

**Assess the Effectiveness and Challenge of Kaizen  
Implementation  
(Case of Entoto Polytechnic College)**

*A Thesis Submitted to the School of Graduate Studies of Jimma University in  
Partial Fulfillment of the Requirements for the Award of the Degree of Master of  
Business Administration (MBA)*

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# Assess the effectiveness and challenges of kaizen implementation.

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## Abstract

*Kaizen was introduced to Ethiopia in 2009 with JICAs technical assistance. The success of the first pilot project confirmed the transferability and effectiveness of Kaizen. The second project was aimed at training Ethiopian Kaizen consultants in order to build the capacity of the institute. In this project Technical and Vocational Education and Training (TVET) Institutes received training. Entoto polytechnic college was one of them. Kaizen is a continuous improvement of operation by involving everyone. Commitment, genuine participation and motivation are the critical factors of kaizen implementation. The purpose of this study was to assess the effectiveness and challenge of kaizen implementation in Entoto polytechnic college. The five S's were deployed as a beginning of kaizen implementation in the college. To address the objectives, case study research design was employed, and both primary and secondary data collection methods were used. Data collected from 188 respondents through questionnaires and structured interviews. Simple random Sampling was employed to select the sample. The quantitative data were analyzed through descriptive statistics with SPSS Version 20. The findings of the research showed that there was moderately implemented kaizen strategy, there were success stories, but there had been challenges which emanated from various sources, their lack of commitment of management and employees, gaps in communication, and gaps in training and motivation. The majority of the respondents elicited that they did not take continues training regarding the philosophy, and methodologies of kaizen, there were no adequate administrative supports, feedbacks and encouragement for smooth operation of Kaizen. Management commitment in building and sustaining a continuous improvement culture, clear communication channel and equitable motivational schemes including empowerment has a great impact on the effectiveness of kaizen practices. Engaging top management in owning kaizen and delivering training on a continuous basis for all members of the college besides to working together with institutions specialized in kaizen plays a great role in bringing the aspired change from kaizen.*

**Key Words:** *Kaizen, Continuous Improvement, Implementation, effectiveness, challenge*

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## **Declaration**

I declare that the research Report entitled “Assess the Effectiveness and Challenge of Kaizen Implementation Case of Entoto Polytechnic College” **submitted** to Research and Postgraduate Studies’ Office of Business and Economics College is original and it has not been submitted previously in part or full to any university.

\_\_\_\_\_  
Date: \_\_\_\_\_

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## Certificate

We certify that the Research Report entitled

“Assess the Effectiveness and Challenge of Kaizen Implementation Case of Entoto Polytechnic College” was done by Miss Samerawit Fekadu for the partial fulfilment of Master’s Degree under our Supervision.

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(Main Advisor)

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### Acronyms

<b>EKI</b> .....	Ethiopian Kaizen Institute
<b>JICA</b> .....	Japan International Cooperation Agency
<b>JIT</b> .....	Just in time
<b>KAIZEN</b> ....	Kanban, Approach, Improvement, Zero Defects, Effectiveness, Networking
<b>LM</b> .....	Lean Manufacturing
<b>PDCA</b> .....	Plan, Do, Check Act
<b>QCC</b> .....	Quality Control Cycle
<b>SPSS</b> .....	Statistical Package for the Social Sciences
<b>TPM</b> .....	Total Production Management
<b>TQC</b> .....	Total Quality Control
<b>TQM</b> .....	Total Quality Management
<b>5S</b> .....	Five (Sort, Set in Order, Shine, Standardize, and Sustain)

## CHAPTER ONE

### 1. INTRODUCTION

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*This chapter presents an overview of the entire study. It includes background of the study, statement of the problem, objective of the study, research questions, and significance of the study, scope of the study and organization of the research.*

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#### 1.1 Background of the study

Increasing competition in the industrial world requires the company to make continuous improvement about the quality of product and services offered. The kaizen method has been established as an outcome of various activities undertaken for improving the productivity and quality of Japanese products after mid-1940s, as Japanese manufactures were urgently trying to catch up with the standards of American and European manufacturers. Initially, efforts were made to learn from western management systems, particularly the statistical quality control methods. Introduction of an annual award for quality management, the Deming Prize, has contributed to awareness among enterprises and provided opportunities to learn from best practices. Through this process, the western management strategy was combined with Japanese management methodologies and gradually developed into the kaizen system.

In Japanese, kaizen means continuous improvement. The word implies improvement that involves everyone- both managers and workers- and entails relatively little expense. (Imai, 1997) Further explained kaizen as Japanese quality approach which is deeply ingrained in the minds of both managers and workers that they often do not even realize that they are thinking Kaizen. Kaizen is more than just a means of improvement because it represents the daily struggles occurring in the workplace and the manner in which these struggles are overcome. Kaizen can be applied to any area in need of improvement. Although the philosophy of Kaizen is mostly applicable manufacturing areas, currently most service sectors are engaged in deploying kaizen as their leading quality management tool. Applicability areas of kaizen are not limited to manufacturing rather it can be applied in different sectors of the economy that require continuous improvement in their activities.

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The concept of continuous improvement of quality and productivity is ideal in the absence of strain work, fair salary, proper social condition of employees, organization wide group activity based on Kaizen mindset and self-disciplined employees. In spite of these and other challenges, many organizations are becoming beneficiary by implementing Kaizen management technique. Accordingly, scholars in the area have been arguing that proper understanding of policy instruments, methods, culture, principles, and application techniques of the kaizen philosophy would be one essential step towards addressing and solving the currently existing problems and challenges. As mentioned above kaizen is practicing in Ethiopia for decade. Research shows that there are challenges during launching time for the effective implementation of kaizen such as team work was leading in influence, followed by training, followed by management support and last was education level of workers. As kaizen is continues improvement it will take some time to see the effectiveness.

The background of kaizen in Ethiopia trace back to the agreement between Ethiopia and Japan in 2009 for the pilot project of 30 manufacturing industries with technical assistance from JICA(Japan International Cooperation Agency). After the effectiveness of the pilot project on those selected manufacturing industries, for further transfer and implementation of the philosophy Kaizen Institute of Ethiopia (EKI) is established by regulation issued by council of ministers proclamation number 256/2004 Ethiopian Calendar (Kaizen, 2013). 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.

Entoto polytechnic collage started to implement kaizen as continues improvement mechanism to excel its service provisioning capacity than it was before. As for implementing kaizen overall the college, Entoto polytechnic introduced of 5S as a primary activity towards its quality improvement strategy. Thus, the purpose of this study is to assess the level of kaizen practices and challenges

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the college is facing in achieving its objectives from kaizen implementation. Based on the assessments, the researcher forwarded possible recommendations that will contribute for the proper implementation of kaizen.

### **1.2 Background of the company**

The present Entoto polytechnic collage was established in 1925. The provisions of education serve as primary school gradually improve the provision in to secondary education. Since its foundation until 1974, it was known by the name of the then Emperor Haileselesie I of Ethiopia - ‘Teferi Mekonen’. When the military Government of Ethiopia came into power, its name was changed to Entoto Comprehensive Secondary School in 1974. In 1994, the School officially reformulated its institutional shape and content. Then, the Entoto School decided to change its name in to Entoto Technical Vocational Education and Training Centre which officially authorized it to offer only Training on Skills and Crafts. In 1996, it upgraded the provision of the TVET to Diploma Program and it has been offering both academic and vocational education since. In 2000, it however changed its name to Entoto TVET College. The new reform of the TVET Strategy in the country was also amended in 2011. Thus, the previous name of the College was changed in to Entoto TVET Cluster College... Currently the college named entoto polytechnic college; The College was legally established according to Proclamation No. 22/1999 published in the Negarit Gazette. Entoto polytechnic College is one of the known and giant public college found in Addis Ababa. It is located near Addis Ababa University around “Sidist” kilo. It is under Gulelie Sub-city Administration near Meskayazunan Medehanialem’ Church For this reason, the college has passed long history of educating and training students for more than seventy seven Years.

According to the Entoto polytechnic College, there are 245 teachers, and 134 administrative workers which made 379 employees. Moreover, the College has 23 administrative staff members who were working on a contract basis. In general, the College has a total of 402 employees. As a vocational training center, the trainers offer both formal and non-formal trainings. In this Program, the College provides the trainings to a total of 2110 and 1018 trainees in Formal and Non-formal Program respectively. In terms of their gender composition, 1324 were female and 786 were male trainees respectively.

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## 1.3 Statement of the problem

Kaizen is a management philosophy having its own systems, methods, procedures and problem solving tools. Kaizen is more to do with a philosophy and daily practices rather than techniques. The beauty of kaizen is that it can realize productivity improvements with little additional investments. Simplicity and cost effectiveness are the major reasons why kaizen is well appreciated globally. However, there are a few challenges in implementing kaizen in Ethiopia. In countries which have a socialistic nature like Ethiopia, power may be very much concentrated in the hands of top managers, whereas the basic concept of kaizen is empowering the workers in gemba (workplace). It may be a challenge for managers to change their attitude and trust the workers in gemba (Seid, 2012)

So far, there have been limited and inconclusive studies conducted on the implementation of Kaizen in organizations at different levels in Ethiopia. (Seid, 2012) For example, conducted a quantitative study on the role of the Ethiopian Government in implementing Kaizen as a modern management tool for quality and productivity at Kadisco Chemical Industry in Addis Ababa. The findings of this study indicated that the implementation of the Kaizen policy was found to increase labor productivity by reducing, on average of 50%, time wastage for searching tools; improved a defect ratio which ranged from 50% to 70%; and improved lead time in the range of 16% to 90%. The researcher thus concludes that the implementation of Kaizen at Kadisco Industry has brought those benefits.

As noted in (Asayehegn D. , 2013), based on the three pilot companies (Mesfin Industrial Engineering PLC, Almeda Textile Factory PLC., and Sheba Leather and Tanning Industry PLC), the study found that the employees didn't have the full capacity to accept the kaizen management system. If they had for example, by forming a kaizen cross functional teamwork approach, workers could have been empowered to challenge the status quo, gathering the most conspicuous internal and external factors that could be become part of the work ethics necessary for continuous improvement of productivity. Instead, it was found that some of the executive managers were themselves not committed to the kaizen teamwork because they didn't usually participate nor did they allow the shop floor workers or operators to participate in team group work. This was due to several reasons (such as the absence of good attitude toward implementation and the owners of the

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Enterprises lack awareness of Kaizen implementation. In addition, the capacity of the implementers (both managers and experts) has not been good; there was material and financial constraints and the executives' and the implementers' poor capacity to apply the proper policy and strategy in context sensitive approach.

The researcher was assess variables listed below while conducting the study factors contributing to the successful implementation of Kaizen and its challenge. Such as communication, commitment, clear corporate strategy, employee's empowerment, training program, Culture and positive mindset were found to contribute to the successful implementation of Kaizen. The review also found that resistance to change, failure to motivate employees, lack of understanding on companies' strategic path and difficulties in managing continuous improvement itself formed some of the challenges in implementing Kaizen.

Hence, this study was conducted with initiation of identifying and assessing the challenges during kaizen implementation and also with intention to investigate the actual practice of the college and to forward the recommendation to align it with acceptable standards.

### **1.4 Basic research questions**

1. How is kaizen philosophy (management technique) been implemented?
2. What are the challenges encountered during kaizen program implementation?
3. What technical system (hard aspect) outcomes are achieved through the implementation of kaizen?
4. What are the perception & attitude of employees in kaizen program implementation?
5. What are the measures taken to overcome the challenges faced in kaizen implementation?
6. How is the level of employee involvement and participation in the implementation of kaizen?

### **1.5 Objectives of the study**

#### **1.5.1 General objective**

The major objective of the study was to assess the effectiveness and challenges of Kaizen implementation in Entoto polytechnic College.



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### 1.5.2 Specific objectives

- To examine kaizen philosophy (management technique) been implemented effectively.
- To identify the challenges encountered during kaizen program implementation.
- To determine the outcomes achieved through the implementation of kaizen.
- To identify the perception & attitude of employees in kaizen program implementation.
- To find out the measures taken to overcome the challenges faced in kaizen implementation.

### 1.6 Significance of the study

Though the implementation of kaizen, there are progresses and changes observed in areas where it is applied as a management philosophy.

**So this study is:**

- ❖ Helpful to identifying the most important challenges and presenting possible solutions in deploying as well as sustaining kaizen culture in Entoto polytechnic College.
- ❖ Other organizations can take the study as a springboard to customize for their own scenario and improve performance.
- ❖ Furthermore, the research will be used as a cornerstone for those concerned bodies that have interest to study on the area. Results of the will be important inputs for further research to be done on the area, to business policy makers, academicians' practitioners and students.

### 1.7 Scope of the study

Though quite a number of organizations are known to have implemented or have started to implement kaizen, the researcher is decide to study only one organization – Entoto polytechnic College of effectiveness and challenge in kaizen implementation which, the researcher believes, can reflect the cases of other organizations in similar socio-cultural environment. The study area emphasized on: level of awareness and training on kaizen methodologies, top management commitment to the kaizen culture, companywide participation, motivation and empowerment aspects, communication as well as corporate culture and positive mindset.

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## 1.8 Operational Definitions of Key Terms

**Kaizen:** is a Japanese word that loosely translates to ‘change for the good.’ So, kaizen simply means to make improvements through long process. Forms of Kaizen a week-long Kaizen event and sustained forever. Also known as Kaizen blitz, rapid improvement process, or continuous improvement workshop. This is what people traditionally think of when they hear the term Kaizen (Imai, 1986)

**Implementation:** is the carrying out, execution, or practice of a plan, a method, or any design for doing something. As such, implementation is the action that must follow any preliminary thinking in order for something to actually happen

**5S:** The 5S is the acronym of five Japanese words which stands for seiri (organization), seiton (neatness), seiso (cleanliness), seiketsu (standardization) and shitsuke (discipline) (Katsuki.et.al, 2008).

**Waste:** a wide range of non-value adding activities

**Empowerment:** environment in which people have the ability, the confidence, and the commitment to take the responsibility and ownership

**Attitude:** a way of thinking either positive or hostility behaviors over what somebody react on it or appraisal of impression in one’s mind by making.

## 1.9 Organization of the study

This research is organized into five Chapters. Chapter one which is the introduction to the study includes background to the study, statement of the problem, includes rational of the study description and research questions, objectives of the study, significant of the study, operational definition of terms used in the study, scope of the study, limitations of the study, and the organization of the thesis.

Chapter two is presents on review of related literature enclosed in Kaizen. It also dwells on both models used to implement Kaizen, conceptual/theoretical literature elsewhere in the world in the light of the objectives and the nature of variables considered in the study. The third chapter describes the research design and methodology, target population and sampling, data collection instruments, methods of data analysis an ethical concerns considered in the study. Fourth chapter present both quantitative and qualitative data, their analysis, findings and interpretation. Chapter five finally puts together summary of major findings of the study, draws conclusions from those

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findings which are substantially supported by empirical evidence and then forwards plausible recommendations for concerned body's, including suggestions for further study.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

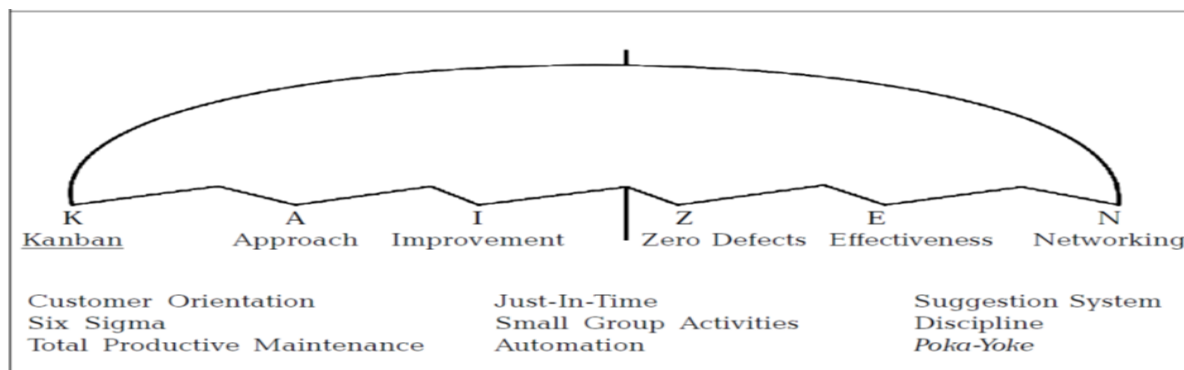
#### 2 INTRODUCTION

*This literature review provides a background to the study by analyzing and evaluating previous research undertaken within the field. It provides an insight into the Concept of Kaizen as an approach to continuous improvement with illustrations on Kaizen toolbox and the implementation strategies and further elaborates the Practical Implementation Challenges in the organization. The Conceptual Framework is also presented in the last section.*

#### 2.1 Theoretical Literature

##### 2.1.1 Definition of Kaizen

Kaizen is a Japanese word that has become common in many companies. The word indicates a process of continuous improvement in the standard way of work. It is a compound word involving two concepts: Kai (change) and Zen (for the better). The term comes from Gemba Kaizen meaning ‘Continuous Improvement’ (CI). Continuous Improvement is one of the core strategies for excellence in production and service delivery, and is considered vital in today’s competitive environment. It calls for endless effort for improvement involving everyone in the organization. Created based on the evolution of the quality concept and in the favorable context of the appearance and development of organizational culture, national culture and intercultural management concept. Broadly defined, Kaizen is a strategy to include concepts, systems and tools within the bigger picture of leadership involving people and culture, all driven by the customer. Kaizen forms an umbrella that covers many techniques as shown in the Figure 2-1.



**Figure 2-1** kaizen umbrella

Source: Imai, 1986, p.4

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### 2.1.2 The Kaizen Philosophy

Improvement has become an integral part of theories and models of change, such as Structure Theory (Pettigrew, 1990), ideal types of change and cycles of organizational changes within revolutionary, piecemeal, focused, isolated and incremental changes. (Imai, 1986) Introduced kaizen into the Western world when outlined its core values and principles in relation to other concepts and the practices involving the improvement process in organizations.

The Kaizen philosophy gained recognition and importance when it was treated as an overarching concept for Total Quality Management (TQM) (Imai, 1986); Tanner and Roncarti, 1994; Elbo, 2000), Total Quality Control (TQC) or Company Wide Quality Control (CWQC) citing practices such as Toyota Production Systems (TPS) and Just in time (JIT) Response systems aimed at satisfying customer expectations regarding quality, cost, delivery and service.

With the focus on improvement, the Kaizen philosophy reached notoriety in organizational development and change processes and has been explained as the “missing link” in Western Business Models and one of the reasons why Western firms have not fully benefited from Japanese management concepts. As kaizen implies change and become good, after engage in kaizen, therefore, is expected to go beyond one’s contracted role(s) to continually identify and develop new or improved processes to achieve outcomes that contribute to better realization of organizational goals. Kaizen can be understood as having a spirit of improvement founded on a spirit of cooperation of the people, suggesting the importance of teams as a fundamental design in this approach.

Kaizen philosophy, however, includes the concept of kaizen (Continuous Improvement) and Kairyo (Process Improvement). (Imai, 1986) Further proposes that the kaizen philosophy embraces main principles;

#### **Processes must evolve by gradual improvement rather than radical changes**

In practice, Kaizen can be implemented by improving every aspect of a process in a step by step approach, while gradually developing employee skills through training education and increased involvement resulting in quality improvement. With quality improvement, employees meet together to discuss the current operations of the company. They decide what things can be changed that will improve the quality of the company and of the products.

