motivations. Despite the companies have some differences in gaining the benefit from Kaizen implementation.

Regarding employee Motivation, Training and Education, the average mean results of the companies confirmed that Excel Plastics Plc had moderately applied them but DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc failed to implement them at the desired level. However, all companies were scored moderate result in some variables among themselves. The mean result of up-to-date training provided by Excel Plastics Plc and DH Geda Blanket Factory Plc exhibited the worst point. As per the average mean results, implementation of suggestion system at the three companies exhibit below the desired point.

As per average mean result Quality Control Circles, Total Quality control (TQC) and other kaizen tools at Excel Plastics Plc exhibit better result than the two companies. Both, DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc exhibited below the desired level of implementation of the tools. On the other hand, Finfine Furniture Factory Plc's has exhibited better performance on implementation of kaizen Philosophies than the two companies. With regard of Kaizen principles all three companies achieved moderate level of implementation.

Concerning 5s, all the three companies' exhibit moderate level of achievements. Despite, some higher officials and kaizen supervisors of Excel Plastic Plc and DH Geda Blanket Factory Plc forwarded their frustrations on sustainability. Some believe that sustainability of results achieved by kaizen implementation including housekeeping becomes reduced from time to time due to turnover of major kaizen officers and employees. Further as per feedback collected through open ended questions from respondents of Excel Plastics Plc and DH Geda Blanket Factory Plc, sustainability of results achieved by kaizen implementation are shown declining trend from time to time.

As per average mean results of the companies, standardization at Excel Plastics Plc achieved at moderate level but the rest two companies failed to implement it. The average mean results concerning waste elimination at Excel Plastics Plc and DH Geda Blanket Factory Plc shows moderate implementation and result of Fnfine Furniture Factory Plc is below the desired level. Finally the research finding shows that all the three companies especially Excel Plastic Plc and DH Geda Blanket Factory Plc faced various challenges on kaizen implementation.

Table 4.12 Summary of results

S/N	*Variable*	*Excel Plastic Plc.*		*DH Geda Blanket Factory Plc.*		*Finfine Furniture Factory Plc.*	
		Mean	*Interpretation*	*Mean*	*Interpretation*	*Mean*	*Interpretation*
1	Average mean result on Kaizen contribution.	4.07	Agree	3.95	Agree	3.85	Agree
2	Average mean result on Motivation, Training and education.	3.51	Agree	3.17	Neutral	3.33	Neutral
3	Perception of respondents on kaizen tools						
3.1	Average mean result on suggestion system.	2.83	Neutral	2.70	Neutral	3.35	Neutral
3.2	Average mean result for Quality control (QC) Circles	3.52	Agree	2.81	Neutral	3.08	Neutral
3.4	Average mean result for Total quality control (TQC)	3.52	Agree	3.08	Neutral	2.65	Neutral
4	Average mean result for other kaizen tools	3.53	Agree	3.02	Neutral	3.00	Neutral
5	Average mean result for kaizen philosophy	3.44	Agree	2.89	Neutral	3.60	Agree
6	Average mean result for kaizen principles	3.98	Agree	3.63	Agree	3.41	Agree
7	Perception of respondents on three pillars of kaizen						
7.1	Average mean result on Five S, 5S (Sorting, Set in order, Shine, Standardize, Sustain)	3.82	Agree	3.74	Agree	3.90	Agree
7.2	Average mean result on standardization	3.77	Agree	3.37	Neutral	3.37	Neutral
7.3	Average mean result on Waste elimination	3.86	Agree	3.47	Agree	3.34	Neutral
8	Average mean result on challenge of kaizen implementation.	3.84	Agree	3.71	Agree	3.18	Neutral

Source: Survey (2016)

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the major findings

- All companies are benefited by implementing kaizen in terms of both in monetary and non monetary values. However, there are differences in gaining the benefit from Kaizen implementation.
- The average mean result of the three companies shows that below the desired level of implementation on employee motivation, training and education is exhibited at DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc. While, Excel Plastics Plc exhibited moderate level of implementation on it. However, all the three companies failed to provide up-to-date trainings especially Excel Plastics Plc and DH Geda Blanket Factory Plc result fall under worst point.
- All the three companies failed to achieve the desired level of implementation on suggestion system. However, Finfine Furniture Factory Plc registered moderate level of achievement on availability of smooth and convenient way to deliver ideas to concerned section, and revision of forwarded ideas by the reviewed committees.
- Excel Plastics Plc achieved moderate implementation level on Quality control (QC). Despite of it, quality control circles mean results of each variables as well as average mean results registered by DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc fall under neutral level; which indicated that both companies were not achieved the desired level.
- Excel Plastics Plc exhibit better performance on total quality control. Based on the average mean of the companies only Excel Plastics Plc had scored moderate level of implementation on total quality control. The rest two companies failed to achieve the desired goal.
- As per average mean results of the three companies, better level of implementation for other Kaizen tools is registered at Excel Plastics Plc with moderate level of achievement. But, both DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc failed to achieve the desired level regarding other kaizen tools even if they registered Agree level on some variables.

