



ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

INSTITUTE OF QUALITY AND PRODUCTIVITY MANAGEMENT

**PRACTICE AND CHALLENGES OF KAIZEN IMPLEMENTATION IN
SELECTED MANUFACTURING INDUSTRIES IN ETHIOPIA**

BY: CHALI IMIRU

ID NO. SGS/0413/2013A

ADVISOR: ASNAKE GUDISA (PHD, CANDIDATE)

MAY, 2022

ADDIS ABABA, ETHIOPIA

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**A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF
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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under guidance of my advisor, Asnake Gudisa (PHD candidate). 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.

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St. Mary University

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MAY, 2022

ADDIS ABABA, ETHIOPIA

ENDORSEMENT

This thesis has been submitted to St. Mary's University, school of graduate studies for examination with my approval as a university advisor.

Advisor

signature

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LIST OF ACRONYMS AND ABBREVIATIONS

5S: Sort, Set, Shine, Standardize and Sustain

CI: Continuous Improvement

EKI: Ethiopian Kaizen Institute

JICA: Japanese international cooperation agency

JIT: Just In Time

PDCA: Plan, Do, Check Act

PLC: Private Limited Company

SC: Share Company

SPSS: Statistical Package for Social Science

TPM: Total Productive Maintenance

TQC: Total Quality Control

TQM: Total Quality Management

ABSTRACT

Several manufacturing industries in Ethiopia have been trying to use Kaizen approaches to achieve high productivity and excellent quality standards to make them more competitive in the global market. Despite the benefits of implementing Kaizen and the successes of many companies that have been documented in many studies, have been challenging to achieve the goals of Kaizen events in their organizations. The objective of this study was to assess practices and challenges of kaizen implementation in selected manufacturing companies in Ethiopia. The researcher selected four companies, those actively practicing Kaizen, namely Anbessa Shoe S.C, Horizon Addis Tyre PLC, Belayab Cable Manufacturing and Sino-Ethiopia Associate Africa PLC. For this research, descriptive research design was employed, so as to have clear picture of phenomenon on which the researcher wish to collect data. Questionnaires were used to obtain data from the 120 respondents in the four companies. Analysis was done by using SPSS and Microsoft excels to compute mean, frequency and percentage. Additionally, the researcher was conducted direct observation by using checklists. The results on contribution of kaizen implementation of the four companies' verified that the companies have gained many benefits including increased sales volume, reduced costs, higher quality, increased productivity, greater employee satisfaction and a safer work environment, although the degree of their benefit is differing from company to company. The research finding found that Kaizen training, motivation and education and Kaizen three pillars are implemented on the four manufacturing companies at moderate and satisfactory level. The research finding shows that the companies were faced challenges of kaizen implementation by weak culture of work, lack of management support and misconception about kaizen. All the four companies have been challenged by employees' weak culture of work. Hence, all the four companies have gained various benefits, implemented kaizen at a different level and faced various challenges throughout kaizen implementation.

Keywords: Kaizen, Implementation, Challenges, Kaizen Three Pillars

CHAPTER ONE

1. INTRODUCTION

This chapter introduces the overall concept of the study. Including background of the study and background of the selected companies for this study were reviewed; statement of the problems, objective of the study, scope and significance of the study were introduced.

1.1 Background of the Study

Kaizen literally means improving, enhancing your personal and professional life. When a company adopts the kaizen model, it tries to improve its processes in small but significant ways. And not just a one-time improvement, but a commitment to excellence by continuously testing and improving the workflow, day in and day out. Kaizen is a philosophy and working method that allows people to take control of their work processes and improve them. By learning to keep an eye on possible changes, people can contribute in small ways that benefit the organization.

Today, companies use a Japanese management system called Kaizen to satisfy their customers and meet their needs due to their low competitiveness, poor quality, observation of productivity issues, and high waste. One of the ways these organizations and businesses can improve their competitiveness is to improve the effectiveness of their systems. Therefore, continuous improvement is an essential requirement for any business organization to maintain and gain a competitive advantage (Fasika & Alemayehu, 2020).

Born in Japan in the 1950s, Kaizen is one of the most widely used means of improving the effectiveness of business organizations, especially in Asia, with already well-documented advantages. Kaizen extends to East Asia, Europe and North America, increasing productivity in these regions. Industrial development has been successfully achieved in all developing countries where the use of this approach is widespread (Otsuka & Sonobe, 2018).

In Africa, Botswana began adopting Kaizen as early as the 1990s, followed by Egypt, Tunisia, Ethiopia, Zambia, Tanzania, Ghana, Kenya, Cameroon, Senegal, Sudan and the Republic of Congo. However, the vast majority of African business owners, business owners and workers are still unfamiliar with Kaizen (Otsuka & Sonobe, 2018).

The introduction of Kaizen in Ethiopia has been started with full assistance of Japanese International Cooperation Agency (JICA) following the request from Ethiopian government

for the transfer of Kaizen technology transfer through National Graduate Institute for Policy Studies (GRIPS) by the time when Ethiopia developed the national Growth and Transformation Plan with the desire of improving the managerial capability and capacity to implement the national strategy (Kidanemariam, Tsegay, & Mulu, 2020). Several manufacturing industries in Ethiopia are currently trying to use Kaizen approaches to achieve high productivity and excellent quality standards to make them more competitive in the globalized international market (Fasika & Alemayehu, 2020).

Kaizen is a management philosophy and know-how that delivers continuous, participatory, incremental, low-budget improvements in quality, productivity, cost, delivery, safety, morale and environment. Kaizen improves productivity gradually, step by step, step by step (Otsuka & Sonobe, 2018). According to Boca cited in (Abraham, 2021) successful implementation of kaizen will reduce consumption and costs, increase productivity, reduce lead times, and increase flexibility to meet customer requirements. Despite the benefits of implementing Kaizen and the successes of many companies that have been documented in previous studies, many companies have failed to achieve the goals of Kaizen events in their organizations.

To sum up Kaizen is a management philosophy and know-how that delivers continuous, participatory, incremental, low-budget improvements in quality, productivity, cost, delivery, safety, morale and environment. Hence successful implementation of kaizen reduces consumption and costs, increase productivity, reduce lead times, and increase flexibility to meet customer requirements.

1.2 Background of the companies

A. Anbessa Shoe Share Company

Anbessa shoe Share Company was established in 1935 making us the oldest shoe manufacturing businesses in Ethiopia. They are committed to local and foreign customers by providing a wide selection of shoes made from pure leather and by producing 4,500 pairs of shoes per day. Having started by providing to local customer needs, Anbessa now has an international market base with globally renowned brands. Throughout the years, Anbessa has gone through different ownerships and brands leading to today are globally known private company. Anbessa Shoes S.C; implemented kaizen philosophy starting from 2016/ 17.

B. Sino-Ethiop Associate Africa

Sino-Ethiop Associate (Africa) plc (SEAA) is a pharmaceutical plant in Addis Ababa, Ethiopia which is involved exclusively in manufacturing & marketing of empty hard gelatin capsule. SEAA is a sole producer of Empty Hard Gelatin Capsules in sub Saharan Africa. Continuous quality improvement is pursued through a Quality Assurance Program which ensures consistency, uniformity, and conformity. Sino-Ethiop Associates PLC has benefited from kaizen implementation in the area of quality and productivity.

C. Horizon Addis Tyre

The production of tyres in Ethiopia goes back to 1973, when Addis Tyre S.C. (ATC) the first of its kind in the country, was established with a yearly production capacity of 60,000 tyres and a total labor force of 260 people. Major inputs and raw materials for tyre manufacturing are imported from Malaysia, India, China, Indonesia, Egypt and Europe. Natural Rubber is one of the major inputs. Among those imported raw materials, the price of natural rubber is constantly growing. Addis Tyre S.C. has benefited from kaizen implementation in the area of quality and productivity.

D. Belayab Cable Manufacturing plc

Belayab cable manufacturing private limited company is established in 2008 by two companies and four individual share holders with Company to manufacture low voltage, Copper Wire and Cable, all aluminum Conductor all aluminum alloys, and aluminum conductor steel reinforced electrical conductors, overhead transmission line and data cables. Belayab cable manufacturing is among the companies' implemented kaizen in the area of quality and productivity.

To successfully implement Kaizen, companies need to anticipate potential challenges against implementing Kaizen. Based on this, this study examines the practices and challenges of implementing Kaizen in these four pilot companies for the proper implementation of Kaizen in manufacturing companies for sustainability increase.

1.3 Statement of the Problem

Kaizen approach helped many firms all across the globe to achieve better operational excellence and improve their productivity. Implementing and sustaining Kaizen can help organization to improve quality, Improve manpower productivity, Reduce inventory, Shorten the production line, Reduce machine downtime, Reduce space, Reduce lead time.

Now a day in Ethiopia there is kaizen institute working for governmental and public associations to develop and improve the manufacturing work ethics, but a number of manufacturing industries in Ethiopia currently are not using methods that help them achieve high productivity and excellent quality standards to make them more competitive in the global markets. Many manufacturing companies are affected by such problems due to high quality rejects, high inventories, long lead time of production, high costs of production, and incapability to cope up with customer orders. This is because; most of the activities taken for quality and productivity improvement are through top-down approaches without the best management skills.

Although many organizations understand the need to implement the kaizen manufacturing technique in their establishments, not all companies are successful with the implementation, as managing kaizen activities is not an easy task. (Garcia-Sabater & Marin-Garcia, 2011) In their study identified resistance to change especially among mature workers, and confusion on the concept of continuous improvement as some of the challenges to successful Kaizen implementation. However, (Robinson & Schroeder, 2004) noted that some of the challenges include the inability of some organizations to motivate their employees to participate in the kaizen activities due to the absence of compensation or reward, lack of proper training for the employees, as well as long delays in processing of suggestions. (Maarof & Mahmud, 2016) are listed some of the challenges of implementing Kaizen including resistance to change; failure to motivate employees, lack of understanding on companies' strategic path, as well as difficulties in managing continuous improvement. Others are resistance to change (culture), motivation, training, companies' strategies, and globalization.

