



**ST. MARY'S UNIVERSITY  
SCHOOL OF GRADUATE STUDIES  
INSTITUTION OF QUALITY AND PRODUCTIVITY  
MANAGEMENT**

**INVESTIGATING KAIZEN IMPLEMENTATION  
PRACTICE:  
FAFA FOOD SHARE COMPANY IN FOCUS**

**BY  
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**JANUARY, 2021  
ADDIS ABEBA, ETHIOPIA**

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PRACTICE:**

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**BY**

**NETSANET MEKONNEN**

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## **DECLARATION**

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

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**January, 20201**

## ENDORSEMENT

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

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## **ABBREVIATIONS AND ACRONYMS**

ISO	International Standard Organization
QM	Quality Management
EQA	Ethiopian Quality Award
JICA	Japan International Cooperation Agency
EKI	Ethiopian Kaizen Institute
MS	Management System
QMS	Quality Management system
BAB	British Assessment Bureau
TQM	Total Quality Management
FSMS	Food Safety Management System

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## Abstract

*The purpose of this paper is to examine current status of kaizen implementation, challenges, and sustainability towards implementation of kaizen at Fafa Food Share Company. The study focused on analyzing the achievements, challenges and sustainability of kaizen implementation. To achieve the above objectives, descriptive research design was used, primary and secondary data and also a mixed research approach were used. Purposive sampling method was used to select and specify the number of samples used for the study. Primary data were collected from survey questionnaire, in depth interview and self – observation techniques. Secondary data were collected from different published and unpublished documents. The respondent from different department of the factories have been involved for the questionnaires whereas interview was made with management and supervisors. Observation was done by the help of documentation officer and the researcher has made industrial visit. The data gathered through questionnaire were analyzed using frequency and percentage value of the respondents. Data obtained through interview were qualitatively narrated. The data gathered through questionnaires revealed that kaizen implementation in is not sustained in Fafa Food Share Company because of lack of continuous training system, lack of management encouragement, less management and employee involvement, gaps unavailable in infrastructures and material resources, less budget allocation and lack of active participation are also other factors for the result.*

*From the data analysis, it is found that respondents focused only on 5s implementation of kaizen in the company. And currently the Case company is implementing kaizen in some departments.*

*Finally, the researcher recommended that the sustainability of kaizen implementation needs enough budget and continuous process follow up which includes: strategical planning, performance measurement, and knowledge and change management.*

**Key Words: Kaizen, implementation, sustainability, Challenges**

## **CHAPTER ONE**

### **INTRODUCTION**

On top of providing some background information on the implementation of kaizen in Fafa Food Share Company, this chapter presents description of the statement of problem, objectives, basic research questions, significance, scope, limitation, delimitation and organization of the study are also dealt briefly.

#### **1.1 Background of the study**

The main objective of industries today is to increase productivity through system simplification and incremental improvements by using modern available techniques. Improving customer service, making operation faster, more operation and reduction in costs are challenges faced by most industries today. To meet these challenges many companies in the world searching to improve their ability to compete globally.

Sousa and Voss (2002) mentioned that quality practices are the observable facet of QM, and it is through them that managers work to realize organizational improvements. The quality practices of an organization are defined as the actions and procedures undertaken by a company or organization to ensure the delivery of high-quality service or product.

Quality tools and quality methods are means of accomplishing change (Mirko,2006). They are essential for understanding and practicing quality management. The most fundamental quality tools are called the seven basic quality tools, which are basic for all other tools. These are

: Pareto diagram, Flow chart, Check sheet, Control chart, Histogram, Scatter plot and Fish bone diagram. In contrast, a technique consists a set of tools associated with a solution of a given problem. Benchmarking is an example of technique.

Quality methods indicate what to do. Examples of methods are the PDCA (plan, do, check and act) and DMAIC (define, measure, analyze, improve and, control). (Augsto,2008).

One of the most recognized technique in order to minimize such problems is kaizen-

continuous improvement which was created in Japan and it becomes an important and widely used in various industries. (Admasu ,2015).

Kaizen is a Japanese philosophy for process improvement that. The Kaizen Institute defines Kaizen as the Japanese term for continuous improvement. It is using common sense and is a scientific method using statistical quality control and an adaptive framework of organizational values and beliefs that keeps workers and management focused on zero defects. It is a philosophy of never being satisfied with what was accomplished last week or last year.