- Finfine Furniture Factory Plc's had exhibit moderate level implementation with better result on kaizen Philosophies than the two companies. Following that, the average mean result of Excel Plastics Plc has also fall under moderate level of implementation. But, implementation of kaizen philosophies at DH Geda Blanket Factory Plc fall below the desired level.
- Excel Plastics Plc has attained better results on implementation of kaizen principles, while all the three companies average mean result regarding Kaizen principles fall under moderate level of implementation.
- All the three companies achievement level on implementation of five Ss is fall under moderate level. Despite, some higher officials of Excel Plastics Plc and DH Geda Blanket Factory Plc put their hesitation for sustainability of housekeeping due to turnover of major kaizen officers and employees.
- Excel Plastics Plc has shown better result on implementation of standardization and achieves same at moderate level, while both DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc were not able to achieve the desired level.
- Waste elimination result shows moderate level of achievement at Excel Plastics Plc and DH Geda Blanket Factory Plc. But, the level of achievement by Finfine Furniture Factory Plc is below the desired level.
- Based on mean result of each companies; traditional hierarchical work trends, lack of management support or leadership, poor training and lack of skilled manpower are the big challenges of Excel Plastics Plc than the two companies, while lack of proper kaizen implementation measurement, insufficient participation of employees and misconception about kaizen are big challenges of DH Geda Blanket Factory Plc.
- As per respondent's response through open ended questions, continuous training and education has great challenge for Excel Plastics Plc and DH Geda Blanket Factory Plc to insist kaizen and transfer kaizen to new employees of the companies. On the other hand, respondents of Finfine Furniture Factory Plc disclosed that there were misconceptions by employees towards kaizen.
- When we measure the degree of overall kaizen implementation and challenges, Excel Plastics Plc exhibit better performance on kaizen implementation and faces challenges heavily than others. From this we can infer that, Excel Plastics Plc may develop

defensive mechanisms for challenges or respondents of the company had better understanding on the root causes of challenges than the two companies brought throughout the time.

5.2 Conclusion

The findings on contribution of kaizen implementation by the three companies' verified that the companies have harvest benefits although the degree of their benefit is differ from company to company. Further, as per internal reports of each companies; the contribution of kaizen is disclosed in terms of monetary values like cost savings, reduction of wastes and income from sales of damaged materials in addition to the normal operational income; non monetary benefits of kaizen implementation include employee work motivations. While average mean result on employee motivation, training and education at Excel Plastic fall under Agree level, but the average mean results of the DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc fall under neutral level. The worst mean result exhibited by Excel Plastics Plc and DH Geda Blanket Factory Plc was on providing of up-to-date trainings after implementing kaizen. As per their average mean result, all the three companies failed to implement suggestion system. Concerning Quality control (TQC) Circles, Total quality control, and implementation of other kaizen tools at Excel Plastics Plc exhibited moderate level of achievement but both DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc failed to exhibit the desired level.

On the other hand, Finfine Furniture Factory Plc's has revealed better performance on implementation of kaizen Philosophies with moderate level than the two companies. Following that, the average mean result of Excel Plastics Plc also fall under moderate level of implementation. But, DH Geda Blanket Factory Plc implement below the desired level of achievement on kaizen philosophies. With regard of Kaizen principles and 5s, all three companies achieved moderate level of implementation. Despite, some higher officials of Excel Plastic Plc and DH Geda Blanket Factory Plc companies forwarded their hesitation on sustainability of housekeeping due to turnover of major kaizen officers and employees.

The levels of implementation of Standardization at Excel Plastics Plc fall under moderate level. But, the rest two companies failed to exhibit the desired level. When we summarize the average mean results, waste elimination result shows moderate level of achievement at Excel Plastics

Plc and DH Geda Blanket Factory Plc. But, the level of achievement by Finfine Furniture Factory Plc is below the desired level.

As per the results obtained from average mean on challenges of Kaizen implementation; both Excel Plastics Plc and DH Geda Blanket Factory Plc faces challenges on implementation of kaizen due to traditional hierarchal work trends, lack of management support, poor trainings, lack of skilled manpower, lack of proper kaizen implementation measurement, insufficient participation of employees and misconception about kaizen. On the other side, Finfine Furniture Factory Plc has face challenges due to insufficient participation of employees and misconception about kaizen.

The research finding found that Kaizen tools, Kaizen philosophies, Kaizen principles, and Kaizen three pillars are implemented on the three manufacturing companies at moderate and below level. Further, all the three companies have harvested various benefits and faced various challenges. However, the level of implementation and benefits harvested by the companies are differed among each other.

5.3 Limitation of the Study

Due to confidentiality of financial statements of all the three companies; the overall impact of Kaizen implementation on the companies could not fully presented and verified by finical statements of each Companies.

5.4 Recommendations:

Based on the findings, the researcher recommends the following:

Recommendation for Excel Plastic Plc:

- Excel Plastics Plc should develop reward systems to motivate employees which include both monetary and non monetary reward systems. Herby, the level of employee's turnover will decrease, employees will see result obtained by the company as they own, and effort and kaizen will sustain without hesitation.
- Although the overall result on implementation of kaizen philosophies at Excel Plastic company Plc is moderate, further improvement is required on areas on creating of

adequate awareness on all 5s, employees discipline within the company and on proper organization of teams and making them to be operationally active.

- Excel Plastics Plc shall further improve its waste elimination mechanisms particularly on elimination of unnecessary motions and transportation.

Recommendation for DH Geda Blanket Factory Plc:

- Since motivation of employees helps to maintain results achieved by the company, DH Geda Blanket Factory Plc should develop reward systems to motivate employees which includes both monetary and non monetary reward systems. Herby, the level of employee's turnover will decrease, employees will see result obtained by the company as they own, employees will utilize their full effort, and kaizen will sustain without hesitation.
- DH Geda Blanket Factory Plc shall provide adequate training to its employees; it will help the company employees to properly implement kaizen.
- To improve its product quality time to time, DH Geda Blanket Factory Plc should uses various methods used for quality control; such as statistical quality control and others, and bring sufficient quality control tools.
- DH Geda Blanket Factory Plc shall design proper inspection to assure works are done according to standard.
- Except for employees focus on productivity improvement, all kaizen philosophies requires improvement at DH Geda Blanket Factory Plc. Thus, the management of the company shall provide better commitment on kaizen implementation, cross functional teams, employees discipline within the company, help employees have emphasis on the processes – on the 'how' of achieving the required results, create adequate awareness on all 5s, and create teams which are properly organized and operationally active.
- DH Geda Blanket Factory Plc should improve its waste elimination mechanisms especially waste of transportation and inventory level.