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### **Human resources are the most important company asset**

Kaizen must be practiced in tandem with "Respect for People" not resulting in outcomes such as layoffs. Kaizen has become successful with many manufacturing companies because the employees are involved. They feel that their opinion is important and this boosts the employee morale. Keeping the employees happy will cause them to be more productive and satisfied with their jobs.

### **Teamwork**

One of the biggest principles of the kaizen approach is the ability to work in teams. Each department is considered a team and they will be responsible for making small changes that impact the organization. All employees from top manager to front line workers should share common values, business objectives, and information. And, should fulfill their respective role properly, enhancing their capabilities through exercising autonomy and creativity. The teams will then report to their manager. The manager takes this information to management and the entire process of kaizen is evaluated.

### **Discipline**

In order for kaizen to be effective, discipline is necessary. Management as well as workers needs to believe in the Kaizen idea and strive toward obtaining the small goals in order to reach overall success. A strong commitment to discipline and to the kaizen method will prove success for a company.

### **Continuous improvement**

Improvement must be based on statistical or quantitative evaluation of process performance. The small improvements will lead to bigger improvements throughout the entire company. This is why kaizen is called a "continuous process improvement" system or a "continual improvement method." Even with the changes, there are still small things employees can do to change the way they work. There are simple things you can do to help your employees work faster and become more efficient. All employees should have firm belief that the work place must nurture a desire for continuous improvement Kaizen demands product or service quality is improved and is monitored on a continuous basis.

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### 2.1.3 The Three Pillars of Kaizen

According to (Imai, 1986), kaizen management philosophies and practices, the three pillars are summarized as follows: 1) housekeeping, 2) waste elimination & 3) standardization and as he stated as, the management and employees must work together to fulfill the requirements for each category. To be ensured success on activities on those three pillars three factors have also to be taken account. Those are: Visual management, the role of the supervisor, and the importance of training and creating a learning organization.

#### 2.1.3.1 Housekeeping / 5s

Housekeeping is a process of managing the work place, known as “Gemba” in Japanese, for improvement purposes. Other writer also indicates that (Imai, 1997) introduced the word “Gemba”, which means “real place”, where value is added to the products or services before passing them to next process where they are formed. So the idea of “the right things to the right place” is the requirement of Gemba in the learning department of the colleges after finishing the training sessions.

For proper housekeeping a valuable tool or methodology is used. The term “Five S” is derived from the first letters of Japanese words referred to five practices leading to a clean and manageable work area: seiri, seiton, seiso, seiketsu and shitsuke. The English words equivalents of the 5S’s are sorting, set in order, Shine, Standardization and sustain (Imai, 1986) (Imai, 1997)

Other writer like (Foss, 2004) 5s is a philosophy and checklist for good housekeeping to achieve greater order, efficiency and discipline in the workplace. Thus applying 5s in the learning department are important for the trainees, trainers and the college’s community to use time, energy and material effectively. Additionally the training system will be facilitated in smooth and attractive way.

(Imai, 1986) Advised that 5S implementation means applying the following activities in the workshop: Sorting, Set in order, Shine, Standardization and sustain.

**Sorting:** - it is a process that involves selecting what you need to complete the job and removing everything else from your work area. It focuses on removing all unnecessary items from the workplace. Thus applying it workplaces will increase and increase financial income by sold the unwanted material.

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**Set in order:** - Straightening specifically customizes your workstation and surrounding area to meet your work area needs. Arrange remaining items so they are easy to select, use, and return to their proper location. Hence it helps to use time and material effectively and efficiently in proper ways. It focuses on efficient storage and location methods. In simplest terms “a place for everything and everything in its place”.

**Shine:** - Its Emphasis is on the removal of dust, dirt, and grime. It focuses on cleaning up the place now that all the disorder and trash has been removed. Obviously one benefit of this step is to make the workplace cleaner and brighter where everyone will enjoy working.

**Standardized:** - Standardizing creates a work area free of checklists; if appropriate standards are put in place it will be easier to maintain and continue improving. By implementing this we make sure that the first three steps are maintained.

**Sustaining** is the end result of how well we have performed the previous four S's. In the Sustainment stage, think of ways to eliminate effort in maintaining an area. It is by far the most difficult where you need to make it habit to properly maintain the new processes.



Benefits of applying 5s in any organization to the employees advised by (ImaI, 1997)are: Creates cleanliness, sanitary, pleasant, and safe working environments; it refreshes work place “Gemba” and greatly improves employee morale and motivation; it eliminates various kinds of waste by minimizing the need to search for tools, making the operators' jobs easier, reducing physically exhausting work, and freeing up space; it creates a sense of belonging and love for the place of work for the employees. It needs everyone to maintain 5S guidelines. To maintain DISCIPLINE, we need to practice and repeat until it becomes a way of life. Discipline means making a steady habit of properly maintaining correct procedure.

**Figure 2-2** 5`scampaign

Time and effort involved in establishing proper arrangement and orderliness will be in hopeless if we do not have discipline to maintain it. If we do not do 5S, we can't do any other work efficiently. They are features which are common to all places and are the indicators of how well an



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organization is functioning. Thus kaizen involves setting standards and then continually improving those standards. To support the higher standards kaizen also involves providing the training, materials and supervision that is needed for employees to achieve the higher standards and maintain their ability to meet those standards on an on-going basis. The 5S approach is, thus, a step-by-step method which is responsible for identifying items not needed (idle machines, parts not needed, etc.) eliminate these, arrange the rest in order, schedule and carry out cleaning of the workplace and keep on the improvement action and make it your habit.

### **2.1.3.2 Waste (Muda) Elimination**

The Japanese word "Muda" means waste or any non-value-adding action. According to (Institute, 2011), the so-called "seven deadly wastes" are classified as: "Muda of overproduction, 'Muda' of inventory (Unnecessary stock), 'Muda' of waiting, 'Muda' in transportation, 'Muda' of defective items, 'Muda' of motion and 'Muda' in processing".

Therefore, a combination of these wastes, if they are not identified early and got rid of, will lead organizations to deterioration in performance and ultimately to lower profitability. Each waste has its own causes and results in negative outcomes.

- 1) **Over Production**:-Producing items for which there are no orders, which generates such wastes as overstaffing and storage and transportation costs because of excess inventory.
- 2) **Excessive Inventory**:-Excess raw material, work-in-process, or finished goods causing longer lead times, obsolescence, damaged goods, transportation and storage costs, and delay. Also, extra inventory hides problems such as production imbalance, late deliveries from suppliers, defects, equipment downtime, and long setup times.
- 3) **Waiting**:-Workers merely serving to watch an automated machine or having to stand around waiting for the next processing step, tool, supply, part, etc., or just plain having no work because of stock outs, lot processing delays, equipment downtime, and capacity bottlenecks.
- 4) **Motion**:-Any wasted motion employees have to perform during the course of their work, such as looking for, reaching for, or stacking parts, tools, etc. Also, walking is waste.
- 5) **Transportation**:-Carrying work in process long distances, creating inefficient transport, or moving materials, parts, or finished goods into or out of storage or between processes.
- 6) **Rework/defects**:-Production of defective parts or correction. Repair or rework, scrap, replacement production, and inspection mean wasteful handling, time, and effort.

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7) **Over Processing**:-Taking unneeded steps to process the parts. Inefficiently processing due to poor tool and product design, causing unnecessary motion and

### 2.1.3.3 Standardization

Where there are no standards, no improvement can be realized. Standards are set and the performance of machines, employees or processes are measured against these standards. Standardization is one of the most important pillars of Kaizen. It is also "one important pillar of TQM". (Imai, 1986)"Standards require constant revision and upgrading". By frequently reviewing standards and taking actions organizations can attain dramatic improvements. This involves data collection, data analysis and encouraging teams to carry out problem - solving tasks. For organizations to survive competition by providing quality products/services, standardization is one of the most important activities to consider. As S.N. Chary (2012) clearly puts in his book 'Production and Operations Management'; "quality in products/services comes through: physical standards – quantifiable standards; system standards – methodology - oriented; behavioral standards – way of interacting and philosophical standards – ways of thinking or attitudinal and motivational aspects".

Standards are set by management, but they must be able to change when the environment changes. Companies can achieve dramatic improvement as reviewing the standards periodically, collecting and analyzing data on defects, and encouraging teams to conduct problem-solving activities. Once the standards are in place and are being followed then if there are deviations, the workers know that there is a problem. Then employees will review the standards and either corrects the deviation or advice management on changing and improving the standard.

According to Imai, there are two types of standards in gemba kaizen. The first one, managerial standards, which are necessary for managing employees for administrative purpose and which include administrative rules, personnel guidelines and policies, job descriptions, rules for preparing expense accounts, etc. The other is called operational standards, which have to do with the way people do a job to realize QCD. While managerial standards relate to the internal purpose of managing employees, operational standards relate to the external demand to achieve QCD to satisfy customers.

J.K. Liker (2004) in his book "The Toyota Way" takes M. Imai's explanations of standardization as "It is impossible to improve any process until it is standardized?" He also suggests as "one must

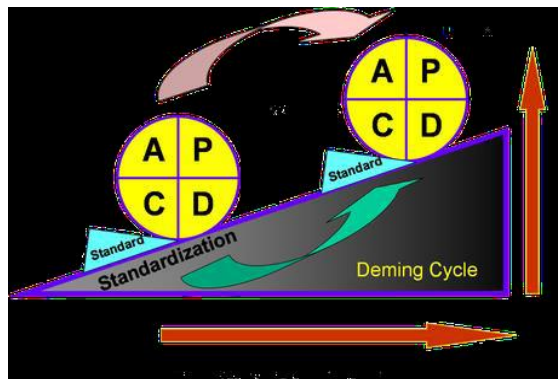
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standardize, and thus stabilize the process, before, continuous improvements can be made." That is, adaptation to the standard is required before trying to improve the standard. This can best be illustrated by using Deming's PDCA cycle (Plan - do - check - Act) which can help in adapting the standard (stabilize).

Accordingly, the PDCA cycle of continuous improvement can be described as follows: "Plan: identify what to improve and develop future actions to undertake based on opportunities of improvements and internal assessments; do: carry out the plan; check: evaluate the result against the plan and finally, act: adjust the process (plan, do and act) as required. In the process, it can then enable the organization or work units to see the opportunities of improving the standards.

### 2.1.4 Deming cycle for continuous improvement/ PDCA Cycle/

PDCA cycle also known as Deming Cycle for continuous improvement (Sallis, 2014) as presented in Figure.2-3 is an iterative four step management method used in business for the control and continuous improvement of processes and products.



**Plan:** involves analyzing the current situation, identifying an opportunity and planning for change.  
**Do:** Implement the change on a small scale in controlled circumstances.

**Check:** Use data to analyze the results of the change and determine whether it made a difference.

**Act:** If the change was successful, implement it on a wider scale and continuously assess your results. If the change did not work, begin the cycle again.

Figure 2-3 Deming cycle for continuous improvement

### 2.1.5 Management Roles

Management has two major functions in kaizen (i) Create a conducive environment and encourages continuous improvement (technological, managerial and operative) and establishes standards; (ii) maintaining the standards established; as we go from the bottom, the improvement function increases and the top and middle management have a greater role in it. Similarly, as we come down from the top, the supervisors and workers have a greater role in maintenance function. The important role for management in maintenance function is to establish the standards, policies

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and procedures so that they can be followed by everybody and they could be monitored and reviewed. Management also has the responsibility to educate and train the people to enable them to follow the standards.

### **Top Management**

Top management is the high level of the organization and the mind of the organization that responsible for establishing Kaizen as the company and corporate strategy as well as communicating this all levels of commitment through policy deployment of the organization and allocating the resources necessary for Kaizen to work and build systems procedures, and structure to implemented Kaizen Michael (2014). On the other hand top management endorsements help to influence, visionary leadership and restructure business organizations and is an effective factor to influence cultural change in attitudes of individual employees toward quality. Education and training help people understand the fundamentals, tools, and techniques of kaizen. Training is part of the communication process to make sure that manager and employees apply and implement the kaizen techniques effectively: Gordian S. Bwemelo (2016).

**2. Middle Management:** Middle management is responsible for top management that implementing the policies of Kaizen that establishing by top management; for the purpose of maintaining, improving setup of work standards, and to provides the necessary training to ensuring performance of Kaizen implementation and employees training and learn the way of improvement and problem solving

**3. Supervisors;** Team leaders have the duty of the Kaizen applying approach based on their functional roles; that engage in Kaizen through the setup systems and established a member of groups activities, practice discipline in the service and to become better performance; problem solvers Improving the way of communication at the work place; maintaining morale and providing necessary training for teamwork activities

**4. Workers;** Employees have rights and obligations for responsible and participating in Kaizen implementation through individual and teamwork activities, making Kaizen philosophy, engaging in continuous self-improvement activities, continually enhancing job skills with education and training that come up continually improvement throughout organization training program.

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### 2.1.6 Management commitment

Everyone is responsible for quality, especially senior management and the CEO; however, only the latter can provide the leadership systems to achieve results. Kaizen implementation begins with senior management and, most important the CEO's commitment. Delegation and rhetoric are not sufficient- involvement is required.

By way of introduction, top management must put forth very careful and very clear policy statement. It must then establish an implementation schedule and demonstrate leadership by practicing kaizen procedure within its own ranks (Masaki Imai, 2000). Improving quality will be hampered if poor communication impedes the flow of information to and from employees.

Senior management commitment should be obsession, not lip service. It is possible to detect real commitment; it shows on the shop floor, in the offices, in the hospital ward – at the point of operation. Management should be dedicated to the regular improvement of quality, not simply a one-step improvement to an acceptable plateau (Anthony.et.al 2005).

Naidu.et.al, 2006 also explained the function of management in the implementation of kaizen in such a way that, management has two major functions: maintenance and improvement.

Maintenance refers to activities directed towards maintaining current technological, managerial, and operating standards and upholding such standards through training and discipline. Under its maintenance function, management performs its assigned tasks so that everybody can follow standards operating procedures. Improvement, meanwhile, refers to activities directed toward elevating current standards.

### 2.1.7 Communication

Everyone needs to be trained in quality awareness and problem solving. It is important to communicate kaizen to the entire organization. Communication is important throughout the implementation stage. Communication is important to create kaizen awareness, interest, desire, and action (Masaki Imai, 2000).

All organizations communicate with their employees in one or another. Communication delivers the organization's value, expectations, and directions; provide information about corporate developments; and allow feedback from all levels (Dale.et.al, 2004).

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Communication is one of the most important supportive dimensions to be considered when implementing kaizen in an institution. From the principles of kaizen it becomes clear that communication is one of the key success factors in the quality improvement process (Oakland 2007).

According to Slobodan et al, 2011, in order to implement kaizen effectively, there must be people-orientated communication in an institution, which provides a friendly atmosphere in which everyone communicates quickly. Effective communication helps to break down the traditional institutional hierarchy. It also encourages communication of both good and bad news, so that any type of news can travel from one end of the institution to the other, and through all levels.

### **2.1.8 Training and Education**

Presenting kaizen training throughout an institution, forms part of the total quality improvement process that is to be implemented by management. It is the leading edge of the total process as it provides communication and direction for everyone at the institution. Moreover, it is responsive to the kaizen strategy that states, “Improvement is everyone’s responsibility”. Therefore, most appropriately, it is the expanding role of the quality function (Asiya, 2012)

Training and education provide the necessary skills and knowledge – the ability to make it happen. It is an investment that needs to be made. According to Philip 2010, worker satisfaction, motivation and ability to act as a constructive part in the process of continuous improvement depend largely on education and training. In the past kaizen training was limited to the quality control or quality assurance people who worked daily in the staff or line quality function.

In kaizen environment everyone is required to gain additional capabilities to improve the process. Hence, a comprehensive training program is necessary and must be institutionalized within the entire organization. Training in respect of the kaizen philosophy, guiding principles and tools and techniques is never ending (Asiya, 2012). Personal and team interaction skills must be refined continually. It should start with specific training for management. Once management has the skills to lead the kaizen process, the rest of the institution should be trained to ensure a systematic, integrated, consistent institution-wide effort (Philip 2010). Specific job skills training must be provided and constantly updated to reflect the improved process.

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### **2.1.9 Kaizen Contribution (outcomes)**

Through there is shortage of literatures on the concept of Kaizen in general and in Kaizen outcomes in particular, practitioners have been developing the concept of technical and social system outcomes of Kaizen after (Imai, 1986) publication. Cudney (2009) also suggested that, lean transformation (focuses on eliminating and preventing waste and improving flows) requires continuous change in the technical system, the behavioral system, and management system. Implementation of Kaizen leads to improved quality and greater productivity in the short term. He also narrated, manager may see from the short term Kaizen performance productivity increase by 30 percent, 50 percent, and even 100 percent and more, all without major capital investment. According to Kosandal and Farris (2006), the technical system outcome, targeted during Kaizen implementation includes: Floor space, Productivity Part travel time, and Lead time, Work- in – process (WIP) Set-up time, Percent on time delivery, Productivity, Throughput and product design. They also suggested the magnitude of improvement on the technical system outcome ranges from 25 percent – 100 percent of improvement, which is also similar with Imai’s conclusion.

According to Kosandal and Farris (2006) the social system outcome aligned with Kaizen continuous improvement such as: Employee knowledge, skill and attitude, according to (Kosandal and Farris, 2004) these three dimensions (knowledge, skill and attitude) describe employee characteristics that are required to adequately perform desired tasks. According to them, Knowledge refers the body of necessary information, Skill refers to psychomotor capability and Attitude describe desire to perform a given activity.

Farris, also further stressed the importance of employee commitment, training and skill development for sustainability.

### **2.1.10 Challenge for continuous improvement**

Many studies note that, in both Japan and abroad, especially in the cases of American and European companies, leadership is the single most important factor for successful implementation and sustainability of kaizen (Imai, 1986)). This implies that it is possible to apply kaizen in countries with different socio cultural contexts but that application must be conducted under proper leadership and with adjustments that reflect the uniqueness of the targeted society.

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Workers who feel that the organization is committed to them are likely to have a positive attitude. Organizational commitment is an attitude, which exists between the individual and the organization where it is considered as a relative strength of the individual's psychological identification and involvement with the organization.

Communication is an integral part of all management functions. In order to lead, plan, organize, and control, managers have to communicate with their subordinates. The term communication has a wide range of meanings. Communication is "a two way process by which certain information is conveyed or transmitted from a communication source to a receiver. (Lowe, 1995, p.6) defines it as "a purposeful process, which involves sources, messages, channels, and receivers". Effective communication should be done within the organization to obtain a common understanding of quality and associated benefits and a clear understanding of how the quality program fits into the vision and mission of the organization.

Knowledge of motivation helps companies to understand the utilization of employee involvement to achieve process improvement (Naidu et al., 2006). Motivated employees are willing to exert a particular level of effort for a certain amount of time toward a particular goal.

### **2.1.11 Employee participation and Involvement**

Employee involvement is one approach to improving quality and productivity. Its use is credited for contributing to the success enjoyed by the Japanese in the world market place. Employee involvement is not replacement for management nor is it the final word in quality improvement. It is a means to better meet organization's goals for quality and productivity at all levels of an organization (Dale et al., 2004).

Suggestion system is designed to provide the individual with the opportunity to be involved by contributing to the organizations. Most of the ideas for continuous improvements will come from the team approach: They must make it easy employees to suggest improvements, review them promptly and implement them (Masaki Imai, 2000).