According to D. Kitaw cited in (Tamrat, 2016) Experience of Kaizen in Ethiopia shows that Authoritative power is concentrated in the hands of top managers and awareness creation among the management and employees took much time. On the other hand, workers' motivation to improvement and change in the organizations were very limited. Studies by (Abate, 2020) show that proper communication has not emerged as a key factor in the effective implementation of

Kaizen in Ethiopia. The most plausible reason could be the fact that Kaizen is a continuous process improvement technique. Therefore, communication needs to be bottom-up. But in Ethiopia, communication looks like top-down. Top management implements changes, develops process improvement ideas, and communicates them to lower-level employees.

The 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 (Asayehgn, Hadush, Alula, & Mengstu, 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. As the study by (Fasika & Alemayehu, 2020) revealed that Kaizen was perceived to be effective tools for improving enterprises` performance and participants expressed desire to benefit from it. Moreover, the study further revealed a number of challenges confronting the feasibility of Kaizen practices.

Kaizen needs to overcome some pitfalls and challenges to capture the attention of stakeholders. The above studies show that the challenges being faced in the implementation of Kaizen in some Ethiopian manufacturers. And also the studies show that of as slightly differences of challenges are there from one company to another. The researcher therefore aimed for pilot study by selecting another four manufacturers, those are experiencing the kaizen actively, to identify the practices and challenges of Kaizen implementation and to examine areas where improvement is desired.

1.4 Research Questions

1. What are the good practices with kaizen philosophy?
2. What are the contributions of Kaizen management philosophy for manufacturing companies?
3. What are the challenges for companies in Kaizen implementation?
4. What lessons to be learning for further improvement?

1.5 Objectives of the Study

1.5.1 General objective

The general purpose of this study is to find the practice and challenges for Kaizen implementation in manufacturing companies in Ethiopia.

1.5.2 Specific objective

Specific objectives of this study are: -

- To assess the practices of Kaizen management philosophy.
- To determine the contribution of Kaizen practices improves organizational performance.
- To find the challenges involved in implementing Kaizen practices in the companies.
- To pinpoint lessons for further improvement.

1.6 Definition of terms

Kaizen: change for the better or continuous improvement (Hargrave, 2021).

Muda: refers to processes or activities that don't add value (Bradbury, 2018).

Gemba: the actual or the real place (university of western australia).

1.7 Scope and limitation of the study

The coverage of this study was only the practice and challenges of kaizen implementation faced and facing in selected manufacturing firms i.e. Horizon Addis Tyre Share Company, Anbessa shoe Share Company, Belayab Cable manufacturing PLC and Sino-Ethiop Associate Africa located in Ethiopia. These selected manufacturing firms are from among implemented the kaizen and practicing actively. However, the findings may represent for identical manufacturing firms indirectly. The survey was carried out in beginning of 2022. The study is limited in terms of its respondents. The bias and hesitations of respondents can affect the analysis of the survey in a significant manner.

1.8 Significance of the Study

This study has both theoretical and practical significance. The assessment of practice, successes and challenges of Kaizen implementation in manufacturing firms helps to understand kaizen practice, successes and its obstacles to implement and sustain the system in manufacturing firms successfully.

In sum, the findings of this study helps all stakeholders within the kaizen program mainly; manufacturing firms, consultants, researchers, EKI and policy makers, to improve the practice of the kaizen implementation process in Ethiopian context and create some awareness in kaizen philosophy.

1.9 Organization of the Paper

The proposal 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 results and discussions. Chapter five is summary of findings, conclusion and recommendations. The paper has also preliminary and supplementary parts.

CHAPTER TWO

2. LITERATURE REVIEW

This chapter provides a theoretical base for the study by reviewing of the related literature pertaining to manufacturing firms and concept of kaizen and its implementation for manufacturing firms. The chapter is organized into Meaning and Concept of Kaizen; practices of kaizen in manufacturing firms in Ethiopia; Challenges of kaizen implementation and finally the Empirical Literature Review were discussed briefly.

2.1 Definitions and Theoretical Concepts of Kaizen

The term “kaizen”, is made up of two Japanese terms; “kaizen” meaning change and “Zen” meaning good, simply means “change for the better”. Literally translated it covers all steps and efforts taken to implement improvements continuously. Kaizen refers to an organization wide approach with its foundation on common sense, voluntary discipline, and conscious effort to reduce wastage and rework. It forms the essence of lean manufacturing and is applicable to everything in the organization right from personal efforts, production processes, purchase, supply chain and even software development. The hall mark of Kaizen is that it involves everyone right from the CEO/head of the organization to the shop floor operator as well as the security guard at the gate of the organization (Kirti, Salil, & Ameet, 2019).

Kaizen is the management philosophy and know-how that brings about continuous, participatory, incremental, and low-budget improvements in quality, productivity, cost, delivery, safety, morale, and environment (or QPCDSME). Indeed, just like other philosophies, the concept includes both the humanities and the sciences. It is human-friendly and participatory. It is a collection of ideas and insights that many managers and workers from firms in the manufacturing and service sectors have created and refined through observations and experiments carried out over several decades in Japan and other parts of the world (Otsuka & Sonobe, 2018).

Kaizen improves productivity in a step-by-step, incremental, progressive manner. It has been used primarily in the manufacturing sector but has also been applied to health, education, public administration, and other services and can be applied to micro and small enterprises as well as medium and large firms. It can be applied to offices, retail shops, and service counters as well as machine shops, workshops, and garages, top physical desktops as well as computer and smart

phone desktops, and even to everyday life. Such versatility gives it a philosophical image (Otsuka & Sonobe, 2018).

To sum up “kaizen”, is made up of two Japanese terms; “Kai” meaning change and “Zen” meaning good, simply means “change for the better. Kaizen is the management philosophy and know-how that brings about continuous, participatory, incremental, and low-budget improvements in quality, productivity, cost, delivery, safety, morale, and environment (or QPCDSME). It can be applied to offices, retail shops, and service counters as well as machine shops, workshops, and garages, to physical desktops as well as computer and smart phone desktops, and even to everyday life. It forms the essence of lean manufacturing and is applicable to everything in the organization right from personal efforts, production processes, purchase, supply chain and even software development.

2.2. Kaizen Tools

There are many methods and concepts of *Kaizen* that can be used to achieve quality and productivity improvements. According to Imai cited in (Biruk, 2016) the tools that are used to implement Kaizen, also known as Kaizen umbrella, the techniques associated with Kaizen included are, total quality control (TQC)/TQM, just in time (JIT), total productivity maintenance (TPM), 5S, Benchmarking, skill gap analysis, six sigma the information about it found under TQM, Policy Deployment, a Suggestion System, Small-group activity, etc.

Table 2.1: Selected Components of the Kaizen Toolkit

Terms	Explanation
5S	5S is a philosophy and checklist for good housekeeping to achieve greater order, efficiency and discipline in the workplace. It is derived from the Japanese words Seiri (Sort), Seiton (Straighten), Seiso (Shine), Seiketsu (Systematize), and Shitsuke (Standardize/ Self - Discipline). There are also different English renditions
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.
Quality control Circle (QCC)	QCC is a small group of workers who collectively find a problem discuss alternative remedies, and propose a solution. QCCs voluntarily perform improvement activities within the workplace, as part of a company - wide program of mutual education, quality control, self - development and productivity improvement.
Total Quality Control (TQC)	TQC is an organized activity involving everyone (from managers to workers) in a totally integrated effort towards kaizen at every level. It is equivalent to Company- Wide Quality Control (CWQC).
Total Quality Management (TQM)	TQM represents a number of management practices, philosophies and methods to improve the way an organization does business, makes its products, and interacts with its employees and customers. QCC activities function as an integral part of TQM. TQM evolved from TQC in the late 1980s.
Toyota Production System (TPS)	TPS is the philosophy which organizes manufacturing and logistics at Toyota, including interaction with suppliers and customers. It focuses on the elimination of waste and defects at all points of production including inputs, process and final output (delivery). The term “Lean Production System” can be used interchangeably.
Just- In - Time (JIT) System	JIT, a part of TPS, is a production system aimed at eliminating non-value- adding activities of all kinds and achieving a lean production system flexible enough to accommodate fluctuations in customer orders
Kamban System	Kamban refers to a communication tool in the JIT production and inventory control system, developed at Toyota. A kamban (signboard) is attached to a given number of parts and products in the production line, instructing the delivery of a given quantity. When the parts have all been used, the kamban is returned to its origin where it becomes an order to produce more
The Toyota Production System (TPS)	An integrated socio-technical system, developed by Toyota that comprises its management philosophy and practices. The TPS organizes manufacturing and logistics for the automobile manufacturer, including interaction with suppliers and customers. The system is developed between 1984 and 1975. The Principles of Toyota Production System are Continuous improvement, Root cause analysis, Visualization, Proof mistake, Standardize work, Respect of employees, Simplification, Continuously solving root problems.

Source: from (Izumi Ohno, Kenichi Ohno, and Sayoko Uesu) Introducing KAIZEN in Africa (Preliminary draft) cited in (Eden, 2019), (Thessaloniki, 2006)

2.3 Principles of kaizen

As Ethiopia Kaizen institution Manual cited in (Eden, 2019) listed Kaizen guiding principles are:

- 1) Integrated total company approach: Genuine participation of top management, middle managers and front- line employees in a collaborative working system throughout company organizations
- 2) Proactive and spontaneous participation of employees of front- line workplaces with their own initiatives
- 3) Focus on the workplace that encourages improvements of efficiency in existing resources allowing low cost improvements to accumulate for significant contribution to the company goals
- 4) Continuous and endless activities in revolving cycles of PDCA resulting in significant improvements
- 5) Endogenous undertaking conducive to change in organizational culture: Practicing KAIZEN in itself leading to a corporate culture of continually self - innovative organization and self motivated workforce.

2.4 The three pillars of kaizen

Imai, a guru in these management philosophies and practices as cited in (Tamrat, 2016) and in his book of Gemba Kaizen (Imai M. , 2012), the three pillars of Kaizen are Housekeeping, Waste Elimination and Standardization.