Recommendation for Finfine Furniture Factory Plc:

- Finfine Furniture Factory Plc should revise its existing reward system; hence employees of the company will motivate to utilize their full effort. For example, it can include monetary reward systems to lower employees if the existing fails to consider.
- Finfine Furniture Factory Plc should revise the trainings provided by the company in the way of understandable manure to all employees.
- Finfine Furniture Factory Plc should develop strategies to occupy its employees in total quality control. It can be done by establishing quality control small groups, used various methods for quality controls, such as statistical quality control and others, and bring sufficient quality control tools.
- Finfine Furniture Factory Plc has also focus on kaizen principles especially on the following areas; all workers conserve a positive attitude, Ask Why? Why? Why? There are no stupid questions, implement ideas immediately instead of using other money, Take action to rectify mistakes, Don't seek perfection, Reject excuses.
- Finfine Furniture Factory Plc should further improve its waste elimination mechanisms, especially waste of over production, unnecessary motions, transportation, production reject, and inventory level.

Recommendation for DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc:

- DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc provide better focus on Quality control (QC) Circles, Total quality control (TQC) and standardization. Hence both companies can get better benefit from employee's best effort, easily examine and generate solutions on quality related work problems, be able to provide better quality and standardized products in this competitive environment. Both can share experiences from Excel Plastics Plc.
- DH Geda Blanket Factory Plc and Finfine Furniture Factory Plc shall improve their work based on standards set by the companies.

Recommendation for DH Geda Blanket Factory Plc and Excel Plastics Plc:

- Since both Excel Plastics Plc and DH Geda Blanket Factory Plc faces various challenges due to traditional hierarchical work trends and lack of management support or leadership both company higher officials and owners shall provide better commitment to Kaizen. Also, to overcome challenges due to poor training and lack of skilled manpower; both companies shall provide timely updated trainings to existing employees. Also appropriate training shall be provided to newly hired employees to transfer clear knowledge about kaizen; lack of proper kaizen implementation measurement challenge can be eliminated by setting measurements.

Recommendation for all the three companies:

- All the three companies shall develop design experience sharing programs to learn more about their week sides. For instance, Excel Plastics Plc can share its experience on growth of sales, cost reduction of processing time, cost reduction to acquisition of machineries, increment of employee participation and work motivation. Whereas, DH Geda Blanket Factory Plc can its experiences on reduction of defect of raw materials, and wastage of searching of time. Finally, Finfine Furniture Factory Plc can share its experience on increment of employee's occupational safety, creation of clean work environment, and employees' participation of improvement of their company.
- The three companies especially Excel Plastics Plc and DH Geda Blanket Factory Plc shall focus on timely preparation of up to date trainings and timely provide trainings to their employees. It will enhance the level of employees understanding.
- Since kaizen requires involvement of all employees from upper management to lower subordinate, all the three companies should improve their suggestion system. Thus, all the three companies can be able to utilize better ideas and suggestions of employees will help to achieve cost savings or improve product quality, workplace efficiency, customer service, or working conditions. Further, Excel Plastics Plc and DH Geda Blanket Factory Plc can share experiences from Finfine Furniture Factory Plc on how to create smooth and convenient way to deliver ideas to concerned section, and how to properly review forwarded ideas by the reviewed committee. Whereas, Finfine Furniture Factory

Plc can also share experiences from other successful companies how properly implement forwarded ideas.

- All companies shall develop experience sharing programs on utilization of kaizen tools, for instance, Excel Plastics Plc can share its experience on implementation of activities done by small group, Quality improvement, Workplace discipline, Total productive maintenance (TPM), Just – in – time (JIT), Productivity improvement, Customer orientation, which is focus of customers' needs, Zero defect and new product development. On the other hand, DH Geda Blanket Factory Plc can share its experience on Kamban, which is utilization of signboards which help to order and transfer needed quality and type for one department to other department, Robotics, which is utilization of information controlled and process by using automated machine and feedback from computer and how to develop cooperative labor management relations. Finfine Furniture Factory Plc can also share its experience on Automation, which is utilization of various automatic systems for work than the two companies. Thus the companies will modify their worst results.
- Since harmony of management and employees is highly required to successfully implement Kaizen, all the three companies shall improve their leadership style, for example they can change their leadership style to servant hood leadership style.
- All the three companies shall focus on sustainability of 5s, especially Excel Plastics Plc and DH Geda Blanket Factory Plc should provide great emphasis on it. Further, re – inspiration motivation programs like prizing of the best result achieved employees can be rewarded.
- All the three companies can focus of providing of competent trainings and motivation mechanisms to eliminate insufficient participation of employees and misconception about kaizen.

5.5 Implications for future research

Further researches can be conducted by investigating how kaizen can be implemented in developing nations as part of their life styles rather than focusing on past management and leadership styles.

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Annex A: Questionnaire and Interview question

St. Mary University

School of graduate studies

Serial Number _____

Dear respondents

This questionnaire is designed to collect data about effects of Kaizen Implementation in elected Manufacturing Companies of Addis Ababa. The information that you provide by filling these questionnaire will be used as a primary data in the study which is conducted for fulfillment of the requirement for degree of Master Business Administration (GMBA) at St. Mary University, school of graduate studies. Thus, I would like to express to my deep appreciation for your agreement to fill these questionnaire.

General remarks:

- No need of writing your name.
- Use ✓mark or circle for your answer among the presented alternatives.
- Please use the space provided for your additional answers and comments if any.

I appreciate your agreement again!