Kaizen needs a supportive culture or sentiment within the company to be able to thrive. If the values of this philosophy cannot be installed into the hearts and minds of a company's employees, the chances of long-term success are slim. Also, the values of kaizen have to match the actions of its employees, and especially its management. As the kaizen philosophy is essentially based on the



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values of openness, trust, exchange, and a “supportive corporate culture”, the introduction of a new system in conjunction with an old repressive frame of mind will eventually backfire.

### **2.1.12 Motivation and Attitude**

Knowledge of motivation helps companies to understand the utilization of employee involvement to achieve process improvement (Naidu.et.al, 2006). Motivated employees are willing to exert a particular level of effort for a certain amount of time toward a particular goal.

Besides recognition is a form of employee motivation in which the organization publically acknowledges the positive contributions an individual or team has made to the success of the organization (Dale et.al, 2004). A motivated employee is responsive of the definite goals and objectives he/she must achieve, therefore he/she directs its efforts in that direction. Naidu.et.al, 2006 reported that motivation formulates an organization more successful because provoked employees are constantly looking for improved practices to do a work, so it is essential for organizations to persuade motivation of their employees (Jens.et.al, 2007).

People like to be recognized, either as a team or individually. A person’s feeling of achievement, value to the organization, knowing the organization cares, and having peer recognition maybe more important than any reward (Jens.et.al, 2007).

### **2.1.13 Corporate Culture and positive mindset**

Culture is a primary determinant of the institutional environment. Before embarking on a quality revolution, an institution must determine whether its culture offers an environment that is conducive to total quality. If not, the culture must be changed. Institutional culture is a key means to communicate the goals of the institution and the appropriate behavior in attaining those goals. Culture in any business may be defined then as the beliefs that pervade the organization about how business should be conducted, and how employees should behave and should be treated.

Any organization needs a vision framework that includes its guiding philosophy, core values and beliefs and a purpose. These should be combined into a mission, which provides a vivid description of what things will be like when it has been achieved (Oakland, 2007).

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Creating a quality culture within an organization is increasingly recognized as one of the primary conditions for the successful implementation of kaizen. It requires uncovering current underlying culture and examining the appropriateness of the objectives in order to adopt kaizen. To close the gap between the old and the required new culture one must also explore the new quality improvement process for achieving customer satisfaction (Jens.et.al, 2007). Culture is the product of complex influences from both internal and external environments.

Culture is therefore not easily adaptable in the short term – a fact that top management should bear in mind during strategy analysis and choices. It is therefore essential for top management to analyse the institutional culture and to identify those factors that have the biggest influence on the culture of an institution, so that, just as in the case of strategy, culture can be developed in the right direction in course of time. It requires much insight, time, resources and the right attitude by top management.

Organizational culture has several essential components i.e. organizational values, leadership, and the reward and recognition structure of the organization. The reward system reflects the organizational philosophy, democratic and innovative or autocratic and bureaucratic. Promotion and rewards reinforces employee commitment to organizational values and to the organizational culture. Reward and recognition have various functions and can be valuable tool at organizations on their road for total quality management. It shows the individuals or the teams that they are on the right track toward continuous improvement. Recognition as feedback can come from supervisors, other teams, internal customers in the organization, or external customers in the marketplace, Kaizen philosophy processes demand empowered employees, team players and cross functional activities. Generally R&R has a positive relation between quality production and employees satisfaction in the organization if it do so properly. To do this activity must be aware of each employee during the preparation of organizational R&R planning system hence they are an implementers. If it is done in an improper way, then R&R may create mistrust between the employees and the organizational leadership and management. This also has its own effect both to the employees and the organization vice-versa. Inconstant to that reward and recognition stimulates additional effort in employees if done consciously.

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### 2.1.14 Kaizen Experience of Africa

Kaizen has become a global activity spread by multinational companies and their employees. It has become popular not only in the manufacturing sector but also in the service sector. However, proliferation of kaizen in Africa is still very small due to the limited number of players and the philosophy the Government who bring in the practice. Due to this situation the responsible Government body received the best practice of the Japans KAIZEN in their premises. For the effectiveness of the KAIZEN they commence it as institute. Kaizen Institute is an international private consultant group that specializes in the kaizen method. It has licensed networks throughout 24 countries from which consultants provide services globally.

In Africa, its subsidiary institute opened in several African countries including Ethiopia. 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*.

As the past experiences of *Kaizen* dissemination efforts suggest, an important task for the governments of African countries is to increase awareness through the provision of free training programs for business communities and the creation of model factories. It is also important to train the trainers who assist the managers and engineers of those firms that are willing to learn about *Kaizen*. (Sonobe, 2018)

Sub-Saharan Africa intend to achieve economic transformation through improving the productivity of their industries and service sectors and upgrading their competitiveness in the international market without relying on the price hike of oil and minerals produced in this continent. In addition, the African Union Commission (AUC) introduced *Kaizen* in 2009 by obtaining the support of the Spanish government for their own reform of the internal administrative system. Imai (2012) reports the case of the AUC as a model of removing *Muda* from the public sector organization in his second edition of *Gemba Kaizen*. He presents the 4P model (Physical workplace improvement, Process improvement, Policy review, and People involvement) for the AUC as a result of customization of *Kaizen*. From 2015, JICA has followed this effort and

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supported AUC *Kaizen* promotion that is based on the formulation of *Kaizen* taskforce and improvement of the AUC's standard operational procedures. Furthermore, the New Partnership for Africa's Development (NEPAD) Agency, in collaboration with JICA, has also started promoting *Kaizen* efforts among the AU member countries from 2016. In sub-Saharan Africa, Ethiopia is a top runner which has introduced nationwide *Kaizen* activities.

In Ethiopia, there is significant FDI influx into the garment and leather industries in the past decade. Many of them come from Asia, particularly from China, and are practicing some *Kaizen* tools such as 5S in their factories built in Ethiopia. Managers of the factories who came from China or Taiwan are already familiar with these tools even without knowing the origin of *Kaizen*. They spend huge efforts to train newly recruited young local workers on basic disciplines starting from how to use the toilet and proceeding to the importance of keeping rules and regulations and then technical skills of cutting and sewing. 5S is an effective tool for them to teach discipline to these workers. Therefore, the government-led *Kaizen* promotion in Ethiopia may have good complementarity with its enthusiastic policy of FDI attraction. (Sonobe, 2018)

Prior to JICA's cooperation with Africa, there are two countries, Burkina Faso and Botswana, that have attempted to transplant *Kaizen*-type productivity improvement activities in Africa. In Burkina Faso, the World Bank supported *Kaizen* dissemination from 1989 until 2000 and the United Nations Industrial Development Organization (UNIDO) supported it from 1999 to 2003. Uesu (2011) discussed by citing the report of UNIDO in 2005 that despite some important achievements and the important role of the organization that promoted QCC, the results of application varied between companies and were judged as "mixed." Based on the review of the case in Burkina Faso, Uesu concludes by making four recommendations on *Kaizen* promotion in developing countries that includes: (1) the government should play a proactive role to encourage the private sector in improving quality and productivity and (2) the imported system should be tailored in accordance with the circumstances and the capacity of the country.

Regarding the latter, she explains that the companies that were successful in promoting QCC had made small adjustments in accordance with the difference in employment systems between Japan and Burkina Faso, while others who failed had not. In Botswana, the NPB in Singapore supported

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productivity improvement from 1991 to 2000, which is reported by Kitaw (2011). He concludes that the impact of the productivity improvement program in Botswana has not been as high as expected, by referring to the downward trend of the country's rating in the Global Competitive Index, ranked 66th in 2009/2010, 76th in 2010/2011 and 80th in 2011/2012. However, the support by Singapore's NPB had terminated ten years before this downward trend began, so further research is needed. And the conditions of African economies between the stagnating 1990s and the growing 2010s are quite different, so the absorptive capacity of companies and the environment surrounding them in the continent might be different too. (Sonobe, 2018)

### **2.1.15 Ethiopian Experience of Kaizen**

The Government of Ethiopia implemented Organizational performance and effectiveness before Implementing Kaizen called BPR, shortly after the introduction of a nationwide Business Process Reengineering (BPR). According to (Debela, 2009) since 1994, the government of Ethiopia has embarked on reforming its civil service organizations with the objective of improving the public sector service delivery system. It was applied in Government bureaus, an idea introduced to bring radical changes among state institutions but, in the process, virtually stalled them for months and now widely deemed to be a failure. During the summer of 2008, the late Prime Minister of Ethiopia, H.E. Meles Zenawi, was discussing development issues with scholars from the Western and Eastern worlds. Contact with Japanese academics provided him with an opportunity to learn about *Kaizen*. In search of better understanding, he requested that JICA provide further explanation regarding *Kaizen* projects and the experience of African countries. JICA honored his request by providing information and progress concerning JICA-assisted *Kaizen* Projects in Africa.

After hearing about the productivity and quality improvement impacts of *Kaizen* as well as its contribution to the industrial development of Japan—initially based on small and medium-sized enterprises (SMEs) — he extended his request to JICA for further assistance. In addition to these contacts, *Kaizen* was frequently discussed in High level Policy Dialogue forums assisted by JICA and the professional contributions of Professors Kenichi Ohno and Izumi Ohno, from the GRIPS Development Forum.

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A project entitled “The Study on Quality and Productivity Improvement (*Kaizen*) in the Federal Republic of Ethiopia” was designed by JICA in consultation with an Ethiopian counterpart and signed by the Ministry of Industry and JICA on June 4, 2009. The project time frame was from October 2009 to May 2011.

The Ministry of Industry established a *Kaizen* Unit (KU) consisting of ten members and assigned a team leader. The members were drawn from the Ministry and Institutions affiliated to it, and the new team was given a written mandate to work with JICA consultants to realize the project objectives. The project was hosted by the Metal Products Development Center, which provided offices, as well as conference and training rooms for JICA consultants and the unit. JICA deployed a team of experts and their first task was to explain the concept of *Kaizen* by opening discussions between the unit members and JICA experts. The first objective of the project was to transfer *Kaizen* knowledge and skills from JICA experts to KU members. In line with this, course modules were prepared by JICA experts and delivered with the help of classroom demonstrations, videos, and games.

The major course contents were the definition of *Kaizen*, elimination of waste, visual management, quality control circles, problem-solving steps, seven quality control tools, operation standards, and time study. A month-long classroom training (CRT) was followed by five months of in-company training (ICT). To select the 30 companies for the pilot project, a long list of medium and large manufacturing companies was prepared. Among the major selection criterion were that the participating companies needed to be situated within a radius of 100 km of the capital city. They needed to make contributions to export/import substitution, possess scale of capital, have a diverse range of products, and avoid duplication of support with other donors. The interest and commitment of management and workers was another important criterion.

A national conference was held to introduce the project, to assess the interest of companies, and to facilitate registration of those who expressed a willingness to participate. The initial long list was shortened from 180 to 60 companies. Through visiting the companies, the JICA expert team and KU members identified 30 pilot companies from 5 sub-sectors, namely, (1) 10 companies in basic metal and engineering, (2) 6 in agro-processing, (3) 6 in chemical manufacturing, (4) 4 in

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leather, and (5) 4 in textiles. These companies were divided into three groups and each group of ten companies undertook training for a duration of six months. Checklists and formats were prepared to be used by the KU members and companies throughout their *Kaizen* activities. Side by side with CRT and ICT, a training program was arranged and conducted in Japan for 30 company owners and managers as well as 10 KU members. This training program offered an important chance to observe and learn in the actual environment of Japanese companies, workers, and people. Many participants shared their judgment that *Kaizen* is not only a management philosophy but is also a part of Japanese ‘culture’. There were regular mini-conferences between the JICA experts and KU members to discuss issues requiring clarification and the challenges that periodically arose within companies. KU members took different topics, prepared presentations, and delivered them at mini-conferences as part of their self-education process. The objective of skill transfer comprised the major part of the project and it was concluded by developing a consultant skill matrix for KU members and future *Kaizen* consultants (Getahun, 2018).

The skill matrix was prepared based on local participant experiences of the pilot project, while also incorporating Japanese experiences. The matrix comprises Grade I (Junior Consultant), Grade II (Assistant Consultant), Grade III (Consultant), Grade IV (Senior Consultant), and Grade V (Lead Consultant). The competence requirements were improved during the second and third JICA projects, and incorporated into the Ethiopia *Kaizen* Institute (EKI) Strategic Roadmap and Model. The pilot project raised quality and productivity consciousness in the pilot companies. It was clear that introducing *Kaizen* into these companies improved quality, productivity, and safety, reducing costs and lead time. Those companies with Grade III and above, which constitute 65% of the total population, are characterized by strong management commitment and good management-employee relationships, while those below Grade III that accounts for 35% lack these commitments. The impact of *Kaizen* activity on 65% of the companies constitutes satisfactory achievement, thereby confirming the success of the project. In addition, this result indicates the high transferability and high acceptability of *Kaizen* to Ethiopian companies (Getahun, 2018).

The second objective of the project was to develop a manual to be used by KU members and the proposed Ethiopia *Kaizen* Institute, which was under consideration by the government at that time. The manual contains procedures, steps, and a sequential flow of *Kaizen* activities. The sequence

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primarily consists of (1) acquisition of *Kaizen* knowledge, (2) rapid assessment of the workplace environment and operations at companies for identification of problems, (3) selection of model workplaces, (4) application of *Kaizen* activities at selected model workplaces for examination, (5) self-organization of *Kaizen* activities through conducting QCC activities, (6) preparatory work for companywide *Kaizen* activities, and (7) self-evaluation of *Kaizen* activities for continual *Kaizen* dissemination. This sequential flow comprises an actual application of PDCA modality (i.e., ‘Plan-Do-Check-Act’ cycle). Thus, the manual provides not only the operational and procedural guides for carrying out *Kaizen* activities but also enhances opportunities to customize the application methodology revealed in the manual into various workplaces and companies. The manual is accompanied by audio-visual materials. The *Kaizen* knowledge components and the steps moving from the base to the top with the help of PDCA cycle were depicted as a *Kaizen* tree to clearly show the *Kaizen* system in action in five sequential steps from simple to complex. This concept has been used in crafting the Ethiopia *Kaizen* Model and Roadmap (Getahun, 2018).

The third objective of the pilot project was to develop a National Plan, which was comprised of objectives and strategies for dissemination, institutionalization, and establishment of a *Kaizen* movement. However, the latter two were not covered by the project. JICA recruited additional experts to undertake an institutionalization study. The study of the *Kaizen* movement and extraction of best experiences relevant to Ethiopia was done as part of the High level Policy Dialogue (Getahun, 2018).

The dissemination plan was incorporated into the manual. The *Kaizen* dissemination plan took into consideration synchronizing the implementation of *Kaizen* with the National Development Plan. During the final stage of the project, Ethiopia was crafting the Growth and Transformation Plan (GTP I) and revising the Micro and Small Enterprise Development Strategy. It was an opportunity to streamline *Kaizen* dissemination into the national plan and to formulate the modalities for reaching various scales of companies. The awareness and quick decision to adopt *Kaizen* by the government of Ethiopia, the rapid response by JICA in designing the project and deploying experts, and the success of the project became a landmark for subsequent JICA assistance and the benefits were harnessed by Ethiopian companies. It provided the impetus for the Ethiopian government to establish a strong and vibrant *Kaizen* Institute, thereby nurturing hundreds of



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*Kaizen* consultants and making Ethiopia *Kaizen* a flagship project for JICA. As a landmark, it contributed to the upgrading of KU into the Ethiopia *Kaizen* Institute, where it could craft its vision as “a center for transformed working cultures and innovation management skill,” thus spearheading its place as a center of excellence in Africa.

The Ethiopia *Kaizen* Institute was established by the proclamation of the Council of Ministers 256/2011 (FDRE 2011). The objectives of the institute as stipulated in the gazette are to initiate a countrywide broad-based quality and productivity movement and thereby enhance industry competitiveness. The major powers and duties of the institute are as follows:

1. Formulate and implement as approved; policies, strategies and programs that assist in the dissemination of the *Kaizen* knowledge and implementation tools, create a countrywide quality and productivity movement that could enable the effective implementation of government policies and strategies;
2. Prepare, review, and distribute *Kaizen* training and consultancy manuals customized to micro, small, medium, and large enterprises and follow up their performances; provide training of trainers on Technical and Vocational Education and Training Institutes’ industrial extension experts to enable them to be capable to provide *Kaizen* training and consultancy to micro and small enterprises and provide *Kaizen* training and consultancy to medium and large companies;
3. Coordinate, consult, and support *Kaizen* concepts and tools to disseminate them at any level of service and educational institutes, establish and perform a system that induces organizations to implement *Kaizen*, support organizations to establish quality control circles and/ or continuous improvement circles, and register their performances;
4. Conduct studies, collect, organize, and disseminate information to observe improvements made because of *Kaizen*; prepare key performance indicators to measure *Kaizen* implementation results, establish evaluation and certification systems for *Kaizen* trainers and consultants, accumulate best *Kaizen* practices, disseminate and produce *Kaizen* model companies; and
5. Prepare recognition and incentive systems and implement them upon approval of organizations; recognize quality control circles that have excelled in *Kaizen* training and consultancy performances; designate a quality month and perform countrywide discussion forums.

The institute is presently accountable to the Ministry of Public Service and Human Resource Development. The Joint Coordination Committee of the JICA project is chaired by the Minister.

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The institute submits to the ministry monthly, quarterly, and annual performance reports and is evaluated by the management team of the ministry chaired by the minister. The leadership tier consists of a council, ministry, and director general, and deputy director generals. The Prime Minister is the Chairperson of the Council and members are drawn from appropriate government offices, the private sector, and professional associations. The number of members is determined as required.

JICA commissioned the second project to train *Kaizen* consultants recruited by the institute. The project duration was for three years from November 2011 to December 2014. JICA deployed an expert group and EKI continuously recruited consultants to be trained by the project. Six consultants who were former KU members were permanently attached to the project. The modalities of training were one-month classroom training (CRT) and five-month in-company training (ICT) for medium and large industries and two-week CRT and eight-week ICT for micro and small enterprises. The Japanese experts provided classroom trainings to EKI consultants and to TVET trainers of trainers. TVET trainers of trainers were selected from all regions and they were expected to expand *Kaizen* activities in their respective regions. In each batch, large and medium enterprises as well as micro and small enterprises were selected. The selection was followed by a reconnaissance survey by JICA and EKI consultants.

Based on the survey results and commitments of the company, a one-day awareness creation program was conducted mainly for managers and *Kaizen* representatives to further stimulate their motivation. EKI consultants were deployed to enterprises supervised and assisted by JICA experts. The project plan called for the training of 60 EKI consultants over three years of the project, while the actual achievement was 57 trained consultants. The difference was mainly due to EKI's limited capacity to supply trainees as per the plan in each batch. The plan also called for the training of 170 professional TVET trainers, with 137 TVET trainers' trainers actually achieved. The difference of 33 TVET trainers was due to the failure of some regions to send a satisfactory number to EKI for the training in each batch. Through in-company training, *Kaizen* was introduced to 51 large and medium enterprises and 129 micro and small enterprises. The number of consultants increased during the course of the second project. When the project started in 2014, the institute was staffed by 123 employees, with 82 consultants (44 male and 38 female). Out of this total, 57

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were trained by the project. As of 2017, the institute has 153 employees including 107 consultants—65 males and 42 females—an increase of 30% within two years. A comparison between 2014 and 2016. The second project was considered to be success and the JICA evaluation report concluded that its achievements were satisfactory. With EKI growing in strength over time, a request was placed for JICA for a third assistance project. The goal of the assistance is for intermediate *Kaizen* capacity building based on the long-term strategy proposed in the report and in the framework of the Second Growth and Transformational Plan. *Kaizen* is well reflected in this plan and EKI has designed its own five-year plan corresponding to the GTP II period 2015–2020 (FDRE 2015).