The five steps of housekeeping, with their Japanese names, are as follows:- Seiri: Distinguishing between necessary and unnecessary items in the Gemba, and discard the latter; Seiton: Arrange all items remaining after Seiri in an orderly manner; Seiso: keep machines and working environment clean; Seiketsu: Extend the concept of cleanliness to oneself, and continuously practice the preceding three steps; Shitsuke: build self –discipline and make a habit of engaging in 5s by establishing standards. Sort means removing from the work place all items that are not needed for current production operation. Set in order means arranging needed items so that they are easy to use and labelling them so that they are easy to find and put away. Shine means sweeping floors,

wiping off machinery, and generally making sure that everything in the factory stays clean. Standardize is the method for maintaining the first three pillars. Sustain means making a habit of properly maintaining correct procedures (Fikadu, 2018).

In Japanese, the word Muda means waste. Any activity that does not add value is Muda. According to Kr cited in (Biruk, 2016) there are various aspects of Muda eliminations that are explained as follows: A) Muda of over production 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. B) Muda of inventory is the result of over production. If you process only Produces what the next process needs, you can eliminate Muda of inventory altogether. C) 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. D) Muda of motion when the operator is moving around, looking for tools or going to get the work pieces, no value is added. E) Muda of transportation when materials are moving on the trucks, forklifts, or on the conveyer, no value is added. F) Muda of producing rejects producing rejects leads to rework, or else rejects must be thrown away. G) Muda of processing by rearranging the working sequence, often you can eliminate a particular process.

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 being followed then if there are deviations, the workers know that there is a problem. Then employees will review the standards and either corrects the deviation or advice management on changing and improving the standard (Tamrat, 2016).

Whenever things go wrong at the Gemba, such as producing rejects or dissatisfying customers, management should seek out the root causes, take actions to remedy the situation, and change the work procedure to eliminate the problem. In kaizen terminology, managers should implement the standardize-do-check-act (SDCA) cycle. With current standards in place and workers doing their jobs according to those standards with no abnormalities, the process is under control. The next step is to adjust the status quo and raise standards to a higher level. This entails the plan-do-check-act (PDCA) cycle. It is a never ending process and better explained and presented by the PDCA cycle (plan -do-check-act), known as Deming Cycle (Imai M. , 2012).

2.5 Success indicators in Kaizen implementation

Effect of consequences of performing kaizen on the achievement of tangible and tangible results (Imai M. , 1986): Tangible effect: increase market share, increase sales volume, increase production volume, successful new product development, shorten product development time, improve quality, fewer complaints , reduce the cost of errors, More employee recommendations, Fewer industrial accidents. Intangible Effects: Raise awareness and participate in the management of it all, Raise awareness of quality and awareness of problems, Better communication both horizontally and vertically, Improve Quality of work, Improve human relations, Improve feedback, Improve management skills, Clear separation of responsibility and authority, More confidence in new product development, Shift to mindset goal orientation, Improved standardization, More active use of statistical quality control (Imai M. , 1986).

2.6 Hierarchy of Kaizen Involvement

The hierarchy of Kaizen involvement including four chain of instructions of responsibility and duty in line with (Imai M. , 1986). These are: 1) Top Management: Determine to introduce Kaizen as a company strategy, Provide assist and course for Kaizen with the aid of using allocating resources, Establish coverage for Kaizen and move purposeful dreams, Realize Kaizen dreams via coverage deployment and audits, Build gadget, procedures, and systems conducive to Kaizen. 2) Middle Management and Staff: Deploy and put in force Kaizen dreams as directed with the aid of using pinnacle control via coverage deployment and move purposeful control, Use Kaizen in purposeful capabilities, Establish, maintain, and improve standard, Make personnel Kaizen aware via extensive education programs, Help personnel increase talents and gear for hassle solving. 3) Supervisors: Use Kaizen in purposeful rules, Formulate plans for Kaizen and offer steerage for people, Improve verbal exchange with people and maintain excessive morale, Support small institution activities (inclusive of great circles) and the man or woman inspiration gadget, Introduce area within side the workshop, Provide Kaizen suggestions. 4) Workers: Engage in Kaizen via the inspiration gadget and small institution activities, Practice area within side the workshop, Engage in non-stop self-improvement to emerge as higher hassle solvers, Enhance talents and process overall performance knowledge with move training (Imai M. , 1986).

2.7 Some identified challenges for Kaizen philosophy implementation

Training and Education

To be successful, training and education are linked to worker training and management commitment to continuous improvement projects; hence, this component is linked to people, managers, and operators (Jorge, Denisse, & A.I., 2013). More involvement entails more responsibility, which necessitates a higher level of ability. This can only be accomplished through education. Training is an important aspect that aids in the pursuit of continuous progress. Kaizen training entails teaching and training all employees, as well as assisting them in gaining knowledge and providing information about the purpose, vision, direction, and organizational structure in order for them to obtain skills and thereby address the problem. Staff development, policy formation, and planning will determine the success of a company.

Management Commitment and Leadership

The direct involvement of senior management allows all decisions to be made quickly and facilitates the Kaizen journey. Senior management support is needed to demonstrate the availability of specific actions. Action can be taken to establish Kaizen structure and policies, engage all employees, disseminate Kaizen information, manage the change process, and organize the date of continuous improvement activities. Management is committed to always being aware of the change request. Among the commitments that should be highlighted are renewing and updating key organizational elements, implementing structural changes within the organization, preparing for a new job specification, resolving conflicts that must be faced and ensure the participation of its members and create an effective plan to improve the management of an organization. Management skills can significantly motivate employees. The management style adopted by the top management can motivate the staff. Leadership is committed to promoting cooperation rather than competition within the organization (Norhayati Z., 2012).

Effective Communication

Communication can be vertical or horizontal. Vertical communication between different structural levels of the organization and horizontal communication, between leaders of different projects, cooperation and support was needed for successful Kaizen implementation (Jorge, Denisse, & A.I., 2013). Communication is inextricably linked with the Kaizen process, but some leaders find it difficult to tell others about the plan in an understandable way. Another difficulty is filtering. As senior management's vision for Kaizen filters down the ranks, visions and plans can lose both

clarity and momentum. Therefore, senior management as well as managers and supervisors at all levels act as translators and enforcers of senior management directives. The ability to communicate is a valuable skill at all levels, from frontline supervisors to senior executives. The element of communication helps to build trust with others, incentivize and share risks.

Documentation and Evaluation

Documentation and assessment friends with the behavior of documentation, document of activities, and commitments received through every crew member for non-stop development, targets, and achievements the use of the good enough formats, ideally standardized amongst all development businesses that exist within side the company, which might facilitate communication and reviews or informs the thing variety in importance. It additionally refers back to the status quo of requirements and suggestions that suggest the way to degree the overall performance indices for the businesses established. Besides, on this thing, want to set up structures and everyday periodic assessment for the organization is noted, all as a tracking technique (Jorge, Denisse, & A.I., 2013).

Integration and reward

This factor is related to the integration that must exist by workers in decision making process of the company, since rarely they know the problems of production systems and may have a better assessment of technical aspects so that their opinions should be heard. However, this process of integration to work in a company requires the recognition of his/her work when the activities entrusted to them have full compliance and when they have an ongoing involvement in solving problems. Employees shall be given due recognition for their contributions and their ideas. It is a psychological process to develop confidence between the members of the organization and encourage them to make decisions and solve problems with each other (Jorge, Denisse, & A.I., 2013).

Employee Involvement

Employee involvement is a process by which employees participate in management decision making and improvement activities appropriate to their levels in the organization. In the end, there is only one thing that separates one company from another, and that is its people. Neither the product, nor the service facilities, nor the process nor the secret ingredients; finally, any of them can be copied. The Japanese have always realized this, and that is one of the reasons for their success in the global market, they value the combination of people with organizational goals, equipment and processes (Norhayati Z., 2012).

Teamwork

Teamwork can unite all personnel in an organization to achieve continuous improvement. This spirit made possible the cooperation, commitment and participation of employees in the overall continuous improvement program initiated by the organization. It therefore implies the coordinated action of employees, through their role in contributing skills, judgment and experience to a particular task (Norhayati Z., 2012).

Culture for change and improvement

A culture of change and improvement is combined with a culture of change and improvement, which means that processes are not accepted as they are, and executives and managers are always looking for opportunities to improve. This culture of change also manifests when some workers are removed from their work area because they are no longer needed due to an improvement that has been made (Jorge, Denisse, & A.I., 2013).

2.8 Challenges in implementing kaizen in Africa

As per GRIPS cited in (Biruk, 2016), and as the study by (Abera, 2015) there are some 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.

In Africa, Botswana began introducing *Kaizen* as early as in the 1990s and has been followed recently by Egypt, Tunisia, Ethiopia, Zambia, Tanzania, Ghana, Kenya, Cameroon, Senegal, Sudan, and the Republic of the Congo. However, the majority of business owners, managers, and workers in Africa remain unfamiliar with *Kaizen*. Four major possible challenges of Kaizen for Africa were mentioned in a book of applying kaizen in Africa are: (Otsuka & Sonobe, 2018)

Challenge 1: In other continents, *Kaizen* has proven to be one of the best approaches, if not the very best, for creating discipline in workers and making them capable of upgrading their

knowledge and skill sets. Still, the question remains as to whether it will work effectively in Africa. In short, is the concept transferable to Africa? Can workers in Africa accept *Kaizen* and feel comfortable enough to implement it? American firms, Chinese firms, European firms, and East Asian firms have modified *Kaizen*; thus, a challenge for African workers and firms is to absorb, assimilate, and customize it for their own purposes.

Challenge 2: The commitment of the top-level management to support and encourage workers to undertake activities that include *Kaizen* is indispensable. When, through hard work and perseverance, workers succeed in bringing about some improvement, top management should appreciate the achievement. When workers request permission to try work-space layout changes for example, top management should positively consider it. Without knowing the value of *Kaizen*, however, it is difficult for top management to commit itself, and without having achieved success, it is difficult to convince top management of the value of *Kaizen*. Thus, securing a commitment from top-level management will be a challenge.

Challenge 3: Although *Kaizen* is human-friendly and approachable, it requires very basic skills such as literacy and numeracy. In those countries where universal lower-secondary education is far from the reality, it may take longer time to widely diffuse *Kaizen*.