“The Kaizen philosophy assumes that our way of life—be it our working life, our social life, or our home life—should focus on constant-improvement efforts. Kaizen has contributed greatly to Japan’s competitive success” (Imai, 199m7, p.1). Kaizen is the main pillar of TQM (Total Quality Management), and its emphasis lies with continuous process improvement. The most effective way to achieve Kaizen is for worker themselves to be highly motivated to implement to improvement production methods and products. Suggestion systems, quality circle and self-management are typical methods to motivate workers to achieve Kaizen. (Ethiopian Kaizen Institute, 2013).

Kaizen was introduced to Ethiopia in 2009 with JICA’s technical assistance. The success of the first pilot project (2009–2011) confirmed the transferability and effectiveness of Kaizen.

Ethiopia’s government established the Ethiopia *Kaizen* Institute (EKI) in 2011 to disseminate Kaizen throughout in the country.

In Ethiopia some organizations launched implementation of kaizen in 2009 with the assumption that it would have considerable improvement in performance. Though only a few sample organizations were selected in order to see their effectiveness and later expand the experience to other organizations. (EKI, 2016).

Increasing competition in the industrial world requires the company to make continuous improvement about the quality of product and services offered (Winy Utari, 2011). 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 (Chen etal., 2000).

As a privatized organization, Fafa Food S.C has implemented kaizen with the help of Ethiopian Kaizen Institute. As the company's documentation officer Henok, the company has started implementing kaizen in all departments. But now kaizen is being implemented in some departments. Where kaizen was implemented in phase one all employees of the company took the training on kaizen Foundation (Introduction to Kaizen, principle of kaizen, rule of kaizen, 5s campaign, wastes, total productivity maintenance, total flow management, value stream mapping, visual management and shifting paradigm) and done practical exercise like 3m (Muda, Mura, Muri) and also implement the 5S's (Sort, Set, Shine, Sustain, and Standardize), calculating through put time to improve the production system, and make visual management system in the working areas.

In the company kaizen implementation has become a seasonal work due to different problems this in turn impact productivity and efficiency of the industry.

### **1.2 Statement of the problem**

Nowadays, the importance of quality management(QM) in food manufacturing industries has become well known as a result of the companies are working in a changeable and competitive environment. This has required the food manufacturing companies shifting from implementing the existing traditional management systems such as result based management system and management by objectives to improve management systems which include kaizen, ISO management systems, food safety management systems and award based management systems. As a result, the number of food manufacturing industries certified for ISO based management systems have shown increased trend year-after-year worldwide including in Ethiopia (Mesfin, 2018).

Quality Management System aims to achieve continual improvement for an organization over the long term by focusing on customer expectation and needs while addressing the needs of all other interested parties (ES ISO 9004, 2009).

Birhanu(2013) in his study asses the quality management practice in Ethiopian manufacturing and service industries based on the Ethiopian Quality Award (EQA) self-



assessment model. The result justifies that quality will be the future challenge of competitiveness

It has been possible to know that the total number of manufacturing industries engaged in food products and beverage in Ethiopia were 672 up until the period covered by the CSA survey report (CSA, 2012).

The overall contribution of the manufacturing industry to the national economy during the period 2006/2007 to 2010/2011 was a total of 35% of the national economy (CSA, 2012). Out of this 35% contribution, 33% of the value added, was contributed from food manufacturing industries as indicated by the same source.

However, the study didn't report any finding concerning the type of management system the food manufacturing industries in Ethiopia had been implementing. It also didn't indicate whether the manufacturing industries in Ethiopia had been certified for implementing any of the standardized ISO based or other management system separately or in an integrated manner. In this regard, the annual ISO survey conducted in 2016 has indicated that the world level total food manufacturing industries certified for ISO 9001 were 31, 469; out of which 14 of them were certified in Ethiopia and this had increased the food industries certified for ISO 9001 in Ethiopia to a total of 99 (Mesfin, 2018). The same ISO's survey report has also indicated that the total

worldwide food manufacturing industries certified for ISO 22001 were 33, 049 out of which 4 of them were certified in Ethiopia and this had raised the number of food industries certified for ISO 22001 to be a total of 74.

Goetsch and Davis (2010), have summarized that in any competitive marketplace, continuous cost reduction and quality improvement issues are essential if the organization is to stay in the operation.

The emergence of new competitors in different industries from both local and international firms calls for continuous improvement in productivity and quality of products/services using considerable tools.