The request was accepted, and it is expected that 90 consultants will be trained in intermediate *Kaizen* with the help of this project. The organizational structure of the institute has been changed twice within a four-year period. The major cause of the change is the expansion of EKI's activities. The current structure is organized around 5 major sectors and 21 Directorates (EKI 2016a).

In summary, the first project confirmed the transferability of *Kaizen* to Ethiopia and led to the birth of EKI. The second project trained 57 EKI consultants and helped EKI to develop autonomous capacity for launching a *Kaizen* movement using basic *Kaizen* knowledge without the help of Japanese experts or other foreign assistance. The third project is to raise the capacity of EKI to an intermediate level (JICA 2016). By the end of this project, EKI hopes to achieve an advanced level of *Kaizen*, which is the apex of *Kaizen* knowledge. It has planned for this venture to be undertaken in the years 2020–2025.

### **2.2 Empirical literature**

The philosophy of kaizen has kindled considerable interest among researchers because it increases productivity of the company and helps to produce high-quality products with minimum efforts. There is large evidence that kaizen implementation have positive impact on the performance of the industries (Williams, 2001). Different scholars in the area have been arguing that proper understanding of policy instruments, methods, culture, principles, and application techniques of the kaizen philosophy would be one essential step towards addressing and solving the currently existing problems and challenges. By so doing, the enterprises move towards incidentally achieving the desired developmental objectives (Murata, K., Katayama, H., 2010; Murata, K.,

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Katayama, H., 2009). Kamau (2012) examined the factors influencing the implementation of quality standards (Kaizen) in Kenyan flower industry. His study indicated that the following factors influenced implementation of Kaizen; team work was leading in influence, followed by training, followed by management support and last was education level of workers.

Coming back to the case of the Ethiopian context so far, there have been limited and inconclusive studies conducted on the implementation of Kaizen in organizations at different levels. (Seid, 2012) Conducted a quantitative study on the role of the Ethiopian Government in implementing kaizen as a modern management tool for quality and productivity at Kadisco Chemical Industry in Addis Ababa. The findings of this study indicated that the implementation of the Kaizen policy was found to increase labor productivity by reducing, on average of 50%, time wastage for searching tools; improved a defect ratio which ranged from 50% to 70%; and improved lead time in the range of 16% to 90%. The study thus concludes that the implementation of Kaizen at Kadisco Industry has brought those benefits. Kelly (2000), in contrast, states that the partial or incorrect implementation of generated policy will always produce instability and wastage of resources. Hence, the Government employs professionals to implement the full package of industrial extension and technology adaptation and transfer which was launched as the second phase in 2011.

As noted in Asayehgn Desta et al., (2014), based on the three pilot companies (Mesfin Industrial Engineering PLC, Almeda Textile Factory PLC., and Sheba Leather and Tanning Industry PLC), the study found that the employees didn't have the full capacity to accept the kaizen management system. If they had for example, by forming a kaizen cross functional teamwork approach, workers could have been empowered to challenge the status quo, gathering the most conspicuous internal and external factors that could be become part of the work ethics necessary for continuous improvement of productivity. Instead, it was found that some of the executive managers were themselves not committed to the kaizen teamwork because they didn't usually participate nor did they allow the shop floor workers or operators to participate in team group work. In addition, the tools and techniques used by the pilot companies did not create lean enterprises that could have minimized waste. This might be because the internal and external training given to the employees was designed for very short periods of time and some of the managers and employees of the pilot companies were not yet fully committed to the kaizen management philosophy. Despite these weaknesses, however, it can be appreciated that though only partially

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committed to the kaizen management philosophy, the three pilot companies have marginally reduced the costs of production, improved quality, reduced lead time and improved customer's satisfaction (Asayehgn Desta et al, 2014). On the other hand, the study found that Ethiopia does not have problems of leadership, since kaizen was driven by strong commitment of the top leader. As a result, kaizen has come to be known among policy makers and business managers in Ethiopia (GRIPS2011).

Kaizen was intended to bring about changes in organizational structure, in eliminating long bureaucratic chains, in time consumption and to shorten the long work flow process, proper documentation and to bring effective and efficient delivery services to partners and structure of the Commission AU (Getu Assefa ).

After the introduction of *Kaizen* in Metehara Sugar Company annual production of sugar increased from 61.3% in 2012 to 88.4% in 2013 compared to the factory's attainable capacity. Similarly, ethanol production increased from 69.5% in 2012 to 74.6% in 2013. In 2014, compared to the performance in 2013, working hours wasted were reduced by 30%, sugar production waste was reduced by 2.4%, annual sugar crushing capacity improved by 5%, daily sugar production capacity increased by 3%, and sugar cane yield increased by 5%. The two-year performances indicate the continuous improvements by the Company. The most important change, over and above these quantitatively explained results, has been the attitudinal change, which is highly significant. Developing confidence in bringing change, bridging the gap between management and workers through total participatory activities by involving the whole workforce was a far-reaching result in maintaining the momentum of continuous improvement (Getahun, 2018)). Most companies that introduced *Kaizen* have continued to improve their workplace in terms of (1) orderliness and cleanliness, (2) worker safety, (3) worker motivation by increasing salaries and providing bonuses, (4) product quality improvements by reducing defects and the need for repairs, (5) productivity improvements by reducing waste, and (6) delivery time improvements in meeting the requirements of their customers. Although the magnitude of change differs between companies, all implementing companies have attained such results.

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Thus, kaizen implementation in private firm and in the context of the Ethiopian Government show that there is a paradox and, therefore, seems strange. There is no conclusive empirical evidence which clearly show whether or not the kaizen implementations in different contexts (such as SMEs) have brought about positive outcomes (Berehanu, 2014)

(Hailu & Habtamu, 2019) Concluded that despite the gap in implementing the Kaizen toolbox in the factory, the study revealed that there is improvement in quality, productivity and profitability to some extent with variation. The study also made it evident that there were some challenges in the process of implementing of Kaizen. Lack of commitment to implement Kaizen continuously, lack of continuous training on Kaizen implementation and complexity of paperwork after Kaizen implementation. In addition, some respondents added additional challenges such as inability to reduce costs as needed, inconsistency in employee motivation through award, decline of employee morale through time and lack of cross-functional team spirit for proper design and innovation. Moreover, the challenges include: lack of regular participation of top management, need of all employees to be motivated through award, unnecessary motion within the factory, lack of on-job training for technicians, and inconsistency in the usage of Kaizen toolbox. Thus, it has been observed that since there was inconsistently in Kaizen toolbox implementation, the challenges are expected to be persistent. The study also revealed that the commitment of the top management is the key factor in implementation Kaizen. Similarly, involving active workers and the existence of cross-functional teams can play a major role in effectively implementing Kaizen. Hence, to have a successful Kaizen implementation, Asela Malt factory shall make sure that its top management should show utmost commitment besides putting in place a practical Kaizen strategy and policy.

### **2.3 Conceptual Framework**

Derived from the reviewed literature sources of similar subject matter a consolidated model adopted evaluated in the previous section. Based on that the requirement for designing a model for the kaizen implementation are developed and ultimately, a framework for a general model is formulated.

Kaizen is based on collaboration of top management, middle managers and front-line employees and proactive and spontaneous participation of employees, and, it is critically important that the

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top management supports employees' participation, ensures appropriate delegation of authority, and provides employee training programs. Everyone is responsible for improvement, especially senior management and the CEO; however, only the latter can provide the leadership systems to achieve results. Kaizen implementation begins with senior management and, most important the CEO's commitment. Delegation and rhetoric are not sufficient- involvement is required.

The training program of an institution has become a growing responsibility of the quality function. Presenting quality training throughout an institution, forms part of the total improvement process that is to be implemented by management. It is the leading edge of the total process as it provides communication and direction for everyone at the institution

Communicating the change strategy and corporate culture to customers, employees and stakeholders followed by top management understanding and commitment is the primary activity towards kaizen implementation. Communication is important in institutions moving towards a kaizen philosophy because of the change involved. The strategy, changes and culture that are established within an institution as a result of the kaizen philosophy, should be communicated clearly and directly from top management to all employees and customers. As there is a close relationship between the culture and strategy of an institution, changes in strategy require supportive changes in institutional culture and systems. Although there is no correct culture for an institution, it is still important that bigger and more fundamental areas of ethics and social responsibility are built into the culture of the institution. When employees participate in such activities as housekeeping, Muda elimination, and review of standards, they immediately begin to see the many benefits brought about by this kaizen and they are first to welcome such changes. Companies need to identify their size to adopt an approach either deployment of companywide approach or selecting a model workplace

In acclaiming the importance of kaizen Imai stated that, contemporary managers often try to apply sophisticated tools and technologies to deal with problems that can be solved with a commonsense, low cost approach. They need to unlearn the habit of trying ever-more sophisticated technologies to solve everyday problem.

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Employee involvement and participation consists of contribution of employees in administration and decision making associated to policies, objectives and strategies of the organization. Employee's perceptive of the goals, standards and political principles of their firms were positively and significantly related to employee motivation and gratification towards work. Empowerment results in motivating employees that leads to constant expansion and organizational growth.

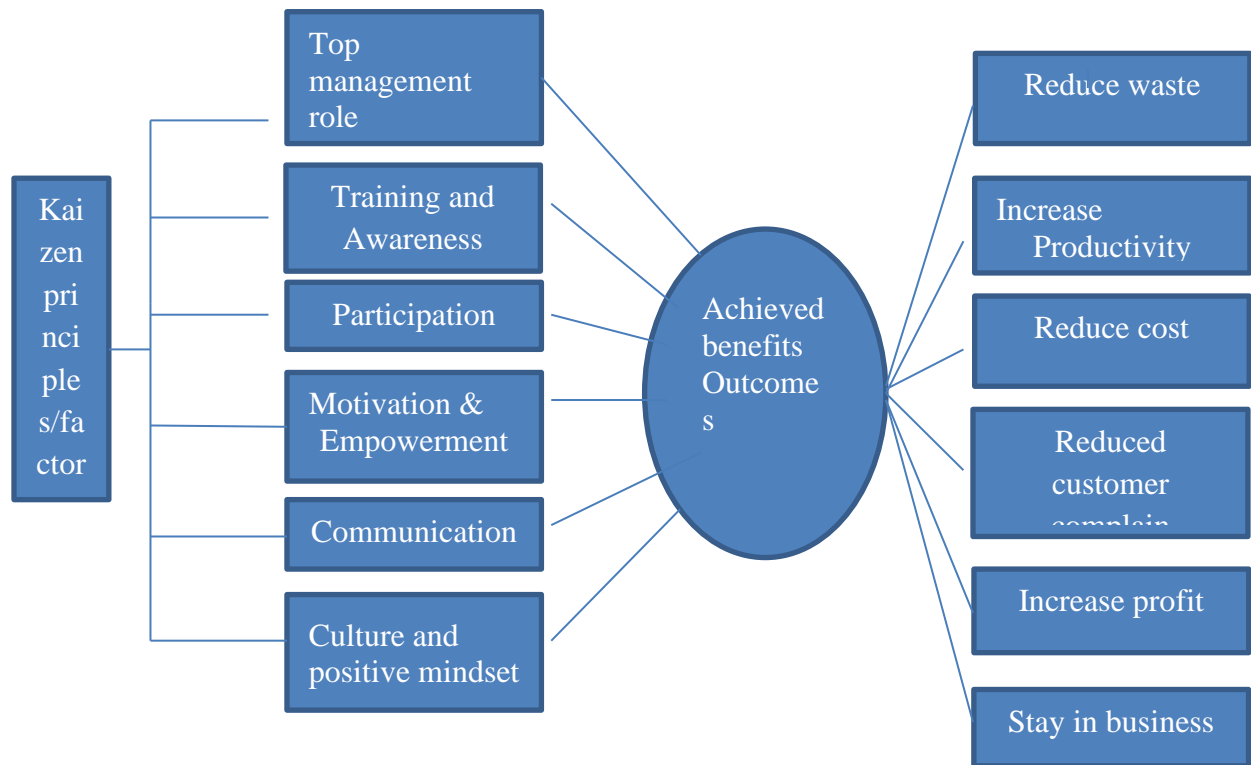
Knowledge of motivation helps companies to understand the utilization of employee involvement to achieve process improvement. Motivated employees are willing to exert a particular level of effort for a certain amount of time toward a particular goal. Besides recognition is a form of employee motivation in which the organization publically acknowledges the positive contributions an individual or team has made to the success of the organization.

Culture in any business may be defined then as the beliefs that pervade the organization about how business should be conducted, and how employees should behave and should be treated. Any organization needs a vision framework that includes its guiding philosophy, core values and beliefs and a purpose. These should be combined into a mission, which provides a vivid description of what things will be like when it has been achieved.

Reward and recognition can motivate those individuals and groups to continue their active participation in the organization. It will also create a positive environment for various teams to compete against each other and these give a 'win-win' situation between the organization and employees.



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**Figure 2-4** Factors for effective implementation of kaizen

Source: *Ethiopian Kaizen manual, 2011*

### 2.4 Research Gap

After Kaizen implementation in Entoto polytechnic College studies should have been done to ensure its effectiveness in bringing the intended changes in performance. But to the contrary no study has done to follow and see the changes brought by the implementation. However, after the implementation of kaizen achievements have been made on utilizations of resource and improving of services provided, which has resulted in a significant impact on the efficiency and effectiveness of the organization. Even though there were changes but still the implementation were not as its expected places, and this study was intended to fill this gap and to show the current status of Kaizen implementation at Entoto polytechnic College .

## CHAPTER THREE

### RESEARCH DESIGN AND METHODOLOGY

#### 3 INTRODUCTION

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*This chapter outlines the methodology on how data and information relevant to the research was gathered and analyzed in order to achieve the objectives of the study. It discusses the description of study procedures and the methods employed in the study. Areas covered include the research design, sources of data, and instruments of data collection, population and sampling procedures and methods of data analysis.*

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##### 3.1 Research Design

There are many definitions of research design, research design is the blueprint for fulfilling research objectives and answering questions where it aids the researcher in the allocation of limited resources by posing crucial choices in the methodology". Other definitions are that research design is an activity- and time-based plan and a guide for selecting sources and types of information to obtain answers to research questions.

Though it can be complicated in selecting an appropriate research design, Cooper and Schindler (2008) are of the view that, by creating a research design which uses a combination of methodologies, researchers can achieve greater insight than if they were to follow methods which used frequency or methods which have been mentioned the most in media.

This research were conducted in a descriptive method of research called survey studies to assess clear understanding about existing trends of the kaizen implementation and its effectiveness in the college under study. The descriptive research method helps to draw a valid general conclusion, and it is the most popular and widely used research method. This idea is strengthened by survey study is the most commonly used descriptive method in research.

##### 3.2 Source of Data

The main sources of data for the research was both primary and secondary data.

➤ **Primary data:** - In relation to this, Trochim (2003:179) argues that alternative forms are designed to be equivalent to the types of questions ... that leads to the outcome. Likewise, Kothari (2006:266) describes that the collection of primary data is either through questionnaire or through

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interviews. Accordingly, for this study, the primary data were collected directly from the sample respondents through the selected instruments discussed in the following sub-sections.

➤ **Secondary sources:** - Besides primary data, secondary data were obtained from different books, newspapers, magazines, academic papers, reports, etc. In addition to these, authentic and reliable online scholarly written literatures were used to supplement the information. To assess the effectiveness of the college's kaizen implementation, the researcher were refer to the annual reports and compare the college's productivity, the major of the college's strategic objective, before and after kaizen in order to examine the improvement.

### 3.3 Instruments of Data Collection

The researcher was collected data by administering a questionnaire and structured interview questions.

#### 3.3.1 Questionnaire

Questionnaire was developed on the basis of basic questions of the study, review of literature, and theories of kaizen as management toolkits. The questionnaire is closed-ended and open-ended; respondents had direct involvement of kaizen practical application in the college. The questionnaires help to collect data from large number of respondents in different department. Further, the questionnaires were detailed and help to cover many subjects or issues was easily and quickly analyzed once the field data gathering work was completed. A rating is a measured judgment of some sort. While opened-ended questionnaires are used for respondents to explain their feeling and understanding freely as much as possible based on the question rises.

The questionnaire had questions, divided into two parts. Part I consist of the demographical background of respondents. Part II discusses about respondents' opinion on Kaizen Implementation based on key dimensions questions to answer the research questions.

#### 3.3.2 Structured Interview

An interview is a purposeful discussion between two or more people. Interviews help to gather valid and reliable data which are relevant to the research questions and objectives. Structured interview guide is detailed and specifies question order. These interviews permit more direct

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comparability of responses and maintain interviewer neutrality. An interview was chosen to enable the researcher to obtain information to supplement what in the questionnaire.

### **3.4 Research Population**

Population refers to the group about whom the researcher wants to know more and from whom a sample will be drawn. This is often defined in terms of demography, geography, occasion time, etc. The primary focus of this study was Entoto polytechnic collages hence the primary population. The total populations were 402. A sample is a set of elements which ideally representative of the population. A probability sampling was used. With probability samples the chance, or probability, of each case being selected from the population is known and is usually equal for all cases. The probability sampling method used when the study population is relatively homogenous for issue that we studying which is suitable for this study.

### **3.5 Sampling Technique**

In principle, accurate information about a given population could be obtained only from census study. However due to time and financial constraints, in many cases, a complete coverage of population is not possible; thus sampling is one of the methods, which allows the researcher to study relatively small number of units representing the whole population (Yogesh 2006).

As indicated above in the Study Area Description, the sampling frame was the total population 402. The researcher was used simple random sampling to select the respondents by getting all employees available that time from all department and also employed lottery method to select the individual respondents.

The sample includes the senior managers and non- managerial staff of the college. This sampling technique will help the researcher maintain accessibility, functional equivalence, and representativeness among respondents.

#### **3.5.1 Sample Size**

In the determination of the sample size, the most common technique is to compute the number of sampled representatives by considering the total population size, required minimum confidence level, and tolerable sampling error. These considerations were incorporated in the following standard sampling formula.

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

Where: n = sample size

N= total population size of the organization

e = sampling error/level of precision

As such, the sample size of this study was computed at a 95% confidence interval (most common in descriptive studies), 5% standard error, and total population size of the organization (402).

$$n = \frac{402}{1+402(0.05)^2}$$

Therefore, 200 participants were selected.

### 3.5 Data collection procedure

Before the fieldwork has been conducted all items of the questionnaires were tested for completeness, clarity and consistency. The test considered a sample of 20 respondents. Based on the input gained from this preliminary survey, ambiguous words and statements were made clear and easily understandable, unseen spelling errors were corrected, redundant and inconsistent question items were identified and illuminated from the final questionnaires distributed.

After planning for data collection, the researcher got enough number of photocopies of the questionnaire (including 10 questionnaires for contingency to mitigate any uncertainty in the process). A total of 200 questionnaires were distributed to those sampled respondents. Out of those questionnaires distributed, about seven (7) questionnaires were lost and five (5) were not filled properly. Finally, the researcher managed to collected data from 188 sample respondents. Questionnaires were fully completed and returned to the researcher. Likewise, five managers were interviewed using structured interviews in order to capture their views on the implementation of kaizen.