Part One: Personal Information

1. Sex: 1. Male ☐ 2. Female ☐
2. Age
    1. 18 – 25 ☐
    2. 26 -30 ☐
    3. 31 – 40 ☐
    4. 41-50 ☐
    5. Above 50 ☐

3. Education level
    1. 1 -8 ☐
    2. 9 - 12 ☐
    3. Deploma/TVET graduate ☐
    4. Degree ☐
    5. Masters and above ☐
4. Work experience in the company
    1. 1 - 3 ☐
    2. 4 - 6 ☐
    3. 6 - 9 ☐
    4. 6 - 12 ☐
    5. 12 years above ☐

Please state your level of opinion for each given statement using the following table

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

Part Two: Contribution of kaizen in the companies

The financial and non-financial benefits obtained by implementing Kaizen

S/N	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The factory has increased its sales volume after implementation of kaizen					
2	The factory has reduced costs by reducing processing time to produce its products.					
3	The factory has reduced defect of raw materials used for production.					

4	Costs related to acquisition of machineries are reduced due to maintenance of machines and reused.					
5	Time wastage related to searching tools is reduced hence labor productivity is increased.					
6	Employee's occupational safety increased and clean work environment created.					
7	Employees participation in continuous improvement increased.					
8	When it compares to the previous system Kaizen implementation increases employees work motivation.					
9	After implementation of Kaizen employees are work for improvement of the factory					

Part three: Motivation, Training and education related questions.

S/N	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	The factory has various reward system to motivate employees who registered better performance.					
2	Employees of the factory are being able to utilize their full effort due to the factory's motivation system.					
3	All employees are motivated due to the results obtained by kaizen.					
4	Training given by the factory before implementing kaizen is sufficient.					
5	Training given by the company helps all employees for proper implementation of					

	kaizen.					
6	Trainings given by the company are understandable to all employees.					
7	Up-to-date trainings are given after implementing kaizen.					

Part four: The extent of the following tools, philosophy, principles, and the three pillars are implemented within the factory.

A. Kaizen tools

S/N	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Suggestion system						
1	There is smooth and convenient way to deliver ideas to concerned section.					
2	Reviewed committees are reviewed forwarded ideas properly.					
3	Forwarded ideas successfully implemented.					
Quality control (QC) Circles						
1	Quality circle teams are properly organized.					
2	All group members within the quality control circles properly participate.					
3	Group performs activities with regard to quality, productivity and self-development.					
Total quality control (TQC)						
1	All employees involve in total quality control.					
2	Various methods used for quality control; such as statistical quality control and others.					

3	The company has sufficient quality control tools.					
4	Activities done by small group.					
5	There is cooperative labor management relations.					
6	**Quality improvement:** Quality improved from time to time.					
7	**Workplace discipline:** There is discipline in the workplace					
8	**Robotics:** In manufacturing process information controlled and process by using automated machine and feedback from computer also used.					
9	**Total productive maintenance (TPM):**The company properly keeps all equipments in best conditions to prevent breakdowns and delays in manufacturing process.					
10	**Kamban:** Signboards which help to order and transfer needed quality and type from one department to other department is used.					
11	**Just – in – time (JIT):**All the required materials and goods needed are placed in just in time. (No more No less)					
12	**Productivity improvement:** The company's productivity improves from time to time.					
13	**Customer orientation** - Focus of Customers' needs/ Work is done based on the customer's need					

14	**Automation**: The company used various automatic system for work.					
15	**Zero defect**: The company products are free from defect					
16	**New product development:** The company produced new products timely.					

B. Kaizen Philosophy

The extent of kaizen philosophies implemented within the factory

S/N	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Leadership: The company management has commitment to kaizen implementation.					
2	Cross – functional teams: Teams are working within and between other teams.					
3	All employees have adequate awareness on all 5s i.e, (Sorting, Set in order, Shine, Standardize, Sustain) and operate them successfully.					
4	All employees are focus on productivity improvement.					
5	All employees have emphasis on the processes – on the 'how' of achieving the required results.					
6	All employees are disciplined within the company.					
7	Teams are properly organized and operationally active.					

C. Kaizen principles: The extent of Kaizen principles implemented

S/N	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	All workers are open minded for improvement.					
2	All workers conserve a positive attitude.					
3	Reject excuses					
4	Understanding for seeking of solutions crates wisdom.					
5	Take action to rectify mistakes.					
6	Implement ideas immediately instead of using other money.					
7	Don't seek perfection					
8	Ask Why? Why? Why? There are *no* stupid questions					
9	Use all of the team's knowledge					

D. Kaizen three pillars: The extent of kaizen pillars implemented in the factory.

S/N	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Five S, 5S (Sorting, Set in order, Shine, Standardize, Sustain)						
1	**Sorting:** The factory properly differentiate between necessary and unnecessary items.					
2	**Set in order:** All products, equipments, and tool are properly organized					
3	**Shine:** All products, equipments, tools and work environment properly cleaned.					
4	**Standardize:** 5S working standards is implemented within the factory.					
5	**Sustain:** Factory efforts for sustaining 5S within the factory.					

Standardization						
1	The company has standard to undertake it's a certain work.					
2	There is proper inspection made by the company to assure works are done according to standard.					
3	There are improvements on standards set by the company.					
Waste elimination						
1	Waste of over production reduced					
2	Waste of inventory level reduced					
3	Waste of waiting without work removed					
4	Waste of unnecessary motions are reduced					
5	Waste of transportation waste are reduced					
6	Waste of production reject reduced					
7	Waste of process time reduced					

Part five: Challenges during implementation of Kaizen.

S/N	Description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	Traditional hierarchical work trends.					
2	Lack of management support or leadership.					
3	Poor training.					
4	Lack of Skilled manpower.					
5	Lack of proper kaizen implementation measurement.					
6	There were challenges of kaizen implementation due to insufficient participation of employees.					
7	Misconception about kaizen.					

If you have additional suggestions please write in the following space provided

_____

_____

_____

I appreciate your harmony again!