Challenge 4: According to a certain survey, less than 30 percent of firms that received *Kaizen* training in the past continue to practice *Kaizen*. Is it possible to make *Kaizen* more sustainable?

Hence these four most challenges of kaizen implementation in Africa can be also challenges in Ethiopia.

2.9 Practices and challenges of kaizen in Ethiopia

The introduction of Kaizen in Ethiopia has been started with full assistance of Japanese International Cooperation Agency (JICA) following the request from Ethiopian government for the transfer of Kaizen technology transfer through National Graduate Institute for Policy Studies (GRIPS) by the time when Ethiopia developed the national Growth and Transformation Plan with the desire of improving the managerial capability and capacity to implement the national strategy (Kidanemariam, Tsegay, & Mulu, 2020).

Three consecutive *Kaizen* projects, supported by JICA, have been implemented in Ethiopia since October 2009. The first pilot project was undertaken to confirm the transferability of *Kaizen* and

study how use of the concept could be expanded after the JICA project was completed. The initial introduction of *Kaizen* into selected pilot companies proved the receptiveness of Ethiopian companies to new initiatives and showed encouraging results in improving quality and productivity. Encouraged by the results of the project, the Ethiopian government established the Ethiopia *Kaizen* Institute to disseminate and expand on the results attained during the pilot project. The second project was aimed at training Ethiopian *Kaizen* consultants in order to build the capacity of the institute. In this project, 57 *Kaizen* consultants and 133 trainers from Technical and Vocational Education and Training (TVET) Institutes received training. The Ethiopia *Kaizen* Institute enthusiastically launched the *Kaizen* movement in large-scale sugar, textile, and leather companies using trained consultants. Highly promising quantitative and qualitative changes were recorded. The change in attitudes and the creation of smooth relationships in situations where there was strong conflict between management and the workforce were the most outstanding results. The monetary values of achievements attained each year amounted to hundreds of millions of birr. The third project is designed to transfer advanced-level *Kaizen* knowledge, with 90 *Kaizen* consultants passing through this project. Around 30 companies that previously disseminated *Kaizen* during the pilot and second projects had been introduced to advance *Kaizen*. Ethiopia designed its own local capacity-development program in collaboration with local universities (Otsuka & Sonobe, 2018).

According to Experience of Kaizen in Ethiopia D. Kitaw and October cited in (Tamrat, 2016) shows that Authoritative power is concentrated in the hands of top managers and awareness creation among the management and employees took much time. On the other hand, workers' motivation to improvement and change in the organizations were very limited.

Work culture challenges in Ethiopia

Japanese working culture and thinking is more than kind to high productivity innovation is a reason to succeed in the practice of Kaizen. According to George, socio-cultural characteristics of Japan influence work culture in offices and have good land for successful in Kaizen culture (Jorge, Denisse, & A.I., 2013).

Culture affects the management styles, decision making processes, the worker responsiveness and perceptions of problems. According to George, Japanese have developed their own skills of management, which stem directly from lifestyle and social values and beliefs. The Japanese lifestyle has been prompted with the aid of using Taoist, Confucian, Asian and Western ideas. Unlike Ethiopians the Japanese are homogenous race, each linguistically and culturally and most

importantly in relation to the alternate management Japanese are surprisingly flexible to embrace alternate which is a key for Kaizen implementation. Ethiopians and Japanese have additionally similarities in phrases of getting excessive energy distance, excessive uncertainty avoidance and being excessive collectivist in contrast to the western Culture.

Therefore, the question is whether Ethiopian labor culture is friendly to KAIZEN culture and how to contextualize KAIZEN principles and tools without degrading the standards of the KAIZEN approach. Therefore, the challenge for is how Ethiopian companies apply Kaizen principles implements preferred working environment based on Kaizen philosophy.

As (Andrew, 2013) indicated in his research “Improving Process for Good in East Africa” Work Culture in Africa in general and Ethiopia in particular, timeliness is not a priority. Andrew really stated in his article that conferences and social occasions begin late. And lateness is appropriate or even expected. Andrew also cited Mandela saying “South African have no concept of time and this is also why we cannot clear up poverty and social problems.

In his research Andrew identified more cultural challenges that the researcher, being an Ethiopian, believes the identified issues are truer to Ethiopian Context than other African countries. The cultural issues identified are

- High level of corruption which required extra reviews and approvals burden processes.
- People don't follow written instructions
- Poor quality is the norm
- It's not a problem until it's a problem
- Life is unpredictable
- Workers are not expected to innovate

The findings of the research by Andrew inform that the Kaizen implementation in Ethiopia will have challenges related to way of life change. To make decisions faster and to remove the none value including methods steps, it without a doubt calls for way of life change; the way how people do their paintings and the mind-set shift from 'it is okay 'to 'we need to change 'thinking. Other researches like (M, 2017) and (Tigist, 2015) in their thesis for their Master's degree also confirmed the same culture related issues are bottlenecks of the Kaizen implementation in companies which piloted the implementation. Many researches affirm that culture change is critical factor in successful implementation of Kaizen when transferred to other cultures (Anh, 2011). Emphasized

the fact that the success of Kaizen culture transfer is highly dependent on the culture context of a given country where Kaizen is implemented.

2.10 Related Empirical Studies

As the survey (Eden, 2019) shows, even though Anbessa Shoes Company has good working conditions and improved employee performance, it does not practice Kaizen's principles. Implementation of 5S has not been practiced, so the work tools are not placed correctly and the workplace is not standard.

Studies by (Abate, 2020) show that proper communication has not emerged as a key factor in the effective implementation of Kaizen in Ethiopia. The most plausible reason could be the fact that KAIZEN is a continuous process improvement technique. Therefore, communication needs to be bottom-up. But in Ethiopia, communication looks like top-down. Top management implements changes, develops process improvement ideas, and communicates them to lower-level employees.

As the study by (Fasika & Alemayehu, 2020) revealed that Kaizen was perceived to be effective tools for improving enterprises' performance and participants expressed desire to benefit from it. Moreover, the study further revealed a number of challenges confronting the feasibility of Kaizen practices.

The study by (Desalegn & Zerihun) results regarding top management commitment, training, development and communication of clear and specific goals and objectives, interdisciplinary team formation, roles played by different kaizen participants including team leader, team member, and consultant and process owner are moderate and therefore hinders to some extent the successful implementation of Kaizen philosophy in Wonji and Kadisco Chemical Industries.

The 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 (Asayehgn, Hadush, Alula, & Mengstu, 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.

As studied by (Biruk, 2016) the result of pilot study 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. Finfine Furniture Factory Plc, on the other hand, faces challenges due to inadequate employee involvement and misunderstandings about Kaizen.

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

This chapter presents the research design, sample size, target population and Sampling technique. Furthermore, Reliability test and consistency of data is presented.

3.1 Research survey Design

The main purpose of the study is to find out practice and challenges of kaizen implementation in some selected manufacturing firms. A descriptive survey design was used so as to reveal the practice, successes and challenges of kaizen implementation in the firms. Descriptive survey design aims to accurately and systematically describe a population, situation and phenomenon. A descriptive research design can use a wide variety of research methods to investigate one or more variables. It is an appropriate choice when the research aims to identify characteristics, frequencies, trends, and categories (McCombes, 2022).

3.2 Population and Sampling techniques

According to (Diamantopoulos, 2006), a population is a group of items that a sample will be drawn from. The target populations of the study are Kaizen implemented and actively practicing manufacturing companies. Due to time constraint the researcher selected four manufacturing companies namely Anbessa Shoe S.C, Horizon Addis Tyre PLC, Belayab Cable Manufacturing and Sino-Ethiop Associate Africa PLC. Bases for selection for the companies were Kaizen implemented and succeeded, and then willingness of their management organs and the kaizen team to conduct the research. The researcher uses purposive sampling, selected samples that satisfy their specific purposes. The participants for the study were all permanently employed, educated, experienced and directly worked at kaizen implemented operational areas. This was done for the sake of getting sufficient information about Kaizen.

3.3 Sample Size and Sampling Procedure

As per (Kothari, 2004) Non-probability sampling is that sampling procedure which does not afford any basis for estimating the probability that each item in the population has of being included in the sample. Non-probability sampling is also known by different names such as deliberate sampling, purposive sampling and judgment sampling. In this type of sampling, items for the sample are selected deliberately by the researcher; his choice concerning the items remains supreme. The

questionnaires were distributed purposively to selected employees. They were chosen among others because the response they provide should be very vital and if we use simple random method they might not be among chosen so they selected by stratified sampling. And also additionally, the direct observation was taken by the researcher using checklist (the checklist is included in appendices). The researcher had distributed 120 questionnaires to the selected companies. Questionnaires were distributed to the companies based on the targeted group of employees and purposive sampling. Accordingly 40 questionnaires were distributed to Anbessa, 30 questionnaires were distributed to Sino-Ethiop, 20 questionnaires were distributed to Horizon, and 30 questionnaires were distributed to Belayab. The selection of respondents was conducted within kaizen team in each company.

3.4 Type and Sources of Data

For the purpose of this research quantitative data were collected through questionnaire and also qualitative data were taken through direct observation. To gather the required data, the researcher uses two sources of data: primary and secondary data. The primary data was collected from employees, supervisors and management (Top, Middle, Lower level) of the companies through questionnaires from higher officials and kaizen teams and direct observation of the workplace environment and the entire of the companies physically. For secondary data, the researcher uses various documents like Internal reports, performance reports including reports submitted to Ethiopian kaizen institute, Journal articles, Different books, Working papers, Various websites and Unpublished thesis.

3.5 Data Gathering Tools

The instruments used to gather data was questionnaire, direct observation and document analysis. Questionnaires was developed which was used for kaizen implementation on the basis of basic questions of the study, review of literature, and theories of kaizen as management toolkits. The questionnaires conducted were close-ended and open-ended. In the case of close-ended questionnaires Likert scale data from 1(very high) to 5(very low) based on the questions was used. While open-ended questionnaires used for respondents to explain their feeling and understanding freely as much as possible based on the question raised. And direct observation was followed based on checklist.