### 3.6 Reliability and Validity Taste

It is believed that using different types of procedures for collecting data and obtaining that information through different sources can augment the validity and reliability of the data and their

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interpretation. The process of developing and validating an instrument is in large focused on reducing error in the measurement process. In this regard, numerous frameworks have been developed to evaluate the rigor or assess the trustworthiness of quantitative and qualitative data strategies for establishing credibility, transferability, dependability, and confirm ability have been extensively written about across fields. For case studies that apply both qualitative and quantitative tools (mixed approach), pilot survey is an effective and realistic method to test reliability and validity. As such, the researcher conducted a pilot survey to ensure the content, sequence, friendliness, and quality of the questionnaire.

### **3.6.1 Pilot Survey**

A pilot study is the pre-testing or ‘trying out’ of a particular research instrument. Pilot studies give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated. A pilot survey was conducted to test the reliability and validity of the measurements. The questionnaire was administered to 20 randomly picked cases. The feedback received from this survey was analyzed and taken into account prior to launching the survey. Apart from correcting a few grammatical errors, the survey confirmed that it was not necessary to change much of the substance in the questionnaire. Through the pilot survey, the respondents also confirmed that it was user friendly, easy to understand and quick to fill.

### **3.6.2 Reliability**

The survey questionnaires collected from 188 respondents were processed in the reliability and consistency test. The test focused on the questions included Part III. For reasons of balance, the questions (all rated on 5 point Likert Scale) are organized. Reliability refers to the extent to which data collection techniques or analysis procedures will yield consistent findings. The researcher ensured that the data collection instruments were consistent and standardized in order to avoid risks such as subject or participant error or bias, by using the appropriate data collection techniques and analysis procedure. The feedback received from the pilot survey was used to ascertain and improve reliability. Generally, Cronbach’s Alpha was computed to assess the internal consistency of the research instrument, which is the survey questionnaire.

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Cronbach's Alpha coefficient of 0.84 shows good internal consistence of the items in the Scale used (GEORGE & MALLERY 2003). The below reliability measures show that the internally consistent measure results are greater than the acceptable level, which is 0.70. The result of five scales (measurement units) is well above the minimum range. The reliability test is depicted below

**Table 3-1** Outcome of Reliability Test

<b>Variables Group</b>	<b>Measurement Units (Variables</b>	<b>Cronbach Alpha</b>
1	Implementation of kaizen and awareness	<b>.988</b>
2	Management commitment and communication	<b>.966</b>
3	Education and Training	<b>.897</b>
4	Contributions of kaizen	<b>.990</b>
5	challenge and problem solving	<b>.990</b>
6	Employee involvement and participation	<b>.988</b>
7	Attitude and Motivation	<b>.899</b>

### 3.6.3 Validity Test

Validity refers to how well a test measures what it is purported to measure. In other words, it is concerned with the extent to which researchers access the relevant data that is, whether the collection method results in what one actually was supposed to measure (Saunders *et al.*, 2003). In order to achieve this, the researcher conducted pilot survey to ensure the content, sequence, friendliness, and quality of the questionnaire. In addition, questions rated on 5 point Likert Scale was used to determine the significance and consistency of response from various categories of respondents.

### 3.7 Method of Data analysis

A total of 200 questionnaires were distributed to the sample respondents however, only 188 questionnaires were completely filled in and returned to the researcher Data collection in case study method concurs with data analysis (Thorne, 2000: 2). Those major data collection methods

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used in this study were qualitative and quantitative which were structure interviews and questionnaires were used.

After the completion of the data collection from employees the researcher checked and verified the completeness of data for those questions in the questionnaires and other tools of qualitative data collection. Then, the quantitative data was entered into computer using latest Data View template of IBM SPSS Version 20 and cleaning was done to maintain accuracy and internal consistency before any statistical test was run. The results of the data analyses were presented using descriptive statistics, such as frequency tables consisting frequencies, percentages and figures. Moreover, a measure of correlation like Cronbach's Alpha was computed to assess the internal consistency of the research instrument, which is the survey questionnaire.

The qualitative responses from structured interviews with managements were transcribed verbatim and analyzed using thematic analysis. Afterwards, the qualitative findings were presented theme by theme. Finally, these thematic findings were integrated into those of the quantitative ones while writing-up the thesis. This kind of approach has an implication on the applicability of the findings to policy and practice settings (Simons, 2009). Therefore, the research report was prepared on the synthesis of the findings of the views of all the participants (i.e. respondents and key informants) in the research process on the implementation, practice, problems and challenges of Kaizen training in the college.

### **3.8 Ethical Considerations**

Ethics refers to the appropriateness of behavior in relation to the rights of those who become the subject of your work, or are affected by it. (Blumberg, Cooper& Schindler, Brain, 2005) define ethics as the “moral principles, norms or standards of behavior that guide moral choices about our behavior and our relationships with others”. Bryman & Bell (2007) consider that ethics in business research deals with the following areas: confidentiality, anonymity, informed consent, invasion of privacy and deception. Anonymity refers to concealing the identity of participants in all documents resulting from the research; and confidentiality is concerned with the right of access to the data provided by individual participants and, in particular, the need to keep the data secret or private.



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The researcher tried to establish good relationships with all the interviewees because the selection of potential and appropriate people played important role for the reliability and validity of the qualitative data generated. Those informants in this research first gave their informed consent to participate in the structured interviews. Furthermore, interview questions were made simple and clear to avoid any misunderstanding and avoid ambiguity, as well as sensitivity to the pieces of information the informants would provide to the researcher.

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

#### 4 INTRODUCTION

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*This section focuses on the analysis of the collected data and generating relevant findings. The entire process of analysis and detailed explanation of the findings has been handled in relation to the research topic in general and the research questions/objectives in particular. The Chapter therefore starts with a brief description of the questionnaire respondents. By highlighting the personal and job related characteristics of the respondents, this section helps to provide accurate context/perspective for the research findings. The Chapter then provides a detailed presentation of the analysis of results and discussions of findings regarding the research questions/objectives.*

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##### 4.1 Measurement Units/Study Variables

The researcher summarized the study variables in a way that would enable answer the “Research Questions”. The questionnaire that has been distributed to the staff members of the college is divided into two major parts. The first part seeks information about the respondents’ personal backgrounds. The second part consists of two categories focused on the respondents’ experiences and views on the successful implementation of Kaizen in the college. These categories (see the list below), therefore are used as primary measurement units/variables.

- **Implementation of Kaizen and Awareness creation** to test the general awareness of the Kaizen concept and practices in the college as a function of participation, motivation and communication.
- **Management commitment and communication** as a function of Management and Employee Commitment, information sharing and Team work.
- **Education and Training** in the college as a function of individual empowerment, quality orientation, Feeling of ownership.
- **Contributions, challenge and problem solving** to test the overall practice of Kaizen implementation contribution, challenges and way of solving the problems and two see the outcomes.

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- **Employee involvement and participation** to test the overall participation and involvement of all parity on improvement process and problem resolution
- **Attitude and Motivation** to test the level of employees' perception and attitudes towards internalizing and accepting kaizen as corporate culture

Most of these variables were measured on nominal and ordinal measurement scales. The data thus obtained were interpreted qualitatively and quantitatively in order to make the data more clear and expressive. Respondents' levels of experiences, feelings, and views regarding the Kaizen implementation practices were measured mainly on ordinal scales anchored on scale ranging from 1 to 5, denoting the level of disagreement to agreement on the above mentioned main points. The key informant interview conducted was also along the same points mentioned above and the responses were grouped together, analyzed, and interpreted in cross reference to the response of the staff.

### 4.2 Demographic Characteristics of the Respondents

Tables and descriptive explanations have been employed to illustrate the demographic variables of the respondents such as gender, age, years of experience and educational background of the 188 respondents. These are presented in Tables 4.1 – 4.3

*Table 4-1* Respondents' Gender

Gender	Frequenc y	Percent	Valid Percent	Cumulative Percent
Female	106	56.4	56.4	56.4
Male	82	43.6	43.6	100.0
Total Valid	188	100.0	100.0	

**Source:** The researcher's survey result (2019)

Table 4-1, indicate that 44 percent of the respondent of the college staff were males and 56 percent of them were females. This is an indication of a slightly high Female composition of the respondent staff of Entoto polytechnic college.

## Assess the effectiveness and challenges of kaizen implementation.

**Table 4-2** Age group of the Respondents

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
18-25	72	39	39	38.3
26-35	78	41	41	79.8
36-50	34	18	18	97.9
Above 50	4	2	2	100.0
<b>Total</b>	188	100.0	100.0	

**Source:** The researcher's survey result (2019)

Table 4-2 Indicates that 39 percent of the staff respondents were in the age bracket of 18 - 25 years. 41percent and 18 percent of the Respondents were in the age bracket of 26- 35 and 36 - 50, respectively, while 2 percent of the respondents were above 50. This outcome indicates that more than half of the respondents are in the range of productive age group.

**Table 4-3** Educational Background of Respondents

Educational Background	Frequency	Percent	Valid Percent	Cumulative Percent
Diploma/ TVET	72	38.3	38.3	38.3
First Degree	91	48.4	48.4	86.7
High school completed	25	13.3	13.3	100.0
<b>Total</b>	188	100.0	100.0	

**Source:** The researcher's survey result (2019)

Table 4-3 indicate that majority 48 percent of the respondents were first degree holders, 38 percent of them diploma/TVT and 13 percent are High school complete, respectively. None of the respondents were below High School complete. Because of the nature of the organization majority of the staff are educated which means they have diploma and degree. This implies that they can understand and fill the questionnaires without assistance and can better explain about the practices and challenges of kaizen practices.

## Assess the effectiveness and challenges of kaizen implementation.

**Table 4-4** Years of Service of the Respondents

Years of service	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 3 years	25	13.3	13.3	13.3
Valid 3-5	47	25.0	25.0	38.3
6-10	80	42.6	42.6	80.9
Above 10 years	36	19.1	19.1	100.0
Total	188	100.0	100.0	

**Source:** The researcher's survey result (2019)

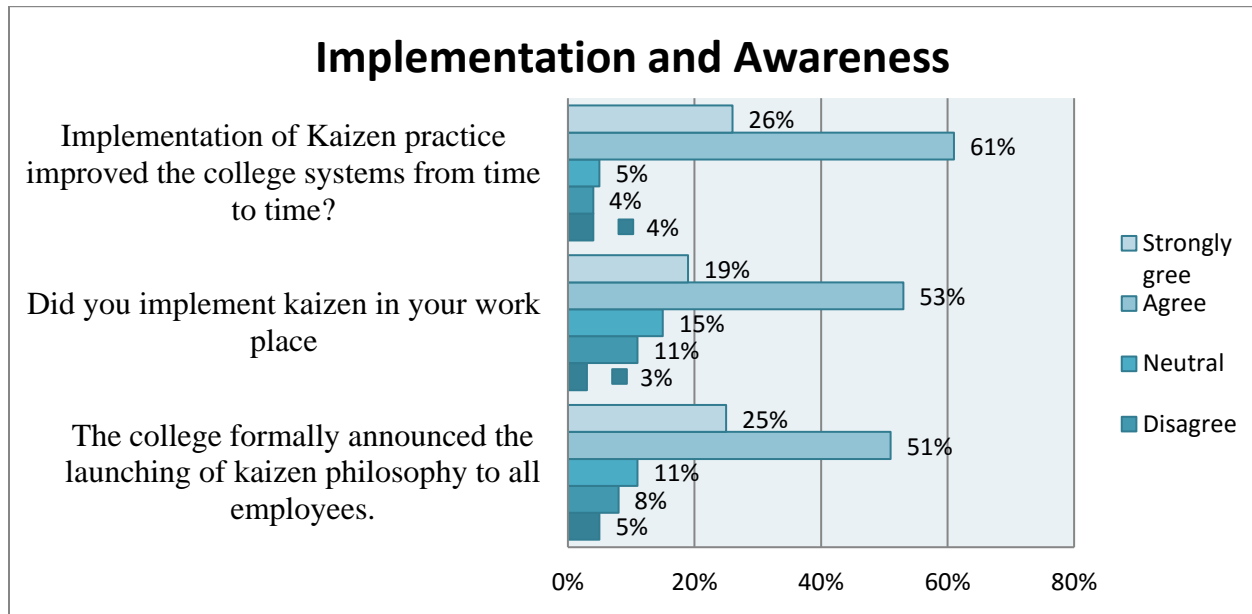
Table 4-4 indicates that 13percent of the respondents have served in the college for less than 3 years, 25 percent of the respondents for 3 - 5 years. 43 percent of the respondents have served the college for 6 - 10 years while 19 percent have served the college for more than 10 years. The table shows the work experience of the sample population overall, 62 percent of the respondents have a work experience more than five years. Most of the respondents which can help the researcher obtain at most accurate information with the change/improvement obtained from kaizen tools implemented in the college.

### 4.3 Data Analysis and Interpretation

Here, data analysis has been conducted based on the responses obtained from the questionnaires and the responses obtained from the interview results were used as a supplementary for strengthening the data analysis and interpretations. (**Level of agreement:** 1= highly disagree; 2 = disagree; 3 = undecided; 4 = agree; 5 = highly agree)

# Assess the effectiveness and challenges of kaizen implementation.

## 4.3.1 Implementation of Kaizen and Awareness creation



**Source:** The researcher's survey result (2019)

**Figure 4-1** percentage of respondents on kaizen implementation and awareness level

This section is aimed at assessing the extent to which staffs are aware about the implementation of kaizen. As it can be show from the figure 4-1, 76 percent of the respondents know their college's has been practicing kaizen as continues improvement system for years. This implies employees know where the college is and where it is striving to proceed. It is also coined from the management of the college that, the company publicizes to its employees the implementation of kaizen when it's launching the first time and operational of the five S through the college internal communication. Also the figure show that 12 percent of respondents disagreed about the formal announcement of the implementation of kaizen in their college. From this respondents majority of them are less than six years of service for the college.

According to (Phillip, 2010), the message of continues improvement has to be communicated to three distinct audiences: employees, customers and stakeholders. To build anticipation and enthusiasm, employees must be energized to transform to a kaizen environment. Employees cannot be expected to be productive and effective if they do not receive accurate and relevant information. Though it is not at its sufficient level, the college communicated the launching of kaizen practices to its employees.

## Assess the effectiveness and challenges of kaizen implementation.

Many of the respondents which are 72 percent are implementing kaizen 5s eliminating through focusing on removing all unnecessary items from the workplace, arrange remaining items to easily select, use, and return to their proper location, cleaning up the place disorder and removing the trash and also put in place to make it easier for continues improving in their work place. The five S is the tools of kaizen which is proper use of resources and spaces by ordering them and void the unnecessary one. This makes the working place clean and ready for proper use. 13 percent of the respondents are not practicing kaizen as continues improvement in their work place. And 15 percent of the respondents are neutral to answer whether they are implementing kaizen in their jobs or not.

As indicated in the reviews of related literature, clearly states that the strategy, changes and culture that are established within an institution as a result of the kaizen philosophy, should be communicated clearly and directly from top management to all employees and customers. When employees participate in such activities as housekeeping, muda elimination, and review of standards, they immediately begin to see the many benefits brought about by this kaizen and they are first to welcome such changes. Through such a process, their behaviors as well as attitudes begin to change.

On the basis of figure 4-1 (Implementation of Kaizen practice improved the colleges systems from time to time) 87 percent of the respondent agreed that kaizen is improving the systems by incremental changes through time to time. Still there are respondents which 8 percent disagreed that there is an improvement in the college. These indicate that the implementation of Kaizen increased the practice of Kaizen improving the Factory's systems from time to time

The student researcher asked the manager about the kaizen implementation in the college. The manager replied that kaizen is well adapted by most of the employees of college. However, at the beginning of the implementation it was not easy task to get the full consent of employees to practice kaizen. Most of the workers considered kaizen as addition burden for them in addition to this while the engage in doing the 5S, mopping their working area, arranging and ordering the

## Assess the effectiveness and challenges of kaizen implementation.

working place some other staffs don't have the courage to clean and ordering their working place. The success of kaizen implementation is through gradual which mean time taker. The college has not succeeded at all that means more of less good but on going.

The employee were also replies that, at the beginning, it was difficult to change the tradition and penetrate the deeply-rooted hierarchical structures in addition to this managers' misconception about continuous improvement was also another problem that hinders the application of kaizen but the culture of the college has been gradually changing from the existing before.

### 4.3.2 Management commitment and communication

**Table 4-5** Percentage of respondents on management's commitment to kaizen implementation

Scale	The management is committed to the implementation of kaizen methodology in the college		The company management is committed by providing me with the necessary tools, adequate working space and appropriate...		Implementation of Kaizen improved strong relationship between employees and management.		Top management is responsive in providing feedback for issues raised from employees		There are clear way of communication both upward and downward		The system encourages employees to communicate the management regarding working barriers they face in attaining their job	
	N	Percent	188	Percent	188	Percent	188	Percent	188	Percent	188	Percent
Strongly Disagree	28	52	28	52	5	10	15	28	30	57	36	67
Disagree	55	104	38	72	8	16	46	86	40	75	38	72
Neither Agree Nor Disagree	9	16	9	17	11	20	19	35	8	15	8	15
Agree	6	12	18	33	60	112	15	29	22	41	11	21
Strongly Agree	2	4	7	14	16	30	5	10	0	0	7	13

**Source:** The researcher's survey result (2019)

This section identifies the role and commitment of management in the implementation of continuous improvement and sustaining kaizen philosophy as corporate culture. **Commitment:** according to Meyer and Smith (2000) workers who feel that the organization is committed to them are likely to have a positive attitude. Organizational commitment is an attitude, which exists



## Assess the effectiveness and challenges of kaizen implementation.

between the individual and the organization where it considered as a relative strength of the individual's psychological identification and involvement with the organization.

As indicated in (table 4-5) 83 percent of the respondents do not agreed with the level of commitment of management to the implementation of kaizen and sustain it as corporate culture. Only 8 percent of the respondents agreed that the management is committed to the implementation of kaizen in the college. And also 8 percent are neutral for this matter.

According to Yusuf, 2010 management commitment must be driven by a strong desire to improve the quality all business of a company. Top management must not only give a lead to the rest of the company but also ensure that the necessary decisions and actions are taken. The reason for gaining the commitment of top management to implement the kaizen program is that management has the responsibility to help employees through all the different stages of kaizen. Leadership is the heart and soul of change. Change will not occur without leadership.

Because lack of commitment most of the respondent agreed that there was inefficiency of top management in provision of necessary tools, adequate working place (66 percent). 25 percent agreed that there are enough resources and adequate tools to implementing kaizen and 9 percent of them was neutral. Top management leadership is the degree of which top management sets up kaizen objectives and strategies, provides and allocates necessary resources, contributes in quality improvement efforts, and assesses kaizen implementation and performance. From the discussion, the level of management commitment to ingrain kaizen among employees is not sufficient and this resulted in externalizing kaizen to quality and process division and considers quality as one's division specific duty.

According to Table 4-5(Implementation of Kaizen improved strong relationship between employees and management), the respondent agreed that (76 percent) there is an improvement on the relation between employee and management in the college. One can, from the above discussion, infer that kaizen implementation has contributes to network development between employees and management, improvement in relationship between employees and management.

## Assess the effectiveness and challenges of kaizen implementation.

These have developed the motivation of workers and created sense of belongingness of the employees to the organization and enhanced productivity of the factory

As shown in the above employee opinions and feedback table and figure 61 percent of the respondent responded they are negatively argue the employee opinion and suggestion in consideration and management responsive for feedback and 20 percent of the respondent are positive impression about the employee opinion, suggestion and feedback system and also 19 percent of employees are responded no opinion on suggestion system. The suggestion and feedback system is one of the core principles of Kaizen. The system helps both management and workers to communicate two way communications and it also motivate values for employees. Furthermore as explained in the literature the impact of kaizen in work place or Gemba is the beginning of suggestion system and also employees to communicate operational level issues in two ways (up and down level) and enhance workers morale also suggestion is one the principle of kaizen. Doolen et al. (2003) believes that workers are the most important asset of a company, and that the bottom up participatory process involves management taking the initiative to clarify problems and come up with solutions, motivating and empowering employees to have the information and skills needed to make decisions on a wide range of issues concerning to their own working environment.