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ÃI SÖÃp ¾}²ÒË¨< ¾"Ã²″ e^ ›S^` õMeõ″ uSŸ}M U″ ›Ã'ƒ ¨<Ö?ƒ ˆ″ÇeÑ– KTØ″ƒ õMeõ″¨<″ }Óv]© vÅ[Ñ< ›Ç=e ›uv Ÿ}T ¨<eØ uT>Ñ–< u›″Ç″É É`Ï„‹ S[Í″ KScwcw '¨<:: u²=I SÖÃp ¾UƒcÖ<ƒ ULi uT>Å[Ñ¨< Ÿ?´ Ø″ƒ upÉeƒ T`ÁU ƒUI`ƒ ¾ÉI[U[n ƒUI`ƒ ¡õM uu=´'e ›ÉT>'>eƒ]i″ Te}`e Ç=Ó] ŸòM TTEÁ ˆ″Å SËS`Á S[Í ¾T>ÁÑKÓM '¨<:: eK²=I ÃI Ø″ƒ ¾T>S²'¨< "Ã²″″ uS}Óu` Ø^ƒ″ ' U`qT'ƒ″ ˆ″ ƒ`óT'ƒ″ KSÚS` KT>•[″ S[Çƒ uT>Å[Ñ¨< ›e}ªê-SJ'<″ ˆÁeq¨pG< ÃI″″ SÖÃp uSS<Lƒ KUqu[¡~ƒ ›eªî* Mv© ›¡wa,″ KSÓKî ˆ¨ÇKG<::

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¡õM ›″É: ›ÖnLÃ S[Í

1. ëq ¨″É d.j ☐ ☐
2. ˆÉT@
   1) 18 – 25 ☐
   2) 26 -30 ☐

3) 31 – 40 ☐

4) 41-50 ☐

5) >50 ☐

3. É`Ï~ ¨<eØ U" ÁIM Ñ>²? ›ÑMÓKªM

1) 1 - 3 ›S*ƒ* ☐

2) 4 - 6 ›S*ƒ* ☐

3) 6-9 ›S*ƒ* ☐

4) 9 - 12 ›S*ƒ* ☐

5) >50 ☐

4. ¾*ƒ*UI`*ƒ* Å[Í

1) 1 - 8 ☐

2) 9 - 12 ☐

3) c`}õŸ?*ƒ* ☐

4) Ç=ýKAT/,.S<.U\p ☐

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6) Te}`e ^" Ÿ²=Á uLÃ ☐

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5 - u×U ˆeTTKG<& 4- ˆeTTKG<& 3 - Hdw ¾K˜U & 2 - ›MeTTU &

1 - u×U ›MeTTU

¡õM G<K*ƒ*: ¾"Ã²" ›}Ñvu` KÉ`Ï~ ÁeÑ–¨< ØpU

}.l	Seð`„‹	u×U ›MeTTU	›MeTTU	Hdw ¾K˜U	ˆeTTKG<	u×U ˆeTTKG<
1	"Ã²"" Ÿ}Ñu[u%EL ¾É`Ï~ iÁß Ÿõ wLDM::					
2	"Ã²"" uS}Óu` É`Ï~ U`~" KTU[*ƒ* ¾T>¨eÅ¨<" c¯*ƒ* uSk'e ¨Ü¨<" k"dDM::					
3	"Ã²"" Ÿ}Ñu[u%EL ¾É`Ï~ KU`*ƒ* ›ÑMÓKA*ƒ*					

	¾T>¨<K< Ø_ °n wMiƒ k”dDM::					
4	u"Ã²” ƒÓw^ Ti” SÑMÑÁ °n-‹ }ÖÓ'¨<^”ÅÑ” ØpU LÃ uSªL†¨<¾Ñ”²w ØpU ›eÑ˜…M::					
5	u"Ã²” ƒÓw^ °n uSðKÓ ¾T>Öó¨<” Ñ>²? uSk’e ¾c^}—¨<” U`qT’ƒ ÚUbM::					
6	u"Ã²” ƒÓu^ ”èl ¾e^ ›"vu= uSõÖ` ¾c^}—¨< ¾Ö?” ^” ¾e^ xq Ål”’ƒ }hiLDM::					
7	u"Ã²” ƒÓw^ ¾c^}—¨< }dƒö }hiLDM::					

¡õM feƒ: Tu[q‰-‹& eMÖ” ^” ƒUl`ƒ

¾Ñ”²w ^” Ñ”²w ’¡ ÁMJ’< Tu[q‰-‹ u}ÚT]U eMÖ” ^” ƒUl`ƒ U” ÁIM }}ÓwbM::

}.l	Seð`„‹	u×U ›MeTTU	›MeTTU	Hdw ¾K˜U	ˆeTTKG<	u×U ˆeTTKG<
1	É`Ï~ ¾}KÁ¿ ¾Tu[q‰ ²È-‹” uSÖkU ¾Lk ¨<Ö?ƒ LeS²Ñu< c^}™‹ Tu[q‰ Ãc×M::					
2	¾É`Ï~ c^}™† ŸT>c×†¨< Tu[q‰ ¾}’d S<K< ›pT†¨<” uSÖkU KÉ`Ï~ ¨<Ö?qT’ƒ }ÚT] ›e}ªê* ^”Ç=ÁÅ`Ó [É}¨<qM::					
3	G<K<U ¾É`Ï~ c^}™‹ u"Ã²” ƒÓu^ u}Ñ–¨< ¨<Ö?ƒ }u[qƒ}ªM::					
4	"Ã²” }Óv^© ŸSÅ[Ñ< uòƒ um eMÖ” ^” ƒUl`ƒ uÉ`Ï~ }cØ}ªM					
5	"Ã²” u}SKŸ} ¾}cÖ<ƒ eMÖ”-‹ c^}™‹ "Ã²”””” u›Óvu<^”Ç=}Ñw\ ›É`Ôª M::					
6	"Ã²” u}SKŸ} ¾}cÖ<ƒ eMÖ”-‹ G<K<U ukLK< ¾T>[Ç ’¨<::					
7	Ÿ"Ã²” ƒÓu^ u%EL É`Ï~ ¨p~” ¾Öuk eMÖ”-‹ Ãc×M::					