3.6 Data Analysis Methods

The researcher was attempted to analyze the collected data by using statistical package for social science (SPSS) and Microsoft Excel. In this process, descriptive statistics such as mean, frequency, and percentage were used. As a tool of analysis, the mean results was 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 the three pillars. It was also used to measure the level of challenges of the each company on implementation of Kaizen. A percentage was used to describe the composition of respondents in terms of their demographic characters.

3.7 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 & Rosemary, 2003).

Table 3.1: Interpreting ALPHA for Likert scale data

Cronbach's α	Internal Consistency
0.9 and above	Excellent
0.8-0.89	Good
0.7-0.79	Acceptable
0.6-0.69	Questionable
0.5-0.59	Poor
Below 0.5	Unacceptable

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

Table 3.2: Reliability test

S/ N	Questionnaires	No. of items	Cronbach's alpha				Interpretation			
			Anbessa	Horizon	Belayab	Sino	Anbessa	Horizon	Belayab	Sino
1	Contribution	9	0.95	0.95	0.97	0.94	Excellent	Excellent	Excellent	Excellent
2	Training & Motivation	7	0.90	0.94	0.96	0.95	Excellent	Excellent	Excellent	Excellent
3	Three pillars	15	0.96	0.97	0.95	0.93	Excellent	Excellent	Excellent	Excellent
4	Challenges	7	0.93	0.97	0.96	0.94	Excellent	Excellent	Excellent	Excellent
Total		38	0.93	0.95	0.96	0.94	Excellent	Excellent	Excellent	Excellent

The Cronbach's alpha test result of the companies is ranges from .90 to .97; which excellent. Further, overall test of each company is excellent, their score is .93, .95, .96 and .94 for Anbessa, Horizon, Belayab and Sino-Ethiop respectively. Thus, the response obtained from respondent through Likert scaling questions is reliable

CHAPTER FOUR

4. RESULTS AND DISCUSSION

This chapter deals with the analysis, interpretation and presentation of data collected from respondents in the form of questionnaire and direct observation conducted. Furthermore, major findings and conclusion of results are presented.

4.1 Response Rate of Questionnaire

The researcher had distributed 120 questionnaires to the selected companies namely; Anbessa Shoe S.C (Anbessa), Sino-Ethiop Associate (Africa) PLC (Sino-Ethiop), Horizon Addis Tyre (Horizon) and Belayab Cable manufacturing (Belayab). Questionnaires were distributed to the companies based on the targeted group of employees and purposive sampling. Accordingly 40 questionnaires were distributed to Anbessa, 30 questionnaires were distributed to Sino-Ethiop, 20 questionnaires were distributed to Horizon, and 30 questionnaires were distributed to Belayab. From these questionnaires for all companies 100 percent were collected, 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.	Anbessa Shoe S.C	40	40	100
2.	Sino-Ethiop	30	30	100
3.	Horizon Addis Tyre	20	20	100
4.	Belayab Cable	30	30	100
Total		120	120	100

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	Anbessa		Horizon		Belayab		Sino-Ethiop		Total	
			No.	%	No.	%	No.	%	No.	%	No.	%
1.	Sex	Male	27	67.50	18	90	25	83.33	21	70	91	75.83
		Female	13	32.5	2	10	5	16.67	9	30	29	24.16
		Total	40	100	20	100	30	100	30	100	120	100
2.	Age	18-25	10	25	0	0	0	0	0	0	10	8.33
		26-30	17	42.5	0	0	0	0	5	16.66	22	18.33
		31-40	13	32.5	10	50	24	80	4	13.33	51	42.5
		41-50	0	0	8	40	6	20	18	60	32	26.67
		Above 50	0	0	2	10	0	0	3	10	5	4.16
		Total	40	100	20	100	30	100	30	100	120	100
3.	Level of Education	Diploma	16	40	0	0	0	0	4	13.33	20	16.67
		Degree	16	40	14	70	16	53.33	21	70	67	55.83
		Masters and above	8	20	6	30	14	46.67	5	16.67	33	27.5
		Total	40	100	20	100	30	100	30	100	120	100
4.	Work Experience at the Company	1-3	14	35	0	0	0	0	0	0	14	11.67
		3-6	18	45	0	0	0	0	0	0	18	15
		6-9	8	20	12	60	14	46.67	5	16.67	39	32.5
		9-12	0	0	6	20	8	26.66	7	23.33	21	17.5
		Above 12	0	0	6	20	8	26.66	18	60	32	26.67
		Total	40	100	20	100	30	100	30	30	120	100

As presented in the table 4.2; total numbers of respondents of the four companies are 120, of which 75.83 percent of respondents are males and the rest 24.16 percent of respondents are females.

Proportionally, the numbers of male respondents in the four companies were 67.50 percent, 70.00 percent, 90.00 percent and 83.33 percent at Anbessa, Sino-Ethiop, Horizon and Belayab respectively. The proportion of females respondents at the four companies were 35.5 percent, 30 percent, 10 percent, and 16.67 percent at Anbessa, Sino-Ethiop, Horizon and Belayab respectively. This implies that the majority of respondents were males.

Concerning respondent's age, majority of respondents of Anbessa, Sino-Ethiop, Horizon and Belayab were ranges from age 26 to 30, 41 to 50, 31 to 40, and 31 to 40 respectively. From the total respondents of the four companies 42.5 percent were aged 31 to 40, 26.67 percent aged 41 to 50, 18.33 percent aged 26 to 30, 8.33 percent aged 18 to 25 and 4.16 percent aged above 50. This implies that the majority group of respondent's age from the four companies 26 to 50 covers around 87.5 percent, which is matured and productive age.

As far as employee's level of education is concerned; majority of respondents of Anbessa, Sino-Ethiop, Horizon and Belayab were first degree holders by 55.83 percent. Masters degree respondents follow by 27.5 percent and diploma respondents were 16.67 percent. Around 83.33 percent of respondents were first degree, masters and above; only 16.67 were diploma holders. It was done purposefully to get proper answers for all questionnaires to achieve the objectives of this study. This implies that respondents have enough knowledge and capable to answer the questions.

Concerning respondents work experience; majority of respondents of Anbessa were 3 to 6 years, Sino-Ethiop were above 12 years, and Horizon and Belayab were 6 to 9 years. From the total respondents of the four companies work experience 32.5 percent were 6 to 9 years, 26.67 percent were above 12 years, 17.5 percent were 9 to 12, 15 percent were 3 to 6 and 11.67 percent were 1 to 3. This implies that majority of respondents have well enough work experience to answer the questionnaires properly.

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) $N / (N-1)$; $N = 5$, $(N-1) = (5-1) = 4$; $4/5 = 0.8$. It is tabulated as follows.

Table 4.3: Interpretation of results for Likert scale data

S/N	Ranges	Values
1.	4.20 - 5.00	Strongly Agree
2.	3.40 - 4.19	Agree
3.	2.60 - 3.39	Neutral
4.	1.80 - 2.59	Disagree
5.	1.00 - 1.79	Strongly disagree

4.4 Perception of respondents on Kaizen contribution

Table 4.4: Perception of respondents on Kaizen contribution

S/N	Variable	Anbessa	Horizon	Belayab	Sino-Ethiop
		Mean	Mean	Mean	Mean
1	A sale is increased.	3.58	4.20	3.63	3.83
2	Costs of processing time reduced.	4.70	4.60	4.47	4.40
3	Defect of raw materials reduced.	4.20	4.60	4.15	4.30
4	Costs related to acquisition of machineries are reduced.	3.95	4.10	4.13	3.80
5	Time wastage related to searching tools is reduced.	4.08	4.80	4.07	4.60
6	Employees' occupational safety increased and clean work environment created.	4.08	4.40	4.53	4.30
7	Employees' participation in continuous improvement increased.	4.08	4.40	4.17	4.00
8	Employees work motivation increased	4.08	4.30	3.80	4.20
9	Employees are work for improvement of their company.	4.05	4.50	3.97	4.10
Average mean		4.09	4.43	4.10	4.17

The mean results of kaizen contribution at Anbessa registered the lower mean of 3.58 for question related to Sales is increased after kaizen implementation, and the higher mean registered is 4.70 regarding Kaizen contribution for Costs of processing time reduced. From the listed questions, respondents strongly agreed on kaizen contributed for Costs of processing time reduced and defect of raw materials reduced. The average of mean result is Agree level 4.09; 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 Horizon registered is 4.10 for question related to kaizen contribution to create Sales is increased and higher mean result registered is 4.80 for kaizen contribution for Time wastage related to searching tools is reduced. All mean results as well as the average mean were strongly agreed level except for question related to kaizen contribution to create sales increased was agree level. Horizon also more 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.

The lower mean result for kaizen contribution at Belayab registered is 3.63 for question related to kaizen contribution in Sales increased and the higher mean result registered is 4.53 for question related to Kaizen contribution on Employees' occupational safety increased and clean work environment created. Average of mean result is 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 mean results of kaizen contribution at Sino-Ethiop registered the lower mean of 3.80 for question related to Costs related to acquisition of machineries are reduced after kaizen implementation, and the higher mean registered is 4.60 regarding Kaizen contribution for time wastage related to searching tools is reduced. From the listed questions, respondents strongly agreed on kaizen contributed for Costs of processing time reduced, Defect of raw materials reduced, Time wastage related to searching tools is reduced and Employees are work for improvement of their company. The average of mean result is 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.

All the four companies' mean and average mean result showed their agreement for benefits of Kaizen implementation item by item and its related benefit differ from company to company. Horizon is the most benefited by implementing kaizen, its average mean result were agreed level; whereas the other three companies were agree level. This implies that the benefits obtained by the four companies by implementing kaizen are satisfactory.