Understanding the contribution of communication among members of the college in the overall implementation of kaizen is the objective of this section. The research found out that the existing system is not as such at clear to facilitate communication which can be associated with absence of empowerment, interdependence among divisions.

As discussed above in the literature review part kaizen mean improvement, continues improvement involving everyone in the organization from top management to middle manager then to lower workers; the involvement of workers are helped by using communication. As showed in the above figure and table majority of the respondents that is 70 percent of respondent negatively responded on the good communication with management. However 22 percent of respondents responded positively were as 8 percent of the respondent is neutral. This implies that most of the respondents have negative impression on communication with the management According to (ImaI, 1997)

## Assess the effectiveness and challenges of kaizen implementation.

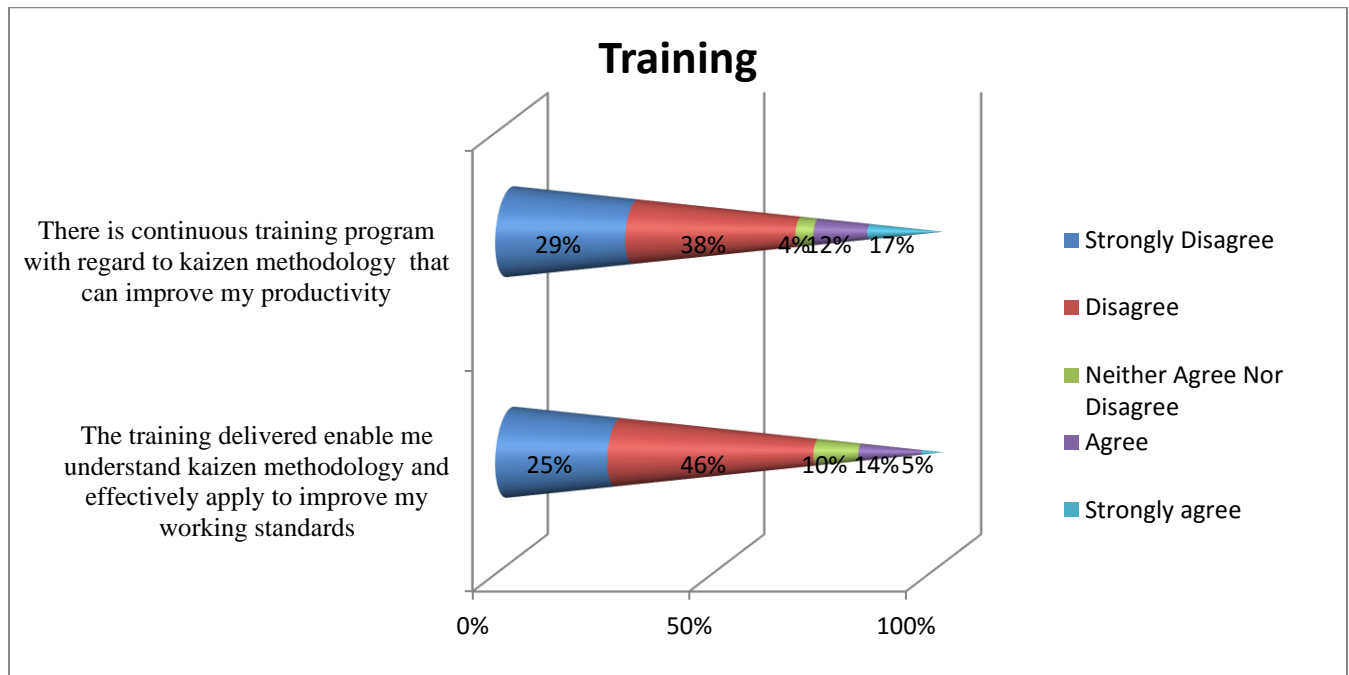
miscommunication may affect misunderstanding of kaizen philosophy, concept, misapplication of kaizen tools and techniques and confusion regarding the employee roles to responsibility of kaizen implementation. Communication is one of kaizen principles used to gathered information and data to solve the root cause of the problem.

Regarding to system encourages employees to communicate the management regarding working barriers they face in attaining their job, 74 percent of the respondents are not comfortable with the existing system of communication. The communication channel is limited to top down with no upward and diagonal communication. It is only limited to escalating issues but with no status update or valuable response from the management. 18 percent of the respondents agreed that the existing system encourage them to communicate with management and getting responses. And also 8percent respondents are neutral to response this matter.

As discussed on literature review one of the biggest principles of the kaizen approach is the ability to work in teams. Each department is considered a team and they will be responsible for making small changes that impact the organization. Through a continuing team work approach with interactive communications kaizen would improve their organizational capacity, empower employees, improve the quality of workers and add value of the product.

# Assess the effectiveness and challenges of kaizen implementation.

## 4.3.3 Education and Training



**Source:** The researcher’s survey result (2019)

**Figure 4-2** percentage of respondents on kaizen training

Employees’ continuous training and skill development has been the critical factors for generating and sustaining. In view of this, without systematic continuous training and skill development program implementing and sustaining the program might be a challenging issue ( Imai, 1986). Then, the interest was whether or not the Education and Training variable is a factor for successful implementation of Kaizen. As drawn from the literature, poor education and training is obstacle to the development and implementation of Kaizen program. Successful implementation of Kaizen requires managers and employees to have the appropriate knowledge, skills and expertise. Education and training have important roles in securing commitment and behavioral change towards continuous improvement

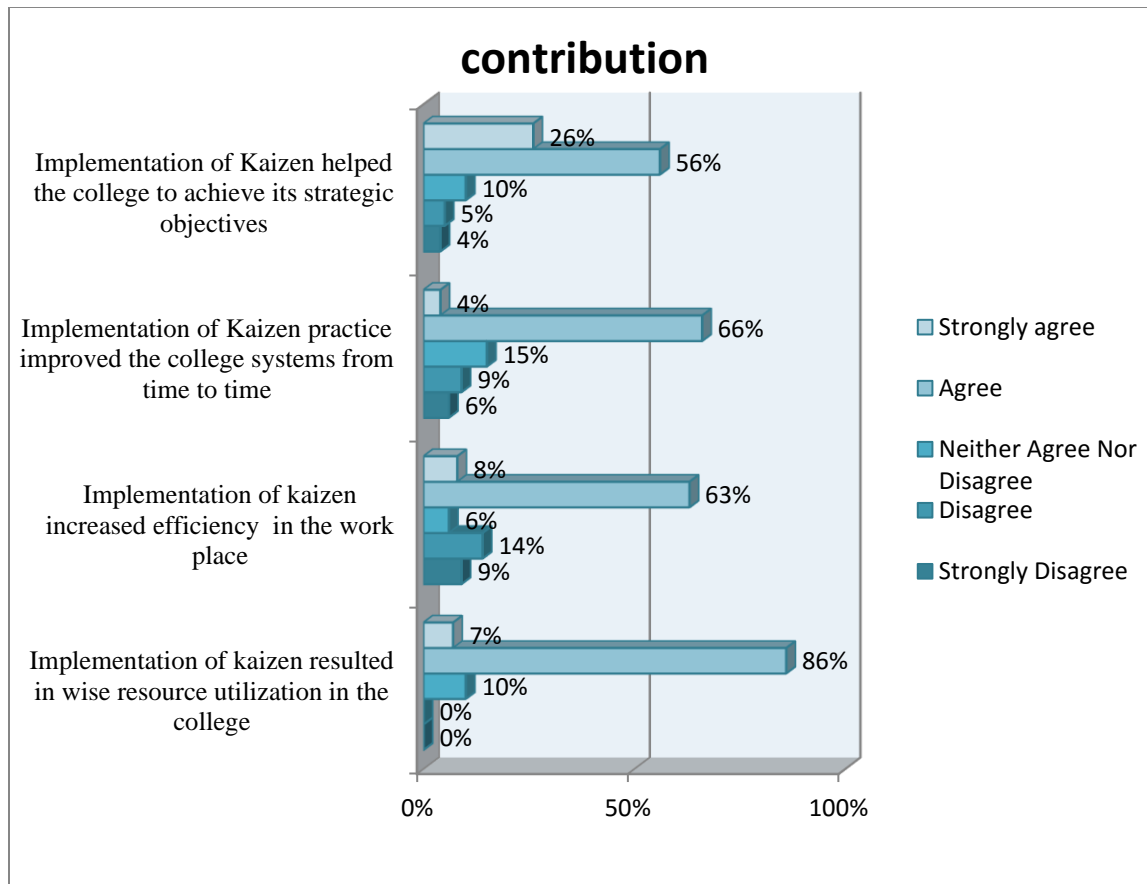
Figure 4-2 indicates that education and training is significant and shows that the respondents agreed that (67 percent) there is not continues training program system that can develop and refresh there knowledge’s. They needed additional education and training for them to be able understands the various Kaizen tools and techniques. As pointed out earlier in the literature review (Chapter 2), education and training have important roles in securing commitment and behavioral

## Assess the effectiveness and challenges of kaizen implementation.

change towards continuous improvement. Education and training force employees to not only acquire the adequate knowledge and skills to perform their jobs, but also to possess specific values, knowledge and skills associated with Kaizen issues and activities. Also the level of training is not enough for staffs to fully engage in practicing kaizen principles in their work place. 71 percent of the respondents are not satisfied with the training level given by the college with regard to kaizen implementation. Besides to this, only 19percent of the respondents agreed that there is continuous training program on kaizen.

### **4.3.4 Contributions of Kaizen Implementation**

## Assess the effectiveness and challenges of kaizen implementation.



*Source: The researcher's survey result (2019)*

**Figure 4-3** percentage of respondents on Contributions of Kaizen Implementation

Figure 4-3 has mainly been prepared to check the outcomes regarding kaizen implementation results in terms strategic objectives and improving the college's systems and efficiency in terms of cost and resource utilization.

The figure indicates on (Implementation of Kaizen helped the college to achieve its strategic objectives.): Regarding this, 80 percent of the respondents responded the implementation of kaizen helped the college to achieve its objectives and made a big contribution. 9 percent of the respondent disagreed about this matter and 10 percent are neutral. This clearly shows that implementation of Kaizen has highly helped entoto polytechnic college to achieve its strategic objectives.

On the basis of figure 4-3 item (Implementation of Kaizen practice improved the college's systems from time to time) 70 percent of the respondent agreed practicing kaizen make an improvement in the college system from time to time. 15 percent of the respondents disagreed on the improvement

## Assess the effectiveness and challenges of kaizen implementation.

of the college and 15 percent of them are neutral. These indicate that the implementation of Kaizen increased improving the college's systems from time to time. As mentioned before kaizen is continues improvements of an incremental changes which need time to see the whole picture.

On the basis of figure 4-3(Implementation of kaizen increased efficiency in the work place) 71 percent responded positively react that kaizen improving efficiency by using less time and money in their work place 23 percent of respondents disagreed about the improvement of efficiency made by kaizen and 6 percent are neutral for this matter. Most of the respondents agreed that implementation of kaizen resulted wise resource utilization in the college by minimized waste and proper used of resource.

This information indicate that implementation of Kaizen in the college has minimized costs, encouraged wise resource utilization in the work place and increased efficiency in majority of the work units in the college through enhancing their understanding about waste, implementation of 7 mudas, 5Ss' and avoiding non value added activities instead of focusing on the important activities,

Therefore, it can be decided that kaizen implementation has helped the college achieve its strategic plan and brought about considerable improvements in light of such parameters as efficiency, cost reduction and wise utilization of time and other resources. This implies that management and employees believe kaizen is necessary to improve the organization work place. If it done correctly kaizen also helps to improve work place, eliminate hard work and teach people how to perform best of their capability and reduce waste of manufacturing process

### **4.3.5 Challenge and problem solving**

Even though many organization understand the need to implement kaizen event at their workplace not all companies are successful with their implementation. The reason is because managing kaizen activities is not an easy task, organization workers has identified challenges to sustained kaizen implementation events such as management commitment, communication, job responsibility, application of kaizen training, good team work and motivation.

## Assess the effectiveness and challenges of kaizen implementation.

Scale	lack of motivation are challenge for kaizen implementation		Lack/ weak of management commitment		Lack of coordination and communication with in kaizen implementation process		There is a system to solving the problems while implementing kaizen		The college has been use kaizen methodology to tackle the challenges	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Strongly Disagree	16	8	18	10	0	0	24	13	20	11
Disagree	20	11	14	7	15	8	76	40	145	77
Neither Agree Nor Disagree	12	6	0	0	24	13	41	22	23	12
Agree	122	65	156	83	100	53	47	25	0	0
Strongly Agree	18	10	0	0	49	26	0	0	0	0

**Table 4-6** percentage of respondents on challenge of kaizen implementation

*Source: The researcher's survey result (2019)*

As showed in the above table majority of the respondent responded 74 percent are positive impression on lack of motivation are challenges for kaizen implementation process, 83 percent positively responded on in the college there is lack of management commitment and also 79 percent respondent responded positively with in kaizen implementation process there is lack of coordination, communication and corporation within the department. This implies that lack of management commitment, communication and coordination is the most challenges for kaizen implementation process.

The poor performance experienced by most improvement program implementers is mostly caused by fading commitment and sponsorship of top management. Since improvement programs cut across functional departments meaning the deployment of it must be overlook by the overall boss who has the power to give instruction to every functional department. To enable top management commitment glow till the end; the improvement program must be considered the business priority in order for it to get the top management support it deserves.

Kaizen is continuous improvement it need continuous implementation process not start end process. For kaizen implementation process management commitment is needed and full of



## Assess the effectiveness and challenges of kaizen implementation.

motivation and coordination is necessary without systematic continuous training on the subject matter implementing and sustaining the practice might be a challenging issue.

On the above table 17 percent were responded negatively on management commitment is one of the challenges to implement kaizen, based on lack of communication and coordination 8 percent of sample respondent have a negative impression on through lack of active communication and coordination the implementation in the work place and 13 percent were neutral. 19 percent of the respondent disagreed on lack of motivation and the rest 6 percent were neutral on motivation

Therefore this can be concluding according to kaizen principles, workers have to thoroughly understand kaizen principles and also believe it is an effective management tool. So they need to believe in the ideas of Kaizen and try to obtain the small goals in order to achieve the overall success. A strong commitment to the disciplines and kaizen methods will prove success for a college and also doing by PDCA wheel the overall activity can be archived.

According to (Asayehegn D. , 2013)kaizen has to be deeply ingrained in the minds of both workers and managers. It involves process-oriented thinking; is people-centered; is directed at people's efforts based on a teamwork approach; involves a change of attitude; shows commitment to improvement; involves the entire workforce; and assumes that every worker has an interest in improvement running across functional responsibilities.

According to the officials, it needs commitment of the management and staff to generate internal capability of college and preparing professional teams. The following points are stated from interviews respondents. They point out to solve these problems:-

- There is a need to change the traditional culture of the staff and creating acceptance the techniques of kaizen by penetrating the structure of the organization.
- Preparing professional team to facilitate training, follow up and evaluation of performance of the staff.
- Setting objectives concerning continuous improvement and the necessary measures to achieve them.
- A need to educate and instruct each employee in order to be able to use the techniques of continuous improvement.

## Assess the effectiveness and challenges of kaizen implementation.

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- A need to give recognition for results obtained by organizational staff concerning continuous improvement.
- A need to promote and give awards for hardworking staffs and improve the working environment.
- Creating better communication and good relationship between staff members and the management team. Additionally there is a need give regular performance feedback

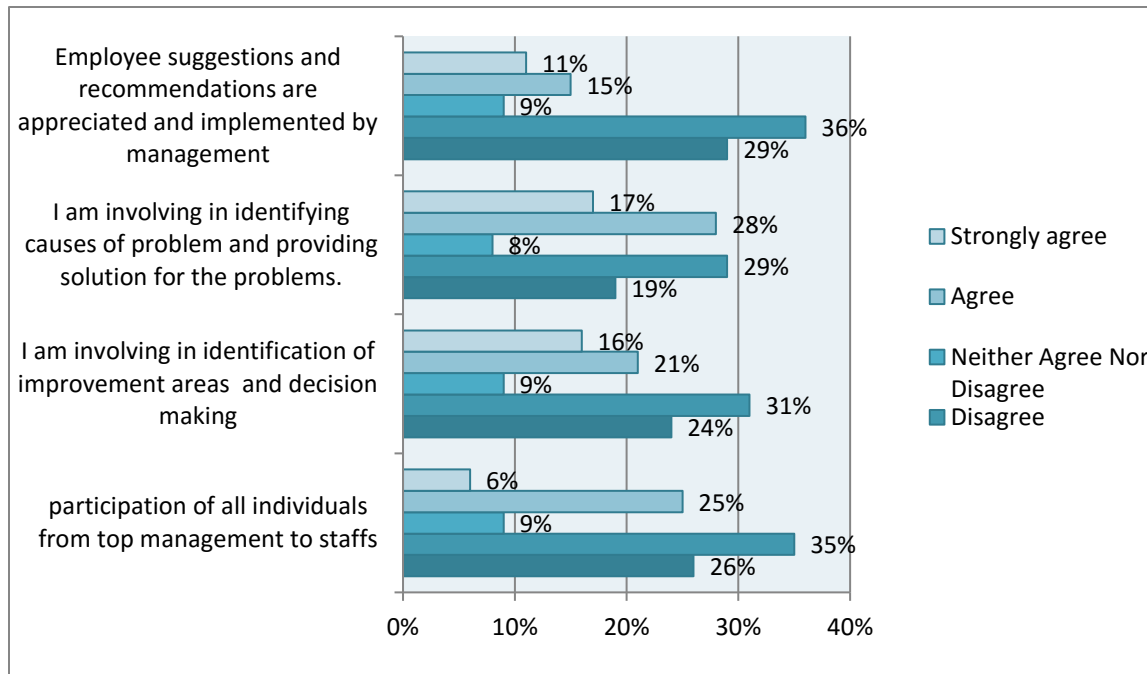
Since kaizen is a management philosophy that emphasizes problem-awareness and provides clues to identifying problems, organization needs to take the time to review their performance and determine their strengths and weaknesses. Employees should be ready to utilize the kaizen process tools and methods to make the problems of their organization visible, and then use formal root analysis to identify and correct the problems at the source.

Most of the respondents disagreed there is a system to solving the problems while implementing kaizen. But 25 percent of the respondent agreed that there is an existing system to solve problem and come up with solution. 22 percent were neutral for this matter. Also the respondent disagreed that the college used kaizen methodologies to solving problems while implementing kaizen. The respondents are reactive and waiting for directions from their supervisors in dealing with problems occurred.

### **4.3.6 Employee involvement and participation**

Kaizen can be implemented by improving every aspect of a process in a step by step approach, while gradually developing employee skills through training education and increased involvement resulting in organizational improvement

## Assess the effectiveness and challenges of kaizen implementation.



**Source:** The researcher's survey result (2019)

**Figure 4-4** percentage of respondents on Employee involvement and participation

Here the participation of all members of the college towards implementation of kaizen in the college is assessed. Respondents are provided with seven statements to assess the participation and involvement.