¡õM ›^ƒ: ŸT>Ÿ}K<ƒ ¾"Ã²” Td]Á-‹ & ¾›S^` õMeõ” & ¾"Ã²” SS]Á-‹ ^” fe~ T°²•‹ (Å[Í T¨<×ƒ w¡’ƒ” Te¨ÑÉ ^” 5~ T-‹) U” ÁIM uÉ`Ï~ ¨<eØ }}Ów[ªM::

G. ¾"Ã²" Sd]Á-‹:- uÉ`Ï~ ¨<eØ ¾T>Ÿ}K<ƒ ¾"Ã²" Sd]Á-‹ U" ÁIM }}Ów[ªM

}.l	Seð`„‹	u×U ›MeTTU	›MeTTU	Hdw ¾K˜U	ˆeTTKG<	u×U ˆeTTKG<
1.	**›e}Á¾ƒ SeÝ**					
1	Hdw ¨Å }Ñu=¨< ¡õM KTe}LKõ k"" ›Sˆ S"ÑÉ ›K					
2	¾}cÖ<ƒ Hdx‹ uT>SKŸ}¨< ¢T>, u}Ñu=¨< S"ÑÉ ÃÑSÓTM					
3	¾}cÖ<ƒ Hdx‹ uT>Ñv }Óv^© ÃÅ[ÒK<					
2.	**Ø^ƒ }q××] u<É"**					
1	Ø^ƒ }q××] u<É" uT>Ñv ¾}Å^Ë '¨<					
2	uØ^ƒ }q××] u<É" ¨<eØ G<K<U ¾u<É'< ›vM }Ñu=¨<" }dƒö ÁÅ`ÒM					
3	¾Ø^ƒ }q××] u<É'< ŸØ^ƒ : U`qT'ƒ ˆ" ^e" ŸTdÅÓ Ò` ¾}ÁÁ²< e^-‹" Ãc^M					
3.	**›ÖnLÃ ¾Ø^ƒ lØØ`**					
1	G<K<U ¾É`Ì~ c^}™‹ uØ^ƒ lØØ` ¨<eØ }dƒö ÁÅ`ÒK<					
2	¾Ø^ƒ lØØ` KTÉ[Ó ¾}KÁ¿ ²È-‹ : ˆ"Å eqe+"M ¾Ø^ƒ lØØ` ˆ" ¾SdcK<ƒ ÃÅ[ÒK<					
3	É`Ï~ ¾Ø^ƒ lØØ` KTÉ[Ó um Sd]Á-‹ ›K<ƒ					
4	}Óv` ¾T>Ÿ"¨'¨< uƒ"i Ó\ý '¨<					
5	uc^}™‹ ˆ" u›e}ÇÅ~ S"ŸM ¾e^ Ó"'<'ƒ ›K •					
6	**Ø^ƒ" ThhM:- É**`Ï~ ŸÑ>²? ¨Å Ñ>²? Ø^ƒ" ÅhhK '¨<					
7	**¾e^ xq Ç=c=ýK=":-** uÉ`Ï~ ŸÑ>²? ¨Å Ñ>²? Ø^ƒ" ˆÁhgK '¨<					
8	**ax+¡e:-** uU`ƒ H>Åƒ ¨<eØ ¾S[Í-‹ pØØ` ˆ" H>Åƒ u›¨<T+¡ Ti•‹ Ã"›?ÇM u}ÚT]U ¾¢Uú}` òÉv¡ ØpU					

	LÃ Ã¨<LM					
9	**›ÖnLÃ ¾U`qT'ƒ ØÑ":-** É`Ï~ ¾Ti" Scu`" ^" ¾U`ƒ H>Åƒ S²Ó¾ƒ" KTe¨ÑÉ G<K<"U SÑMÑÁ Sd]Á-‹ uØ\ G<'@q ÃÃ³M					
10	**"Uv":-** uÉ`Ï~ ¨<eØ Ÿ›"Æ ¡õM ¨Å K?L ¡õM ¾T>ðKÑ< °n-‹ ›Ã'ƒ ^" w³ƒ KT²´ ^" KTe}LKõ ¾T>[Æ "`Ê‹ ØpU LÃ ¨<Kª M					
11	**M¡ uc›~ :-** ¾T>ÁeðMÑ< Ø_ °n-‹ : ÁKl U`„‹ ¨²} ¨ÅT>SKŸ}¨< ¡ðM ¾T>k`u<ƒ M¡ c=ÁeðMÑ< '¨<::					
12	**U`qT'ƒ" ThhM:-** U`qT'ƒ ŸÑ>²? ¨Å Ñ>²? ^¾}hhK '¨<					
13	¾Å"u™‹ õLÔƒ T°ŸL© TÉ[Ó:- É`Ï~ ¾Å"u™‹" õLÔƒ vTŸK SMŸ< Ãc^M::					
14	**›¨<„T@i":-** É`Ï~ ¾}KÁ¿ ›¨<„T+¡ Sd]Á-‹" ue^ LÃ Á¨<LM					
15	**²?a wMiƒ:-** ¾Å`Ï~ U`„‹ S<K< KS<K< ŸwMiƒ ¾çÆ "+¨<::					
16	**›ÇÇ=e U`„‹" TU[ƒ:-** É`Ï~ u¾Ñ>²?U ›ÇÇ=e ¾U`ƒ ›Ã'„‹" Ák`vM::					

K. ¾›S^` õMeõ":- uÉ`Ï~ ¨<eØ ¾T>Ÿ}K<ƒ ¾›S^` õMeõ"-‹ U" ÁIM }}Ów[ªM

}.l	Seð`„‹	u×U ›MeTTU	›MeTTU	Hdw ¾K˜U	ˆeTTKG<	u×U ˆeTTKG<
1	›e}ÇÅ\ K"Ã²" S}Óu` S<K< ScÖƒ ›K¨<::					
2	^`e u`e ¾T>c^ u<É": u<É'<^`e u`e ^" Ÿu<É'< ¨<ß uÒ^ Ãc^M::					
3	G<K<U ¾É`Ï~ c^}™‹ u5~ T-‹ ²<]Á um ¾J' Ó"³u? • ^"Ç=•[¨< uTÉ[Ó uÉ`Ì~ ¨<eØ uT>Ñv ØpU LÃ ¨<KªM::					