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

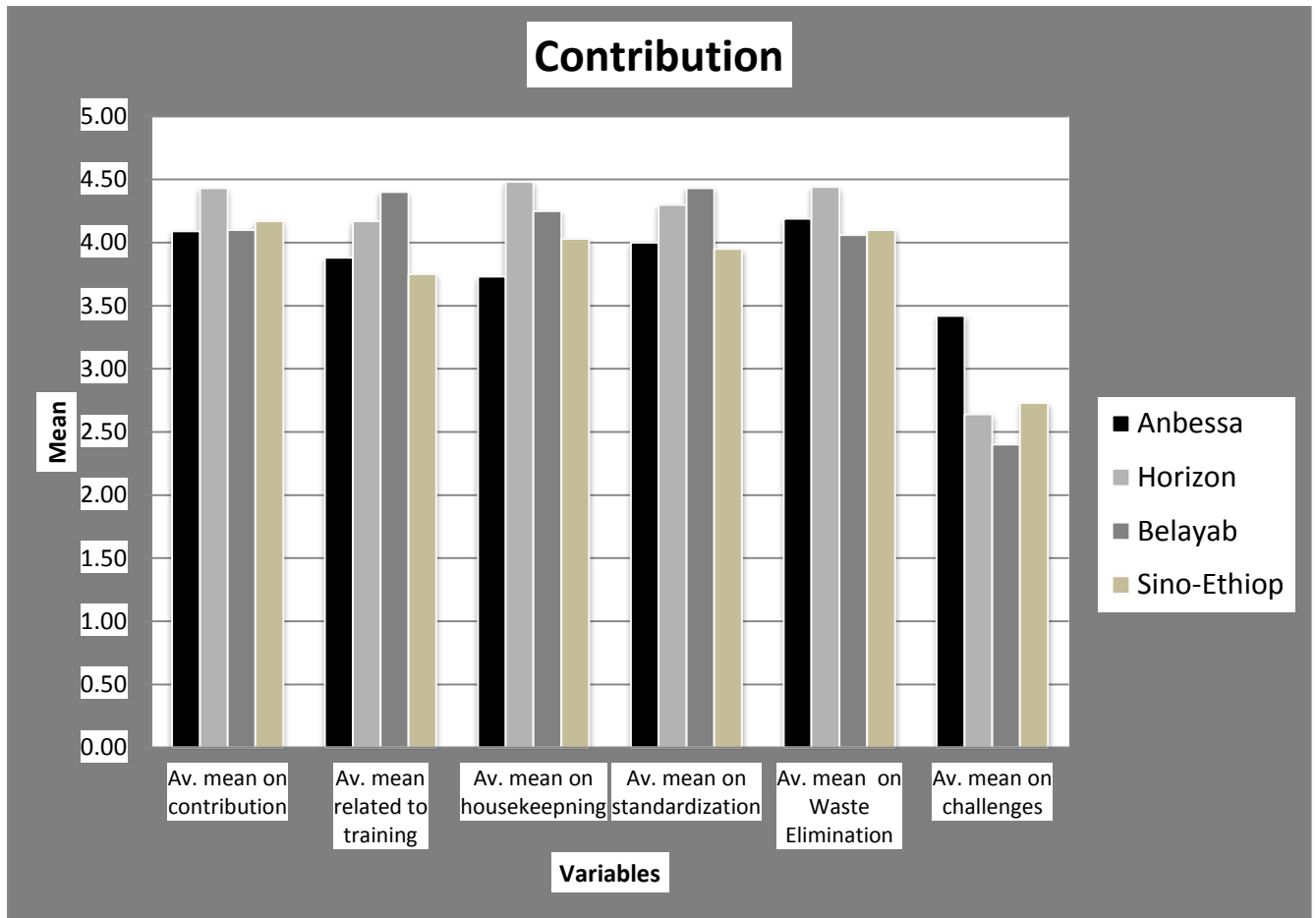


Figure 4.1: Perception respondents for kaizen contribution

4.5 Training and Education related

As per (Khan, 2011) Employees within the kaizen team needs to train 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 four companies is tabulated in the table below:

Table 4.5: Employee’s motivation, training and education

S/ N	Variable	Anbessa	Horizon	Belayab	Sino-Ethio
		Mean	Mean	Mean	Mean
1	There are reward system to motivate employees	3.38	4.10	4.37	3.00
2	Motivation system helps employees to utilize their full effort	3.73	4.20	4.40	3.80
3	Employees are motivated due to the results obtained by kaizen.	3.65	4.30	4.53	3.83
4	Trainings before implementing kaizen are sufficient	4.05	3.70	4.43	3.80
5	Training given by the company helps all employees for proper implementation of kaizen.	4.18	4.50	4.33	4.33
6	Trainings given by the company are understandable to all employees	4.10	4.20	4.60	3.93
7	Up-to-date trainings are given after implementing kaizen	4.10	4.20	4.17	3.57
Average mean		3.88	4.17	4.40	3.75

As we observed from the above table, the lower mean obtained by Anbessa, Horizon, Belayab and Sino-Ethiop regarding employee motivation, training and Education are 3.38 (by reward system to motivate employees), 3.70 (by Trainings before implementing kaizen are sufficient), 4.17 (by Up-to-date trainings are given after implementing kaizen) and 3.00 (by reward system to motivate employees), respectively. Anbessa and Sino-Ethiop are neutral level by mean result of question related reward system to motivate employees. Belayab is the most succeeded company with regard to training and education related; its average mean is strongly agreed level and the average mean of the left three companies are agree level.

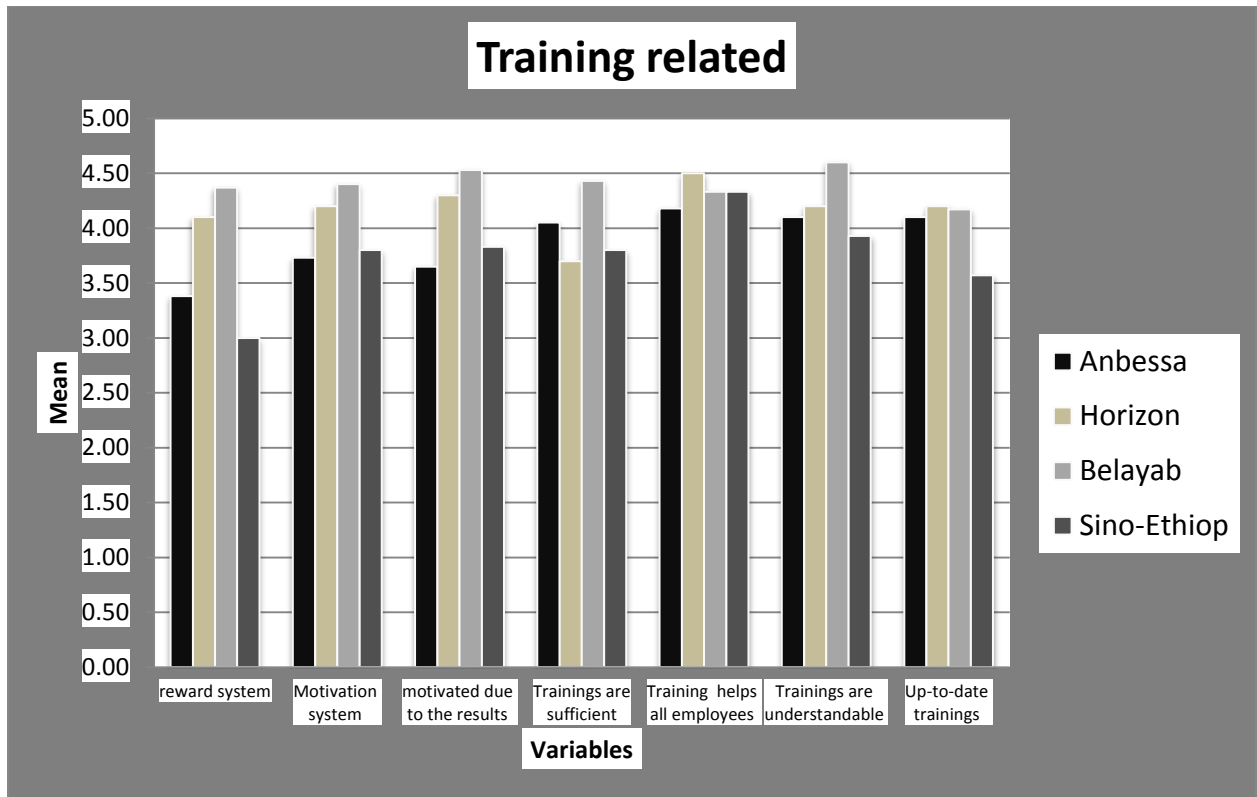


Figure4.2: Perception of respondents training related

4.6 Perception of respondents on three pillars of kaizen

Table 4.6: Perception of respondents on three pillars of kaizen

S/N	Variable	Anbessa	Horizon	Belayab	Sino-Ethio
		Mean	Mean	Mean	Mean
House Keeping (5S)					
1	Sorting	3.43	4.60	4.40	4.10
2	Set in order	3.85	4.70	4.20	4.20
3	Shine	4.10	4.40	4.07	4.17
4	Standardize	3.95	4.30	4.20	4.00
5	Sustain	3.33	4.40	4.40	3.70
Average mean		3.73	4.48	4.25	4.03
Standardization					
1	The company has standard to undertake it's a certain work	3.85	4.20	4.70	4.10
2	There is proper inspection made by the company to assure works are done according to standard	4.05	4.40	4.40	3.83
3	There are improvements on standards set by the company	4.10	4.30	4.20	3.93
Average mean		4.00	4.30	4.43	3.95
Waste elimination					
1	Waste of over production reduced	4.18	4.60	4.27	4.07
2	Waste of inventory level reduced	4.00	4.40	4.33	3.87
3	Waste of waiting without work removed	4.18	4.40	3.67	3.93
4	Waste of unnecessary motions are reduced	4.70	4.50	4.00	4.17
5	Waste of transportation waste are reduced	4.13	4.30	3.83	4.20
6	Waste of production reject reduced	4.08	4.50	4.10	4.13
7	Waste of process time reduced	4.03	4.40	4.20	4.30
Average mean		4.19	4.44	4.06	4.10

Housekeeping (5S)

The average mean results regarding implementation of the Five S, namely Sorting, Set in order, Shine, Standardize and Sustain at Anbessa and Sino-Ethiop are agree level. Whereas, at Horizon and Belayab strongly agree level. According to the mean result shows at Anbessa there is a fear to sustain the housekeeping. When we compare the results of the four companies on 5S, Horizon had exhibited best result on housekeeping (5S).