As it can be shown in the (Figure-4-4), more than 60 percent of the respondents don't agree that all members of the college are involving in the practice of kaizen. 30 percent of the respondents agreed that all employees are involving and 8percent were neutral. As discussed above in the literature review part kaizen means improvement, continues improvement involving everyone in the organization from top management to middle manager then to lower workers; the involvement of workers are important to the effective practice of kaizen in the college.

Everyone is expected to participate, analyzing, providing feedback and suggesting improvements to their area of work. Employee should be empowered to participate fully in the improvement process taking responsibility, checking and coordinating their own activities. Management practice allows and facilitates this. With regarding to the respondent of involvement in identification of improvement area and decision making 54percent of the respondents don't agree that they were involving in the improvement area and decision making on kaizen process.30 percent of the

## Assess the effectiveness and challenges of kaizen implementation.

respondents agreed they were involving in improvement area and decision making some how and 8 percent were neutral for this context.

In kaizen environment and culture when an employee make error in his/ her job it is not seen as an event to blame, but it seen like a chance to find out what went wrong with the process. Kaizen practitioners spend a lot of time to measure customer satisfaction and error rates. They also make meeting and opportunities to discuss a possibility for improvement.

As indicted in figure 4-4 the respondents of 47 percent were disagreed they were involving in problem identification and proved solution at their job. But 44 percent of the respondent agreed that they were involving in problem identification and providing a solution in the process and 8 percent were neutral. The respondents are reactive and waiting for directions from their supervisors in dealing with problems occurred. Thus, kaizen focused on incremental improvement rather than exact solution to problems. Small improvement in kaizen makes it easier to implement. Since most of the improvement techniques come from employees they find the easier process to adjust and the resistance to change is less. In fact people tend to enjoy such a change the way in which kaizen principle help to have competition. Kaizen philosophy in work it helps to pressure employee participation in decision making process.

This implies that the organization does not follow up employees whereas when kaizen were implemented worker involvement is the basics. According to Dysko (2011) also argues one of the competitive “weapons” for Japanese companies is the involvement of employee to their human potential in the maintenance of implemented changes in Gemba Kaizen.

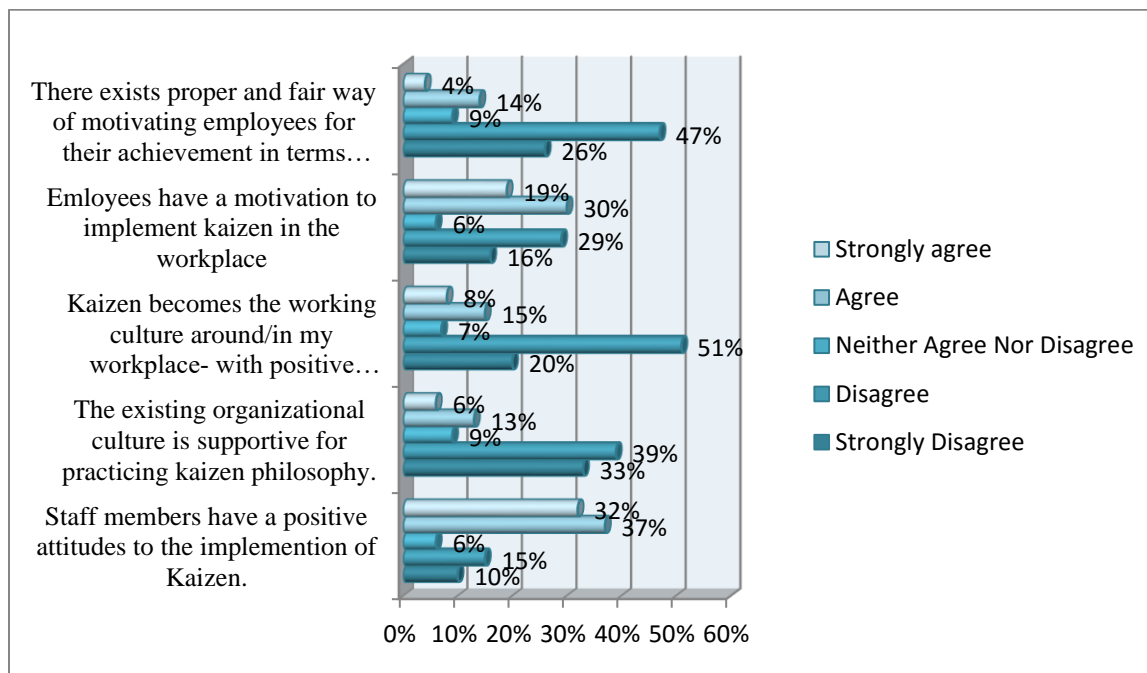
The suggestion system is an extension of individual oriented Kaizen. (ImaI, 1997) p. 10) further narrated the core benefit of suggestion system is a moral boosting benefit of positive employee participation and developing Kaizen minded and self-disciplined employees. He also associated the Japanese style suggestion system as one of the key differences with the Western approach, which emphasis on the economic benefit and financial incentives of the system. As shown in the above figure (4-4) respondents agreed employee suggestion and recommendations are encouraged and implement which is 26 percent. But 64 percent were disagreed and 8 percent were neutral.

## Assess the effectiveness and challenges of kaizen implementation.

According to (Jeffery, 2006) a study conducted on Toyota car manufacturer with regard to employees' suggestions, out of the total 75,000 suggestions in 2009, more than 97 percent were implemented. This shows employees are fully engaged in the continuous improvement encouraged by the management action inculcating their suggestions and implementing. In the case of the Entoto polytechnic college, although most of the respondents agree the management is not appreciating and implementing those ideas as shown in the diagram above. It can be inferred that employees don't forward improvement and problem resolution ideas due to the fact that the management won't practices them

The student researcher asked the management on the interview about employees' involvement on kaizen implementation and they responded that employees involvement in implementing 5s and muda eliminating is through focusing on removing all unnecessary items from the workplace, arrange remaining items to easily select, use, and return to their proper location, cleaning up the place disorder and removing the trash and also put in place to make it easier for continues improving and finally initiate employees to think of ways about eliminate effort in maintaining an area, this is how the management describe the involvement of employee in kaizen program.

### 4.3.7 Employee attitude and motivation



**Source:** The researcher's survey result (2019)

## Assess the effectiveness and challenges of kaizen implementation.

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**Figure 4-5** percentage of respondents on Employee attitude and motivation

Organizations have different working environments, work attitudes and leadership styles, which influence the implementation of the kaizen approach (Phillip, 2010) Culture is a primary determinant of the institutional environment. Before embarking on a quality revolution, an institution must determine whether its culture offers an environment that is conducive to continuous improvement. If not, the culture must be changed. Institutional culture is a key means to communicate the goals of the institution and the appropriate behavior in attaining those goals.

In assessing the level of employees' attitudes towards a positive mindset and accepting kaizen, 69 percent of the respondents answered there have positive attitudes with in employees in order to implement kaizen philosophy. 25 percent were disagreed and 6 were neutral. Most of the respondent disagreed that the current organizational culture is supportive for kaizen implementation process. 20 percent were agreed the existing culture is good for kaizen process and 8 were neutral.

In contrast to the above point of creating favorable culture for practicing, The College is mainly characterized by lack of initiative and commitment among employees and the management to own the kaizen as their own duty and strive for continuous improvement. Rather than providing suggestion for improvement members focus on reasoning. Taking kaizen as additional burden rather than quality improvement system is adversely impact the practices of kaizen.

Organizational culture has several essential components i.e. organizational values, leadership, and the reward and recognition structure of the organization. The reward system reflects the organizational philosophy, democratic and innovative or autocratic and bureaucratic. Promotion and rewards reinforces employee commitment to organizational values and to the organizational culture. Reward and recognition have various functions and can be valuable tool at organizations on their road for total quality management. It shows the individuals or the teams that they are on the right track toward continuous improvement. Recognition as feedback can come from supervisors, other teams, internal customers in the organization, or external customers in the marketplace, Kaizen philosophy processes demand empowered employees, team players and cross functional activities.

## Assess the effectiveness and challenges of kaizen implementation.

This section briefly assessed one pillar of kaizen i.e. employee motivation and recognition in bringing about continuous improvement. As Imai stated staff motivation and recognition is one pillar of kaizen that can affect the overall organizational effectiveness. In the above figure indicated (Figure-4-5), 45 percent of respondents stated employees are not motivated to the implementation of kaizen. 48 percent of the respondents agreed employee was motivated to implement kaizen in their jobs. The existence of fair and proper way of motivating employees is not acceptable by more than 73 percent of the respondents. And it can be inferred that though, kaizen has been implemented some years in the college, Entoto Polytechnic College doesn't have proper way of motivational and recognition plan staffs for their contribution and this can be considered as a source for the inconsistency of proactive manner of employees towards continuous improvement mindset.

Reward and recognition can motivate those individuals and groups to continue their active participation in the organization. It will also create a positive environment for various teams to compete against each other and these give a 'win-win' situation between the organization and employees.

## CHAPTER FIVE

### 5 SUMMARY, CONCLUSION AND RECOMMENDATION

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*This chapter deals with summary, conclusions and recommendation of the research. Accordingly, the first section gives summary of major findings. The second section presents the conclusions. The last part presents potential recommendations that the researcher believes could be good for the college and any other beneficiaries.*

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#### 5.1 Summary

This study dealt with the effectiveness and challenges of Kaizen implementation at Entoto polytechnic college. The research thus aimed at assess the actual implementation of kaizen and identifying challenges encountered in its implementation at the college. In order to answer the research questions and address both general and specific objective of the research, the researcher employed descriptive research methods to collect primary and secondary data. Therefore, based on the results of quantitative research, and the findings of the qualitative research; the researcher drew conclusions by putting them together in the light of the objectives of the research.

The major findings are organized according to the basic questions: Implementation of Kaizen and awareness, management commitment and communication, education and training, kaizen contribution, challenge and problem solving, employee involvement and participation, employee attitude and motivation with regard to positive mindset.

In the findings and results of the study, the implementation status of kaizen strategy and awareness was assessed using some indicators. The first indicator was whether or not the college formally announced the launching of kaizen philosophy to all employees. Accordingly, about 173 (76 percent) of the respondents were in a position of a positive agreement. Most of the respondents 135 (72 percent) were agreed that they was practicing kaizen in their job. Due to the implementation of kaizen, the college created conducive environment and then time was saved, some problem were solved, after the implementation: conducive, visible and safe environment was created. The work place was re-arranged and all materials were situated in a clearly visible area and the garbage was prepared and situated in specified areas. Because of sustainability some respondent disagreed those changes are not made in all areas. This all indicates kaizen philosophy



## Assess the effectiveness and challenges of kaizen implementation.

made a change time to time in the college 163 (87 percent). To effectively apply the 5S System, Juhari, Abidin, and Omar (2016) suggest that communication for 5S, training for 5S, reward and recognition for 5S and top management support for 5S are vital factors that influence employees' motivation in the implementation of the 5S System.

Some 156 (83percent) of the respondents were do not agree with the level of management's commitment to kaizen Philosophy in the college wide and sustaining it as corporate culture. Management commitment is manifested by empowering individuals to make job related decision, provide them with the necessary resources, train them, motivate them, and communicate updated information as well as providing them with on time solution for escalated issues. (Fiocco, 2007)Points out that some kaizen programs have failed in the implementation due to negligence and reluctance of top management to delegate power and responsibility to subordinates. Lack of top management commitment in maintaining kaizen as corporate culture is also one feature observed in college. According to the study conducted by Garcia-Sabater and Marin-Garcia (2011) management involvement, clear objective setting and measurement, active workers involvement, existence of cross-functional teams, and clear organization structure are among the factors contributing to the success of Kaizen implementation.

The respondent also agreed there were poor communication channels both upward to downward or diagonal. (tekelu, 2017)Effective communication contributes to quick and effective execution of tasks while it also improves decision-making and teamwork. Inefficiency communication system in terms of: delay response from management, one directional communication (top-down), unclear reporting templates are contributing negatively for the ineffective practices of kaizen

Though majority of the respondents agreed that they obtain little training on basics of kaizen and there were not continues training program that can refreshing and develop their knowledge and train the new employees, more than 134 (71 percent) of them don't agree that the level of training doesn't enable them to practically implement and improve their working standards. Training and education provide the necessary skills and knowledge – the ability to make it happen. It is an investment that needs to be made. Entoto Polytechnic College was implement kaizen without delivering the necessary and sufficient level of training and that contributed to the ineffectiveness of kaizen practices. In fact the college is one of TVET Cluster Center that has a training center to

## Assess the effectiveness and challenges of kaizen implementation.

support SMEs in Gulele Sub-city for decked. (tekelu, 2017) Training and education provide the necessary skills and knowledge – the ability to make it happen. It is an investment that needs to be made. Ethio telecom starts to implement kaizen without delivering the necessary and sufficient level of training and that contributed to the ineffectiveness of kaizen practices.

According to the respondents 153(81 percent), implementation of kaizen in Entoto Polytechnic College has contributed to meeting its strategic objectives. Thus, implementation of Kaizen has increased the practice of improving most of the college systems from time to time and it contributed a lot to every department's improvement through reducing cost, applying wise resource utilization and through avoiding non value adding jobs and increase work efficiency. According to (Hailu & Habtamu, 2019)They were: reduction of costs, improvement of employee initiation to do jobs, improvement of modification works through innovation and improvement of profit to some extent with variation. In addition, it has been observed that the improvements achieved were not continued in the same fashion consistently. It also has been observed that the initiation of the management and many employees had declined throughout the implementation period of Kaizen principles

More than 75 percent of the respondent agreed lack of management commitment, motivation and coordination and communication with department are the challenge for practicing kaizen sustainably in the college. According to some official lack of employee motivation, continence training, and proper way of supporting and recognition and employee attitude also the challenges that were faced for the past many years. Employees are building an attitude of reactive approach to problems rather than solving in a proactive manner. (Hailu & Habtamu, 2019) Study showed lack of continuous training on Kaizen implementation and complexity of paperwork after Kaizen implementation. In addition, some respondents added additional challenges such as inability to reduce costs as needed, inconsistency in employee motivation through award, decline of employee morale through time and lack of cross-functional team spirit for proper design and innovation. Moreover, the challenges include: lack of regular participation of top management, need of all employees to be motivated through award, unnecessary motion within the factory, lack of on-job training for technicians, and inconsistency in the usage of Kaizen toolbox. Thus, it has been

## Assess the effectiveness and challenges of kaizen implementation.

observed that since there was inconsistently in Kaizen toolbox implementation, the challenges are expected to be persistent.

More than 114 (60 percent) of the respondents stated that college wide participation is not practiced in college. Due to late responses from management and failure to implements positive suggestion, 90(47 percent) of respondent were disagreed participate in problem identification but 80(44 percent) respondent agreed they were participating but feedback that gets from management is discouraging.

Organizational culture can have a positive effect on competitive advantage, increased productivity and performance. Culture of kaizen in the college is not built with regard to building and enhancing trust, motivation, and serious employee empowerment through genuine participation, job security, and equitable compensation; 137(72 percent) of the respondents are dissatisfied with the existing motivational schemes in the college. Absence of fair and equitable reward for suggestions as well as accreditation together with high subjective evaluation contributed for the dissatisfaction of employees to internalize and own kaizen management philosophy. (tekelu, 2017) Study that kaizen requires a turnaround in corporate culture as compared to the old transitional form of management in which the top managers' gives order and the employees simply obey them. In a full kaizen program the organizational chart is more flattened and there is a shared responsibility between managers and employees and this will eventually resolve quality problems faster and easier because everyone will be responsible for their activity

### **5.2 Conclusions**

The study was conducted to assess the effectiveness and challenges of kaizen implementation as management system in the case of Entoto polytechnic College. It considered seven major variables and identified their level of practices and major challenges encountered throughout their implementation. Therefore, preparing to the finding deduced from the study, the following conclusions were drawn,

Majority of the respondents were female in that most of them have working experience above 5 years having an academic status of Diploma and BA/B.Sc. degree. From their working experiences and academic status, it can be concluded that, respondents can tell what sort of improvement did

## Assess the effectiveness and challenges of kaizen implementation.

Entoto Polytechnic College obtained through the implementation of kaizen. Kaizen implementation in the college has been linked with and hence helped the college to achieve its strategic objectives. The finding that there is improvement in the practice of the college systems from time to time and environment as a result of kaizen implementation leads to the conclusion that kaizen implementation can be taken as an enabling factor to bring about such outcomes as structure and work process.

As of the start of the implementation of kaizen, the use of the 5s and 7 mudas has enabled the college to highly improve its working environment in terms of creating clear areas, in eliminating long bureaucratic chains, in time consumption and in reduction of unnecessary work flow process at the college. In addition to the above major changes in the college as a result of kaizen implementation, considerable improvement in process has been achieved through reduction in cost, wise utilization of resources and increased efficiency though time to time.

The degree of top management commitment is not at its desired level. Kaizen is a management approach that brings about quality awareness in all organizational processes. For kaizen to be effected in its entirety, it is imperative that the top management should be committed to empower the employees by delegating sufficient authority for them to make both individual and collective decision. Management commitment is a vital pillar for practicing and sustaining the culture of kaizen, management of the college doesn't give due concern for the proper implementation and its sustainability. The findings of this research as well as the one reported in literature supports the idea that the management of the college has a major role to play in terms of ensuring a culture which permits every member of the organization to be involved and contribute to continues improvement, as the involvement of employees in detecting and monitoring the quality performance requires a decentralized organizational structure. This structure permits for innovation as it permits everybody in an organization to seek solution to a particular problem.

Effective communication contributes to quick and effective execution of tasks while it also improves decision-making and teamwork. Inefficiency communication system in terms of: delay response from management, one directional communication (top-down), unclear reporting templates are contributing negatively for the ineffective practices of kaizen. Inefficient

## Assess the effectiveness and challenges of kaizen implementation.

communication system in the college resulted in poor practices of kaizen which hinders clear flow of information upward, downward as well as lateral. These brought a bureaucratic nature of administration in the college rather than continuous improvement.

The college started the implementation of kaizen after delivering training for employees, it is not sufficient level and on continuous basis which contributes for ineffectiveness of the system.

Lack of motivation both employee and management, lack of management commitment and lack of communication and coordination among departments are the major challenges for the college. Also employees discourage to identifying problems and are a part of solution in the process because management doesn't gave feedback and implement employee suggestions.

Participation is one critical factor in the implementation of new management philosophy like kaizen. It can be concluded from the study, some employees are considering kaizen as additional burden thrown by the management rather than improving the system for the reasons mainly attributed to minimal involvement. Also an employee has limited involvement on improvement area, problem solving and decision making.

Employees had a positive attitude about the implementation of kaizen but there was limitation to practice as an organizational culture. There isn't fair and equitable reward for suggestions as well as accreditation and subjective evaluation.

### **5.3 Recommendations**

Based on those findings of the research and conclusions drawn from them, the researcher suggests the following possible and plausible recommendations.

Fundamental requirement is a sound improvement policy, supported by plans and facilities to implement it. Management of Entoto polytechnic college must take responsibility for preparing, reviewing and monitoring the policy, plus take part in regular improvements of it and ensure it is understood at all levels of the organization.