4	G<K<U ¾É`Ï~ c^}™‹ U`qT'ƒ" ThhM LÃ ƒŸ<[ƒ ÁÅ`ÒK<::					
5	G<K<U ¾É`Ï~ c^}™‹ ŸSÚ[h ¨<Ö?ƒ ÃMp ¾e^ H>Åƒ LÃ ƒŸ<[ƒ ÁÅ`ÒK<::					
6	uÉ`Ì~ ¨<eØ SM"U ¾e^ xqˆ" e'UÓv` ›K::					
7	u<É•‹ uT>Ñv ¾}Å^Ì ˆ" }Óv^© "†¨<::					

N. ¾"Ã²" SS]Á-‹:- uÉ`Ï~ ¨<eØ ¾"Ã²" SS]Á-‹ U" ÁIM }}Ów[ªM

}.l	Seð`„‹	u×U ›MeTTU	›MeTTU	Hdw ¾K˜U	ˆeTTKG<	u×U ˆeTTKG<
1	G<K<U c^}™‹ KK¨<Ø ¾}²ÒË ›e}dcw ›L†¨<::					
2	G<K<U c^}™‹ uÔ ›SK"Ÿƒ" ›Çw[ªM					
3	dÁS'~ ›G<" ÁK¨<" ¾›c^` MUÉ KU"; uTKƒ SËS`					
4	Ÿ‹Óa‹ Ò` SÒðØ }ÚT] Øuw ˆ"ÅT>ÁeÑ˜ S[Çƒ::					
5	el}ƒ Ÿ}ðçS ¨Ç=Á¨< T[U					
6	Ñ"²w" ŸT¨<×ƒ ÃMk Øuw" ØpU LÃ TªM::					
7	õèU'ƒ ŸSðKÓ ÃMp ÁK¬ ›ðéçU ÓTi w‰ u=J"U Se^ƒ					
8	›Ueƒ Ñ>²? KU"; wKA SÖ¾p Ÿ²=ÁU Sc[q© ‹Ó\" SðKÓ::					
9	Ÿ›"É c¨< °¬kƒ ÃMp ¾w²< c-‹" °¬kƒ SÖkU					

S. ¾"Ã²" T°²•‹:- Ze~ T°²•‹ (Å[Í" T¨<×ƒ& w¡'ƒ" Te¨ÑÉ ˆ" 5~ T-‹) uÉ`Ï~ ¨<eØ U" ÁIM }}Ów[ªM::

}.l	Seð`„‹	u×U	›MeTTU	Hdw	ˆeTTKG<	u×U

		›MeTTU		¾K˜U		ˆeTTKG<
5~ T-‹ (T×^ƒ& TekSØ&TêÇƒ& TLSÉ &T´Kp)						
1	T×^ƒ :- É¨Ï~ ¾T>ÖpS<°n-‹" ŸTÃÖpS< °k-‹" uT>Ñv KÃ…M::					
2	TekSØ - G<K<U U`„‹ &°n-‹ ˆ" SÑMÑÁ Sd]Á-‹ uT>Ñv }Å^Ï}¨< }kUÖªM::					
3	TêÇƒ- G<K<U U`„‹ & °n-‹ ˆ" SÑMÑÁ Sd]Á-‹ ˆ" ¾e^ ›"vu= uT>Ñv ÃçÇM::					
4	TLSÉ - ¾5~ T-‹ ¾›c^` Å[Í TLSÉ uÉ`Ï~ ¨<eØ }Óv^© '¨<::					
5	T´Kp - ¾5~ T-‹ ²Koq KT[ÒÑØ uÉ`Ï~ ¨<eØ Ø[ƒ ÃÅ[ÒM::					
Å[Í T¨<×ƒ						
1	G<K<U ¾É`Ï~ e^-‹ e^¬" KTŸ"¨" ¾T>[Æ }Ñu= ¾J' ¾›c^` Å[Í ›L†¨<:: KUdK? ¾Ø^ƒ Å[Í& ›"É" e^ KTŸ"¨" ¾T>ðË¨< c¯ƒ Å[Í ¨.².}::					
2	G<K<U ¾É`Ï~ e^-‹ u}Ñu=¨< Å[Í eK SŸ"¨"†¨< IØØ` ÁÅ`ÒM::					
3	Å[Í-‹ ŸÑ>²? ¨Å Ñ>²? ¨Å}gK Å[Í ˆ¾}hhK< H@ÅªM::					
w¡'ƒ" Te¨ÑÉ						
1	ŸT>ðKÑ¨< uLÃ TU[ƒ k"dDM					
2	ŸT>ðKÑ¨< uLÃ U`ƒ SÁ´ k"dDM					
3	"K e^ uSÖup Ñ>²? TØóƒ k"dDM					
4	ÁK e^ ˆ"penc? TÉ[Ó k"dDM					
5	¾ƒ^eþ`ƒ w¡'ƒ k"dDM					
6	Å[Í¨<" ÁMÖuk U`ƒ" }SLi TÉ[Ó k"dDM					
7	¾e^ H>Åƒ c¯ƒ k"dDM					