From direct observation of the researcher at all of the four companies, 5S was system for organized spaces, so work performed efficiently, effectively, and safely. This system focuses on putting everything where it belongs and keep the workplace clean, which makes it easier for people to do their jobs without wasting time or risking injury.

A key part of 5S is that it makes spaces cleaner and therefore easier to navigate. That means people can more easily get their work done. The researcher was observed that Visual communication tools such as labels, floor markings, cabinet and shelf markings, and shadow boards were used in all of the four companies. And also, these tools help to make navigating spaces even simpler and the workspace organized. A work place that uses visual management in this way was often referred to as a visual workplace.

The research finding of all the three companies are inconsistent with finding of Wonji Showa Sugar Factory (Asfaw, 2014), Based on the research, Wonji showa sugar factory had achieved high level of implementation on housekeeping.

Standardization

The mean results of each questions and average mean regarding standardization at Anbessa and Sino-Ethiop shows agree level. Whereas the mean results of each questions and average mean regarding standardization at Horizon and Belayab strongly agree level. It indicates that all the four companies 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. Furthermore, the average mean result registered by Belayab on standardization is the best from the other four companies, especially by having standard to undertake it's a certain work.

Waste elimination

The mean results of each questions and average mean regarding waste elimination at Horizon is strongly Agree level. Its average mean resulted by 4.44.

The mean results for questions regarding waste elimination at Anbessa is Agree level except for question of Waste of unnecessary motions are reduced is strongly agree level by mean of 4.70. Its average mean result by 4.01 is 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, average mean results of questions concerning waste elimination at Belayab and Sino-Ethiop are Agree level by 4.06 and 4.10 respectively. At Belayab better results were obtained by questions concerning to Waste of over production reduced, Waste of inventory level reduced and Waste of process time reduced, which falls under strongly agree level. At Sino-Ethiop better results were obtained by questions concerning to Waste of transportation are reduced and Waste of process time reduced which falls under strongly agree level.

When we compare mean results of each companies regarding waste elimination horizon had obtained best result on elimination of all wastes; namely waste of over production, inventory level, waiting without work, unnecessary motions, transportation, production reject, and process time than the other three companies.

When we summarize the average means, waste elimination result shows moderate level of achievement at Anbessa, Belayab and Sino-Ethiop. And at Horizon waste elimination result shows higher level of achievement.

4.7 Perception of respondents on Challenges of kaizen implementation

S/N	Variable	Anbessa	Horizon	Belayab	Sino-Ethio
		Mean	Mean	Mean	Mean
1	Traditional hierarchical work trends	4.18	3.60	3.50	3.97
2	Lack of management support or leadership	3.66	2.00	2.47	1.53
3	Poor training	3.18	2.00	2.73	2.10
4	Lack of Skilled manpower	2.98	2.30	2.10	2.80
5	Lack of proper kaizen implementation measurement.	3.30	2.70	1.80	2.60
6	Insufficient participation of employees	3.30	3.20	2.07	2.60
7	Misconception about kaizen	3.33	2.70	2.10	3.50
Average mean		3.42	2.64	2.40	2.73

Table 4.7: Challenges of kaizen implementation

Concerning challenges of Kaizen implementation; results of average mean at Anbessa is Agree level slightly by mean of 3.42. At Anbessa agree level results were obtained by questions concerning to Traditional hierarchical work trends and Lack of management support or leadership by mean of 4.18 and 3.66 respectively, whereas the left five questions were neutral level.

Concerning challenges of Kaizen implementation; results of average mean at Horizon is neutral level by mean of 2.64. From questions regarding challenges of Kaizen implementation the Traditional hierarchical work trends mean result is agree level by mean of 3.60 and the questions on Lack of proper kaizen implementation measurement and Misconception about kaizen are neutral level both by mean of 2.70, and the left four questions were disagree level.

Concerning challenges of Kaizen implementation; results of average mean at Belayab is disagree level by mean of 2.40. At Belayab agree level result was obtained only by question concerning to Traditional hierarchical work trend by mean of 3.50; Poor training is neutral by mean of 2.73; and the left five questions were disagree level.

Concerning challenges of Kaizen implementation; results of average mean at Sino-Ethiop is neutral level by mean of 2.73. At Sino-Ethiop agree level results were obtained by questions concerning to Traditional hierarchical work trend and Misconception about kaizen by mean of 3.97 and 3.50

respectively. The questions of concerning to Poor training and Lack of management support or leadership were disagree level by mean of 2.10 and strongly disagree level by mean of 1.53 respectively. And the left three questions were neutral level.

The research findings of kaizen implementation challenges at Anbessa are consistent with (Asfaw, 2014) the finding of Wenji Showa Sugar Factory disclosed that the company had also faced various challenges.

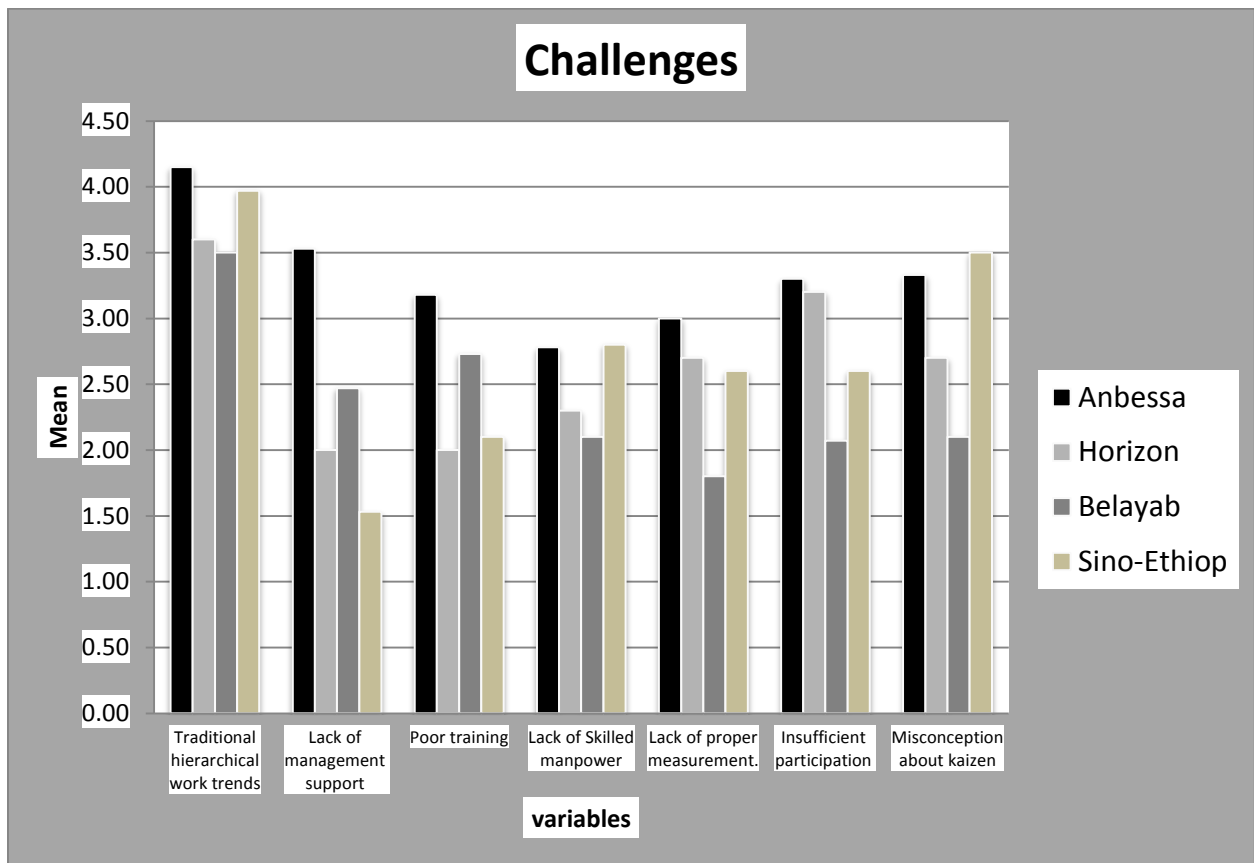


Figure4.3: Perception of respondents for implementation challenges

4.8 Summary of results

The findings on contribution of kaizen implementation by the four companies' verified that the companies have gained positive result by implementing kaizen. Three companies' average mean results are Agree level and Horizon was strongly agreeing level. Thus, the companies were benefited by implementing kaizen. Further, as per internal reports of each companies; the benefits gained 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 four companies' verified that the companies satisfactory applied them. Three companies' average mean results are Agree level and Belayab is strongly agreeing level.

Concerning the Housekeeping (5S), all the four companies' achieved satisfactory level. The average mean results of Horizon and Belayab are strongly Agree level whereas the average mean results of Anbessa and Sino-Ethiop are Agree level. Despite, at Anbessa forwarded their frustrations on sustainability. Some believe that sustainability of results achieved by kaizen implementation including housekeeping becomes reduced from time to time.

From direct observation of the researcher at all of the four companies, 5S was system for organized spaces, so work performed efficiently, effectively, and safely. This system focuses on putting everything where it belongs and keep the workplace clean, which makes it easier for people to do their jobs without wasting time or risking injury.

A key part of 5S is that it makes spaces cleaner and therefore easier to navigate. That means people can more easily get their work done. The researcher was observed that Visual communication tools such as labels, floor markings, cabinet and shelf markings, and shadow boards were used in all of the four companies. And also, these tools help to make navigating spaces even simpler and the workspace organized. A work place that uses visual management in this way was often referred to as a visual workplace.

As per average mean results of the companies, standardization at all the four companies' achieved moderate level. The average mean results of Horizon and Belayab are strongly Agree level whereas the average mean results of Anbessa and Sino-Ethiop are Agree level. Implementation of standardization system at the four companies confirmed the desired point.

Concerning the waste elimination at all the four companies' achieved moderate level. Three companies' average mean results are Agree level and Horizon is strongly agreeing level. Anbessa has best performance on reducing waste of unnecessary motions. Waste elimination at the four companies achieved the desired point.

Finally the research finding shows that all the four companies especially Anbessa faced various challenges on kaizen implementation.