## Assess the effectiveness and challenges of kaizen implementation.

Effective leadership starts with the development of a mission statement, followed by a strategy, which is translated into action plans down through the organization. These, combined with a Kaizen approach, should result in continuous improvement, these can be done through:

- Developing clear and effective strategies and supporting plans for achieving the mission and objectives. Leaders need to work on maintain current standard and strive to improve those standards by coordinating continuous improvement and working together with them.
- Leaders of Entoto polytechnic college personal involvement, owning kaizen and acting as role models for a culture of continuous improvement.
- Besides to continuous improvement, the company needs to foresee other approaches which can be practical together with kaizen.
- Reviewing and improving the management system of Entoto polytechnic college in which creating an environment where employees build trust on the management by being responsive for their concerns maintain the participation of all employees through implementing those constructive suggestions.
- Management of the college should communicate, motivate and support employees and encourage effectively their participation. Establishing a platform for the proper integration among departments and eliminating those barriers that inhibit the motivation and productivity of employees in practicing continuous improvement like meeting and unfair motivational schemes

Employees cannot be expected to be productive and effective if they do not receive accurate and relevant information. Communication has a direct influence on the productivity and performance of employees. Effective communication increases employees' level of trust and improves problem solving capacity. Communication is essential for the entire empowerment concept. Creating opportunities for participation whilst considering the needs of employees are conducive to effective communication. Revisiting the organizational structure of the college to reduce the chain of command for effective communication, In addition, the company needs to have clear reporting templates that show achievements. Furthermore, the college needs to create platform to integrate action plans and communication among departments in such a way that doesn't linger problems

## Assess the effectiveness and challenges of kaizen implementation.

and facilitate team working with the sense of organizational commitment and synergetic mentality among them.

Train and develop both managers and employees - Managers must understand the processes they manage as well as the basic concept of systems optimization. Employee training should focus on the integration and appropriate use of kaizen tools and problem solving. In addition the training on kaizen should be on a continuous basis including work specific training to enhance employees' capability and caliber

Management of the college needs to assure that the system is geared towards a situation in which all members of the college are involved in the continuous improvement by which everyone participate with a mentality of improvement as his/her own job not the task of a specific department. Employees and management should recognize and needs to have a mindset, that each employee is involved in running the organization.

The college needs to develop effective motivational schemes that energize employees to persistently participate for taking part in continuous improvement. Give appropriate recognition for employees that show outstanding achievement, provide improvement suggestions as well as articulate variable pay based on performance.

The very first thing management of the college need to work on is understand the existing culture and using the knowledge to successfully map the steps needed to accomplish a successful change. Adaptations in the culture of an institution take a long time and require special attention from management who has to accommodate it as part of strategic management. Cultural change commences with diagnosing the prevailing culture of the institution and adapting this culture to current or proposed strategy. As there is a close relationship between the culture and strategy of an institution, changes in strategy require supportive changes in institutional culture and systems. Sited in office and collecting report weekly/monthly doesn't add value at all, continues improving audit need to be deployed in a holistic manner.

## Assess the effectiveness and challenges of kaizen implementation.

The company needs to work closely with institutions like Addis Ababa kaizen Institute which located on no far from the college till it is capable to manage the effective implementation of the system. Besides to that the college needs to inculcate the success story of other educational sectors that has implemented continuous improvement as management tool and take them as benchmark and customize their best practices according to the existing scenario of the college

### **5.4 Limitations of the Study**

- Lack of comprehensive and systematic study on kaizen and related issues at grass-root levels even at the national level
- Lack of recent literature on kaizen
- Lack of books and other related reference materials on the Ethiopian case and on Kaizen
- Respondents who biased responses
- As long as the research was conducted in one specific area of the effective and challenge of Kaizen implementation, the findings of this research cannot be generalized for other organization. Therefore, all those above-stated were the major limitations of the study

### **5.5 Future research direction**

After conducting this research and analyzing different aspects of kaizen implementation events, the following research areas are recommended to be undertaken in the future on similar topic.

- By assessing employee attitude developing continuous kaizen implementation process.
- The efficiency of kaizen implementation in this company and others company
- Improving productivity of company implementing kaizen methods and data Management system.



# Assess the effectiveness and challenges of kaizen implementation.

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# Assess the effectiveness and challenges of kaizen implementation.

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## Appendix- A

### **Jimma University School of Graduate Studies**

#### *Questionnaire to be filled by employees of Entoto polytechnic college*

Dear respondents,

I am post graduate student at Jimma University. The purpose of this questionnaire is to enable me to carry out a research for partial fulfillment of the requirements for Masters of Business Administration (MBA). The research focuses on Entoto polytechnic college with the title of “*Assessing the effectiveness and challenges of kaizen implementation*” The information would be used as a primary data in my case research. Therefore, you’re genuine, honest, and prompt response is a valuable input for the quality and successful completion of the project. Hence, to gather information, I kindly request your assistance in responding the question listed below. This information will be used only for academic purpose and your responses will be treated confidentially. If you have any question(s), please call at +251-983-309656.

Thank you in Advance  
Samerawit Fekadu

# Assess the effectiveness and challenges of kaizen implementation.

## Questionnaire to be filled by employees

### Section 1- Demographic Data

**N.B- you don't need to write your name**

1. Sex            Male ( )            Female ( )
2. Qualification: mark (“√”) on the options provided
3. Age; **18-25** ( ) **26-35** ( ) **35-50** ( ) **Above 50** ( )

Grade	Tick	Grade	Tick	Grade	Tick
Grade 12 & below		BA/BSc		PhD	
12+2 and Diploma		MBA/MA/MSc		Others	

4. Work experience in the company: mark (“√”) on the options provided

Service year	Tick	Service year	Tick	Service year	Tick	Service year	Tick
Below 3 years		3 to 5 years		6 to 10 years		Above 10 years	

***Section two – written answers (please make your response readable and If you want to write more than the space provided you can use the back paper on the next page quoting the question numbers.)***

1. Have you ever been communicated about the implementation of kaizen?

Yes             No

2. Do you implement kaizen in your work place?

Yes

No

3. If your answer for the above question is **yes**, what type of Kaizen tools/ techniques/practices have you applied on your workplace?

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4. Do you like being part of Kaizen participant in your work station?

Yes

No

## Assess the effectiveness and challenges of kaizen implementation.

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5. Please specify the reason for the above question?

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6. What do you essentially need in order to fully implement kaizen in your workplace?

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7. Do you think you and your colleagues have adequate knowledge of continuous improvement?

Yes

No

8. If your answer for question number (7) is “No” please specify the reason.

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9. Do you think management support in every aspect of continuous improving of work? Please specify the reason.

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10. Do you think there is positive organizational culture that can adopt a continuous improvement mindset?

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11. Do you think the practice of kaizen is well understood by the employees and become culture?

Yes  No

12. What challenges did you face in the implementation of kaizen?

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13. Can you mention problems that you face in relation of implementing and sustaining kaizen around your workplace in particular and at the college in general?

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## Assess the effectiveness and challenges of kaizen implementation.

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14. Do you have any suggestion to overcome the problems you have mentioned above or with regard to improving the implementation of kaizen?

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*Listed below are a series of statements that may represent how employees describe the implementation of kaizen and its success and challenges. Please indicate the degree of agreement or disagreement with each statement with respect to your own feelings about the practices of kaizen and its challenges in college. Kindly put (√) under one option you think best suits you or shows your level of agreement with each one of them and using the scale given below:*

- 1- Strongly Disagree**                      **2- Disagree**  
**3-Neither Agree Nor Disagree**    **4- Agree**  
**5- Strongly Agree**

No	The practices and challenges of kaizen					
		1	2	3	4	5
	<b>Implementation of Kaizen and Awareness creation</b>					
1	The college formally announced the launching of kaizen philosophy to all employees					
2	All employee implement kaizen in the work place					
3	Implementation of Kaizen practice improved the college systems from time to time.					
	<b>Management commitment and communication</b>					
4	The management is committed to the implementation of kaizen methodology in the college.					
5	The college management is committed by providing me with the necessary tools, adequate working space and appropriate equipment to perform my duties effectively					
6	Implementation of Kaizen improved strong relationship between employees and management.					
7	Top management is responsive in providing feedback for issues raised from employees					
8	There are clear way of communication both upward and downward					

## Assess the effectiveness and challenges of kaizen implementation.

9	The system encourages employees to communicate the management regarding working barriers they face in attaining their job					
<b>Education and Training</b>						
10	There is continuous training program with regard to kaizen methodology that can improve my productivity					
11	The training delivered enable me understand kaizen methodology and effectively apply to improve my working standards					
<b>Contribution of kaizen implementation.</b>						
12	Implementation of Kaizen helped the college to achieve its strategic objectives					
13	Implementation of Kaizen practice improved the college systems					
14	Implementation of kaizen increased efficiency in the work place					
15	Implementation of kaizen resulted in wise resource utilization in the college					
<b>Challenge and problem solving</b>						
16	lack of motivation are challenge for kaizen implementation					
17	Lack/ weak of management commitment					
18	Lack of coordination and communication within kaizen implementation process					
19	There is a system to solving the problems while implementing kaizen					
20	The college has been use kaizen methodology to tackle the challenges					
<b>Employee participation and involvement</b>						
21	participation of all individuals from top management to staffs					
22	I am involving in identification of improvement areas and decision making					
23	I am involving in identifying causes of problem and providing solution for the problems					
24	Employee suggestions and recommendations are appreciated and implemented by management					

## Assess the effectiveness and challenges of kaizen implementation.

Motivation and attitude						
25	Staff members have a positive attitudes to the implementation of Kaizen.					
26	The existing organizational culture is supportive for practicing kaizen philosophy.					
27	Kaizen becomes the working culture around/in my workplace- with positive mentality of continuous improvement					
28	Emloyees have a motivation to implement kaizen in the workplace					
29	There exists proper and fair way of motivating employees for their achievement in terms practicing kaizen implementation					

**Thank you for your participation**

If you have any suggestion or comment regarding with kaizen practice please write on back of this page



Assess the effectiveness and challenges of kaizen implementation.

Appendix- B

ጅማ ዩንቨርሲቲ  
JIMMA UNIVERSITY  
RADUATE STUDIES PROGRAM  
ADDIS ABABA

የሰራተኛ መጠይቅ

ክፍል 1 የግል መረጃ

1. ጾታ ወንድ----- ሴት-----
2. ዕድሜ ከ 18-25 ( )  
ከ 26-35 ( )  
ከ 36-50 ( )  
ከ 50 በላይ ( )
3. የትምህርት ደረጃ ፤ የ("V") ምልክት ያስቀምጡ

ደረጃ	ቲክ	ደረጃ	ቲክ	ደረጃ	ቲክ
ክፍል 10 እና በታች		የመጀመሪያ ዲግሪ		ፔኬችዲ	
10+1 እና ዲፕሎማ		ሁለተኛ ዲግሪ		ሌላ	

4. በኮሌጁ ምን ያክል አመት አገልግለዋል፤ የ("V") ምልክት ያስቀምጡ

ያገልግሎት ዘመን	ቲክ	ያገልግሎት ዘመን	ቲክ	ያገልግሎት ዘመን	ቲክ	ያገልግሎት ዘመን	ቲክ
ከ 3 አመት በታች		ከ 3 እስከ 5 አመት		ከ 6 እስከ 10 አመት		ከ 10 አመት በላይ	

ክፍል ሁለት: እባክዎን ባለው ክፍት ቦታ መልሱን ይግለጹ

5. በመስሪያ ቤትዎ ስለ ካይዘን መተግበር ተነግሮዎት ያውቃል፤ የ("V") ምልክት ያስቀምጡ  
አዎ-----  
አይ-----
6. በሰራ መደብዎ ላይ ካይዘን ተግባራዊ?  
አዎ-----  
አይ-----

## Assess the effectiveness and challenges of kaizen implementation.

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7. ለጥያቄ ቁጥር 6 መልስዎ አዎ ከሆነ በስራ ቦታው ላይ ምን አይነት የካይዘን መሳሪያዎች፣ ቴክኒኮች/ተግባሮች አከናወኑ?

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8. በስራ ቦታዎ ላይ የካይዘን እንቅስቃሴዎች አካል መሆንዎን ይወዱታል?

ሀ. አዎ-----

ለ. አልወደውም-----

9. ለጥያቄ ቁጥር 8 ምላሽዎ ምክንያቱን ይግለጹ?

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10. ሙሉ ለሙሉ ካይዘንን በስራ ቦታዎ ላይ ተግባራዊ ለማድረግ እንዲሁም ለማስቀጠል አሁን የሚያስፈልግዎት ምንድን ነው?

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11. እርሶ እና የስራ ባልደረቦች ስል ካይዘንን በቂ እውቀት አላችሁ/ ለመልስዎ ምክንያቱን ይገለጹ

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12. የግላገላዎች ድጋፍ ለስራ መሳካት አስተዋጽኦ አለው ብለው ያምናሉ/ ለመልስዎ ምክንያቱን ይገለጹ

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13. በመስሪያ ቤትዎ ውስጥ ካይዘንን የስራ ባህል ሆናል ብለው ያምናሉ/ ለመልስዎ ምክንያቱን ይገለጹ

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14. በካይዘን ትግበራ ላይ የሚያጋጥም ችግሮች ምንድን ናቸው

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15. ችግሮችን ለመፍታት የተሰሩ ስራዎች ይገለጹ

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## Assess the effectiveness and challenges of kaizen implementation.

**ክፍል ሶስት፤** ከዚህ በታች የተዘረዘሩትን ጥያቄዎች በካይዘን ትግበራ ላይ ያለውን ስኬት እና ያጋጠሙት ችግሮች የሚገልጹ ሲሆኑ እርስዎ የሚስማሙበትን ምላሽ በምልክት ይግለጹ

- በጣም አልስማማም -1
- በተወሰነ መልኩ አልስማማም - 2
- ስምምነትም ተቃውሞም የለኝም - 3
- በተወሰነ መልኩ እስማማለሁ -4
- በጣም እስማማለሁ - 5

ቁጥር	ዝርዝር					
		1	2	3	4	5
	<b>የካይዘን ትግበራ እና ማሳወቅ</b>					
1	ኮሌጁ የካይዘን ትግበራ ያሳውቃል					
2	ሁሉም ሰራተኛ ካይዘንን ተግባራዊ ያደርጋል					
3	የካይዘን ትግበራ ኮሌጁ ላይ ከግዝ ወደ ግዜ መሻሻል አምጥታል					
	<b>የሃላፊዎች ቆራጥነትና ግንኙነት</b>					
4	ሃላፊዎች የካይዘን ትግበራ በኮሌጁ ውስጥ እንዲኖር ቆራጥ ሃላፊነታቸውን ይወጣሉ					
5	ሃላፊዎች በሰራይ ላይ ካይዘን ለመተግበር የሚያስፈልግ ቁሳቁሶችን፤ የሰራ ቦታና አስፈላጊውን ነገር ለማቅረብ ይጥራሉ					
6	የካይዘን መተግበር በሰራተኛ እን በሃላፊዎች መሃከል ያለውን ግንኙነት አሻሽላል					
7	የሰራ ሃላፊዎች ከሰራተኛ ለሚነሳጉዳዮች ምላሽ ይሰጣሉ					
8	በኮሌጁ ውስጥ ግልጽ የሆነ መልክት መተላለፊያ ከላይ ወደታች እና ከታች ወደ ላይ የሆነ አሰራር አለ					
9	የኮሌጁ አሰራር ሰራተኞች በሰራ ቦታ ላይ ለሚያጋጥማቸው ነገሮች ለሃላፊዎች እንዲያሳውቁ ያግዛል					
	<b>ትምህርት እና ስልጠና</b>					
10	በኮሌጁ ካይዘንን በተመለከተ ቀጣይነት ያለው ስልጠና ሃላፊነቴን እንድወጣ ይረዳኛል					
11	ስልጠናው ካይዘንን በሰራ ቦታ ላይ በተሳካ ሁኔታ እድተገብር እረድቶኛል					
	<b>የካይዘን አስተዋጽኦ</b>					
12	የካይዘን ትግበራ ኮሌጁ ግብ እና እቅድ እንዲተገብር አስችሎታል					
13	የካይዘን ትግበራ የሰራ አፈጻጸምን አሳድጋል					
14	የካይዘን ትግበራ ያለውን ሃብት በአግባቡ ለመጠቀም አስችላል					
	<b>ያጋጠሙ ችግሮች እና መፍትሄ</b>					
15	የሰራ ተነሳሽነት ማነስ ለካይዘን ትግበራ እንደችግር ይነሳል					
16	የበላይ ሃላፊዎች ተነሳሽነት አናሳ መሆን					
17	የማስተባበርና የግንኙነት ደካማ መሆን					
18	ችግሮችን ለመፍታት የሚያስችል አሰራር ተዘርግታል					
19	ኮሌጁ ካይዘንን እደችግር መፍቻ መሳፊያ ይጠቀማል					

## Assess the effectiveness and challenges of kaizen implementation.

	የሰራተኞች ተሳትፎ					
20	ከበላይ ሃላፊ እስከ ታች ሰራተኛ ድረስ ተሳትፎ አለ					
21	በሰራ ማሻሻያ እና ችግሮችን ለመፍታት ተሳትፎ አለኝ					
22	የችግሮች ምክንያታቸውን የማወቅና መፍትሄ የመስጠት ሂደት ውስጥ ተሳትፎ አለኝ					
23	የሰራተኞች ሃሳብ እዲገልጹ እና በተግባር እንዲያውሉ ይበረታታሉ					
<b>ተነሳሽነትና አመለካከት</b>						
24	ሰራተኞች ካይዘንን ለመተግበር ጥሩ አመለካከት አላቸው					
25	የኮሌጁ አሰራር ባህል ካይዘንን ለመተግበር ምቹ ነው					
26	ካይዘን የሰራ ባህሌ በማድረግ ቀጣይነት ባለው መልኩ ተግባራዊ አደርጋለሁ					
27	ሰራተኞች ካይዘንን ለመተግበር ተነሳሽነት አላቸው					
28	ለጥሩ አፈጻጸም ማበረታች የተዘረጋ አሰራር አለ					

**ለትብብር አመሰግናለሁ**

# Assess the effectiveness and challenges of kaizen implementation.

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## Appendix- c

### **Jimma University School of Graduate Studies**

#### *Interview for employees of Entoto Polytechnic College*

Dear respondents,

I am post graduate student at Jimma University. The purpose of this interview is to enable me to carry out a research for partial fulfillment of the requirements for Masters of Business Administration (MBA). The research focuses on Entoto polytechnic college with the title of “*Assess the effectiveness and challenges of kaizen implementation*” The information would be used as a primary data in my case research. Therefore, you’re genuine, honest, and prompt response is a valuable input for the quality and successful completion of the project. Hence, to gather information, I kindly request your assistance in responding the question listed below. This information will be used only for academic purpose and your responses will be treated confidentially.

## Assess the effectiveness and challenges of kaizen implementation.

### **Interview Guide**

1. When did the college start the implementation of kaizen philosophy?
2. Are there driving forces that urge the college to implement kaizen?
3. What were the major activities done before implementing kaizen at the college?
4. How the college did communicated employees on the implementation of kaizen?
5. What was employees' reaction to the implementation of kaizen?
6. Did employees take training on kaizen and its implementation?
7. What attempts did management of the college made with regard to creating positive mindset among employees to internalize kaizen philosophy?
8. to what extent does the existing system/culture allows every employee to involve in continues improvement?
9. What are the improvements achieved after implementing kaizen process at the college?
10. Does the implementation of kaizen in the college result in organizational success in terms of achieving its vision, mission as well as prime purpose of kaizen implementation?
11. What challenges do the college encountered in implementing kaizen and sustain as corporate culture?
12. Do you work with Ethiopia kaizen institute or any other national/international organizations that work on kaizen to assist the company achieve its objectives?
13. What suggestion do you provide for effective implementation of kaizen?

Assess the effectiveness and challenges of kaizen implementation.