¡õM ›Ueƒ: "Ã²″ KS}Óu` ÁÒÖS< }ÓÇa„<

}.l	Seð`„<	u×U ›MeTTU	›MeTTU	Hdw ¾K˜U	ˆeTTKG<	u×U ˆeTTKG<
1	u"Ã²″ ƒÓu^ Ñ>²? ²MTÇ© ¾J′ ¾q¾ ¾›c^` MUÉ }ÓÇaƒ″ ′¨<::					
2	u"Ã²″ ƒÓu^ Ñ>²? ¾›e}ÇÅ` ÉÒõ ¾T′e }ÓÇaƒ ′¨<::					
3	u"Ã²″ ƒÓu^ Ñ>²? ¨<Ö?qT ÁMJ′ eMÖ″ }ÓÇaƒ ′¨<::					
4	u"Ã²″ ƒÓu^ Ñ>²? ¾}T[¾c¨< %EÃM ˆØ[ƒ ‹Ó` ′¨<::					
5	}Ñu= ¾J′ ¾›}Ñvu` SKŸ=Á					
6	Um ÁMJ′ ¾c^}™‹ }dƒö					
7	u"Ã²″ ƒÓu^ Ñ>²? eK "Ã²″ ÁK ¾}dd} ›SK"Ÿƒ }ÓÇaƒ ′¨<::					

}ÚT] Hdw "KAƒ

_____

_____

_____

_____

eLu[Ÿ~ƒ ″l }dƒö Mv© ›¡wa,″ KSÓKê ˆ¨ÇK¨<<::

St. Mary University

School of graduate studies

1. What is your present position?_____
2. What is your involvement during and after implementation of kaizen in your company?

   _____

   _____
3. What is contribution of kaizen for your company; please list the benefits that your company harvests after implementation of Kaizen philosophy?

   _____

   _____

_____

_____

4. What are the major challenges your company face during and after implementation of Kaizen?

_____

_____

_____

5. What mechanism your companies use to motivate its employees?

_____

_____

6. Do you believe that motivation mechanisms are adequate to influence your company staffs?

_____

_____

7. Pleases forward your suggestions, and comments regarding kaizen implementation at your company? If any?

_____

_____

Annex B: Photos


ኤክሴል ፕላስቲክስ ኃላ.የተ.የግ.ማ
EXCEL PLASTICS P.L.C
ISO 9001:2008 Certified
House Hold
PPR
UPVC Pipe
UPVC Pipe
HDPE Pipe
Fittings
HDPE Pipe

Before and After Kaizen Implementation Photos of DH Geda Blanket Factory Plc

Improvement of temporary store area

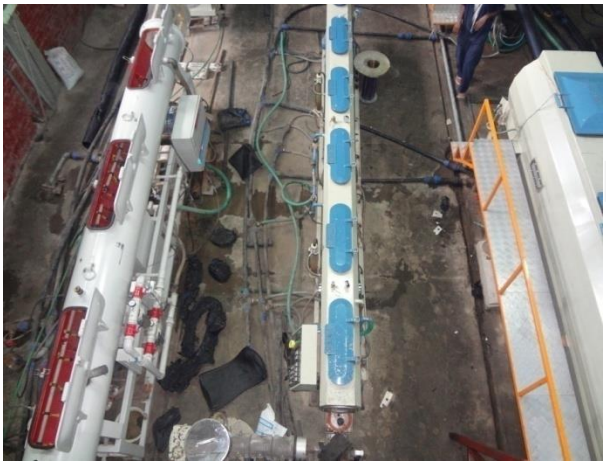
Before **After**

Improvement of searching time for punch and cavities

Before **After**

Improvement of Water leakage

Before **After**



Improvement of mould arrangement

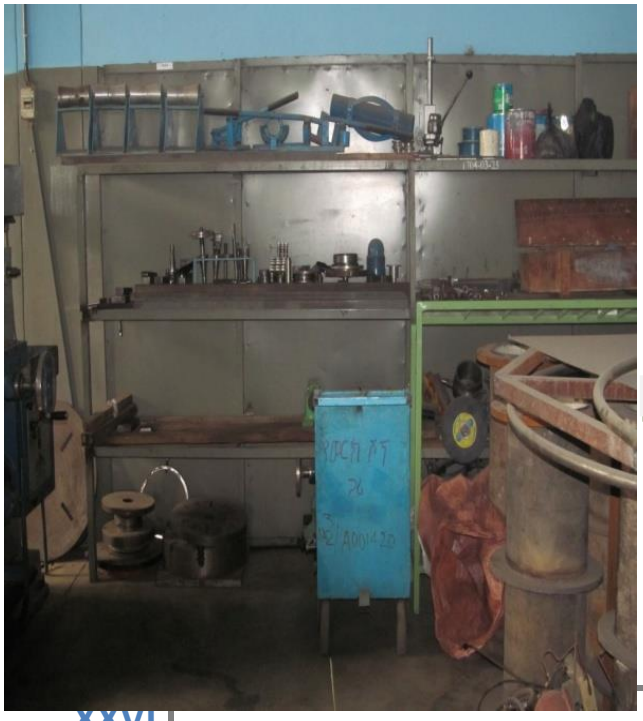
Before **After**

Improvement of tools set up

Before **After**

Improvement of tools set up

Before **After**




ዲ ኤች ገዳ
ብርድልብስ
ፋብሪካ
DH GEDA
BLANKET
DH GEDA
BLANKET
FACTORY

Visual Management Board at DH Geda Blanket Factory Plc

Before and After Kaizen Implementation Photos of DH Geda Blanket Factory Plc

Before ***After***

Before ***After***

Before ***After***

Before ***After***

Before ***After***

Before ***After***

Before ***After***

Before ***After***

Before ***After***

Transportation of raw materials

Before ***After***

Finfine Furniture Factory Plc

Before and After Kaizen Implementation Photos of Finfine Furniture Factory Plc

Before

After

Before

After

The company overall environment before implementation of kaizen

The company overall environment after implementation of kaizen

DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Temesgen Belayneh (PhD). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Biruk Asfaw Gebrehana
St. Mary's University, Addis Ababa

_____
Signature
December, 2016

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Temesgen Belayneh (PhD) _____

Advisor Signature

St. Mary's University, Addis Ababa December, 2016