S/N	Variable	Anbessa		Horizon		Belayab		Sino-Ethiop	
		Mean	interpret	Mean	interpret	Mean	interpret	Mean	interpret
1	Average mean result on Kaizen contribution	4.09	Agree	4.43	St. Agree	4.10	Agree	4.17	Agree
2	Average mean result on Motivation, training and education	3.88	Agree	4.17	Agree	4.40	St. Agree	3.75	Agree
Perception of respondents on three pillars of kaizen									
3	Average mean result on housekeeping (Five S)	3.73	Agree	4.48	St. Agree	4.25	St. Agree	4.03	Agree
4	Average mean result on standardization	4.00	Agree	4.30	St. Agree	4.43	St. Agree	3.95	Agree
5	Average mean result on Waste Elimination	4.19	Agree	4.44	St. Agree	4.06	Agree	4.10	Agree
6	Average mean result on challenge of kaizen implementation	3.42	Agree	2.64	Neutral	2.40	Disagree	2.73	Neutral

Table 4.8: Summary of results

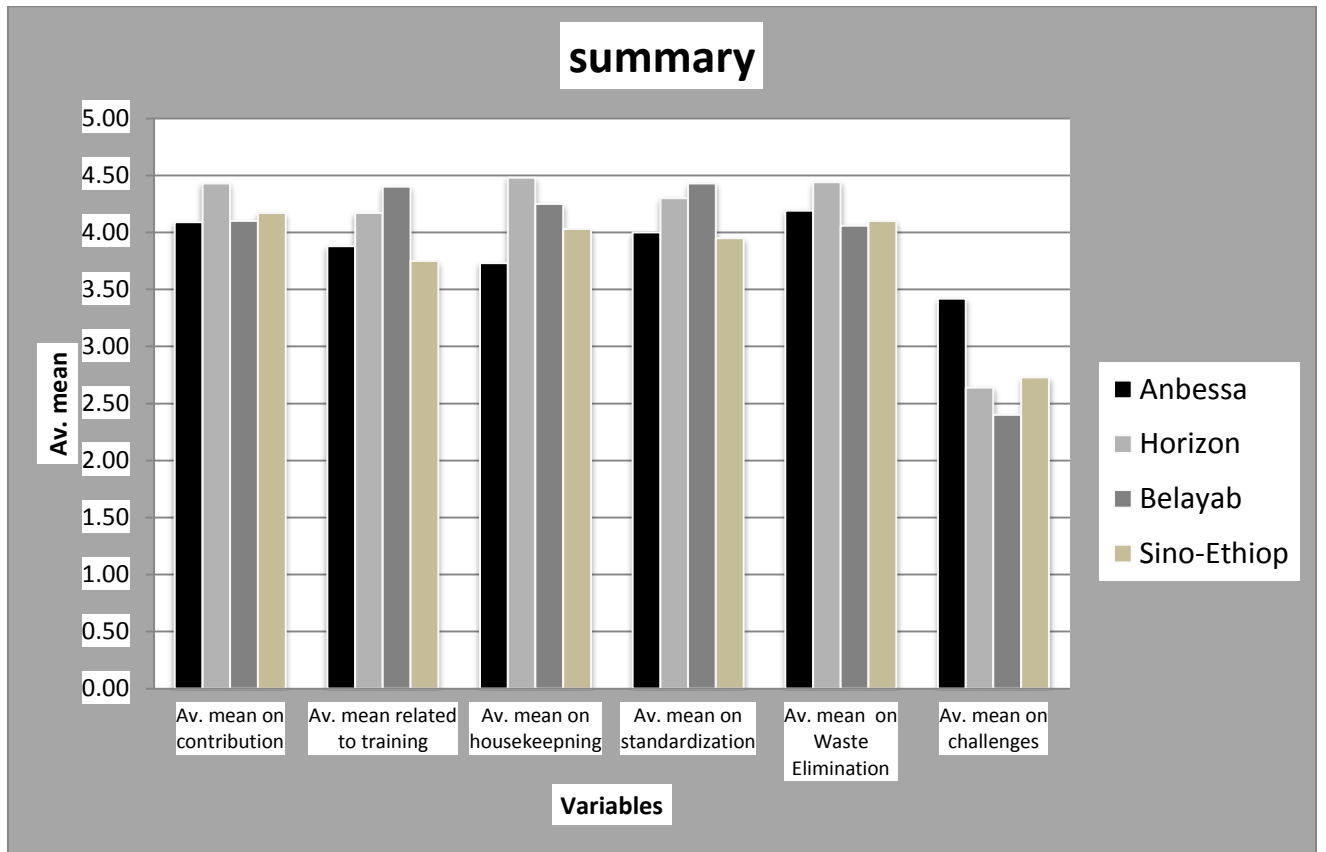


Figure4.4: Summary of results

CHAPTER FIVE

6. SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter provides summary of the major findings, conclusion and recommendations. In addition, limitation of the study and implication for the future study are included.

5.1 Summary of the Major Findings

- All the 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.
- All the companies are succeeded with regard to training and education related kaizen. However, there are differences in level of achievement. Anbessa and Sino-Ethiop was neutral by mean result of question related reward system to motivate employees. Belayab is the most succeeded company with regard to training and education related to kaizen; its average mean is strongly agreed level and the average mean of the left three companies namely Anbessa, Horizon and Sino-Ethiop are agree level.
- All the four companies' achievement level on implementation of five 5S is moderate level. According to the mean result shows at Anbessa there is a fear to sustain the housekeeping. When we compare the results of the four companies on 5S, Horizon had exhibited best result on housekeeping (5S).
- From direct observation of the researcher at all of the four companies, 5S was system for organized spaces, so work performed efficiently, effectively, and safely. The researcher was observed that Visual communication tools such as labels, floor markings, cabinet and shelf markings, and shadow boards were used in all of the four companies. This system focuses on putting everything where it belongs and keep the workplace clean, which makes it easier for people to do their jobs without wasting time or risking injury.
- All the four companies have achieved implementation of standardization 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. Furthermore, the average mean result registered by Belayab on standardization is the best from the other four companies, especially by having standard to undertake it's a certain work.

- All the four companies have achieved the elimination of wastes. When we summarize the average means, waste elimination result shows moderate level of achievement at Anbessa, Belayab and Sino-Ethiop. And at Horizon waste elimination result shows highest level of achievement.
- All the four companies have been challenged on traditional hierarchical work trends. Based on mean result of each companies; traditional hierarchical work trends and lack of management support or leadership are the big challenges of Anbessa than the three companies, while traditional hierarchical work trends and Misconception about kaizen are big challenges of Sino-Ethiop.
- When we measure the degree of overall kaizen implementation and challenges, Horizon exhibit better performance on kaizen implementation and face challenges less. Belayab, Sino-Ethiop and Anbessa follows. Anbessa faced more challenges than the others.

5.2 Conclusion

The findings on contribution of kaizen implementation by the four companies' verified that the companies have gained benefits although the degree of their benefit is differing 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 all companies are agree level, but the average mean results of the Belayab strongly agree level. The worst mean result exhibited by Anbessa and Sino-Ethiop was on providing of reward system to motivate employees.

With regard to 5S, Standardization and waste elimination at all the four companies exhibit the desired level of implementation. Anbessa Company forwarded their hesitation on sustainability of housekeeping. Horizon had exhibited best result on housekeeping (5S). All the four companies 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.

Furthermore, the average mean result registered by Belayab on standardization is the best from the other four companies, especially by having standard to undertake it's a certain work. Waste elimination result shows moderate level of achievement at Anbessa, Belayab and Sino-Ethiop. And at horizon waste elimination result shows higher level of achievement.

As per the results obtained from average mean on challenges of Kaizen implementation; Anbessa faces challenges on implementation of kaizen due to traditional hierarchal work trends and lack of management support. All the four companies have been challenged on traditional hierarchical work trends.

The research finding found that Kaizen training, motivation and education and Kaizen three pillars are implemented on the four manufacturing companies' moderate and satisfactory level. Further, all the four companies have gained various benefits including increased sales volume, reduced costs, higher quality, increased productivity, greater employee satisfaction and a safer work environment, although the degree of their benefit is differing from company to company. And the companies were faced challenges of kaizen implementation on weak work culture or traditional work trends, lack of management support and misconception about kaizen especially concerning Housekeeping at Anbessa Shoe S.C there is a fear to sustain.

5.3 Limitation of the Study

Due to confidentiality of financial statements of all the four companies; the overall impact of Kaizen implementation on the companies could not fully presented and verified by financial statements of each Companies. And also capturing photograph to take picture of companies' housekeeping was not allowed.

5.4 Recommendations

Since harmony of management and employees is highly required to successfully implement Kaizen, all the four companies shall improve their leadership style, for example they can change their leadership style to servant hood leadership style.

All the four companies shall focus on sustainability of 5S; especially Anbessa should provide great emphasis on it; because Kaizen is continuous improvement.

All the four companies especially Anbessa and Sino-Ethiop shall focus on reward system to motivate employees. It will enhance the level of employees' motivation. Further, reward inspiration motivation programs like prizing of the best result achiever employees should be rewarded. All the four companies should focus on changing of traditional hierarchical work trends or weak culture of work.

5.5 Implications for the 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 traditional hierarchical work trends or weak culture of work.

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APPENDICES

A. QUESTIONNAIRES

Dear respondents,

This questionnaire is designed to collect data about **Practices and Challenges of KAIZEN Implementation** in selected Manufacturing Companies of Ethiopia. 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 of Quality and Productivity Management 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. Diplomas/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: 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						
6.	The company has standard to undertake it's a certain work.					
7.	There is proper inspection made by the company to assure works are done according to standard.					
8.	There are improvements on standards set by the company.					
Waste elimination						
9.	Waste of over production reduced					
10	Waste of inventory level reduced					
11	Waste of waiting without work removed					
12	Waste of unnecessary motions are reduced					
13	Waste of transportation waste are reduced					
14	Waste of production reject reduced					
15	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

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I appreciate your harmony again!

B. CHECKLIST FOR DIRECT OBSERVATION

S/N	Variables	Remark
1.	Cleaner and organized workplace	
2.	Safer floor and office operations	
3.	Improved employee's morale	
4.	Eliminated waste caused by disorder	
5.	No delays	