Accordingly, a considerable number of food manufacturing organizations in Ethiopia have implemented, among other change tools, kaizen, a philosophy which has been originated in Japan.

Nevertheless, there had been no or little information whether the food manufacturing industries in Ethiopia have effectively implemented kaizen. There had been also little information whether the management systems (MSs) were developed, implemented, and maintained as a one system covering the processes and standard requirements of each MS.

For the food manufacturing industries in Ethiopia, there was no or little available information whether they have effectively met customers' needs and expectations, government statutory and regulatory requirements and quality and food safety requirements. Reduced quality costs, customer complaints and product nonconformance throughout the entire processes of the raw material supply and product distribution chains of the food manufacturing company were not effectively met.

Implementing kaizen and thereby enhancing market competitiveness and profitability contributed to the achievement of the effectiveness were articulated and prioritized.

Therefore, this has necessitated to undertake a single case study research considering a selected case company of food manufacturing industry; which has been implementing a management system, kaizen. The purpose of the case study research is to conduct an in-depth assessment on the implementation of kaizen in the case company and to identify its applicability in the industry.

The result of this research will enable the users to determine how effective kaizen has been for Fafa Food share company; what learning points can be drawn for other organizations and be a solution for the dilemma of whether to make use of kaizen as a change tool in Ethiopian food manufacturing companies.

### **1.3 Basic Research Questions**

As Kaizen Management system is a continuous improvement system, this study intended to address the following research questions

1. To what extent is implementation of kaizen linked with the Factory strategic objectives?
2. How does the implementation of Kaizen support the improvement of working environment?
3. what outcomes are achieved through the implementation of kaizen within the Factory?
4. What significant relationship does effective implementation of Kaizen has with the organization's productivity?
5. What are the challenges of implementing Kaizen in the quality management system of the company?

### **1.4 The Research objectives.**

#### **1.4.1 General objective**

The general objective of this study is to appraise the implementation of kaizen in the case of Fafa Food S.C. It aims to address this through assessing and determining a comprehensive kaizen management system implementation and testing its applicability at the case company production process.

#### **1.4.2 Specific objectives**

1. To describe the presence of kaizen implementation in Fafa Food Share Company.
2. To examine the level of commitment, knowledge and attitude of actors of towards implementation of kaizen in Fafa Food Share Company.
3. To find out the effectiveness of kaizen implementation in the company
4. To examine the relationship that effective implementation of kaizen has with productivity improvement
5. To map out major challenges in implementing kaizen strategy in the company.

### **1.5 Significance of the study**

The theoretical relevance of this study is the development and testing of a kaizen implementation in assuring successful implementation of kaizen at a manufacturing plant.

This would also add to the body of knowledge for the applicability of the kaizen for a specific sector, food processing.

The practical relevance for the specific process in consideration is that it helps to assess the applicability of kaizen for the case company and the challenges encountered so that further improvements can be initiated and performed.

The study would contribute to the body of knowledge on quality management practices, specifically kaizen through assessing its implementation as empirical evidence that provides a rich description of the modern Kaizen by clarifying challenges associated with its implementation to all levels of the employees. In addition, the research results help all stakeholders within the company, mainly researchers, educators and implementers to improve the current practices of the Kaizen implementation.

### **1.6 Scope and Delimitation of the study**

Though quite a number of organizations are known to have implemented or have started to implement kaizen, the researcher has decided to study the level of implementation of kaizen only in one organization – Fafa Food Share Company which, the researcher believes, can reflect the cases of other organizations in similar socio-cultural environment.

### **1.7 Limitation of the study**

Though maximum effort has been made to successfully undertake the research due to the CORONA Pandemic, stay home principle was the major constraint to collect data in the planned time. Lack of information and access to the information and getting in the case company any time required and meeting key officials face to face, distributing and collecting the questionnaires were some of the limitations in the study.

## **1.8 Organization of the study**

The study organized in five Chapters: Chapter one provides a brief background of the study, statement of the problem, research questions, objectives, significance, scope and limitations of the study. The second chapter reviewed theoretical framework within which the research was conducted. Chapter three describes the research design and methodology, target population and sampling, data collection instruments and methods of data analysis.

Chapter four presents the research findings and analysis are presented and discussed the findings that emerged from the study were highlighted. Similarly, chapter five provides an outline of summary, conclusions and makes recommendations based on these findings. Finally, the references materials and sample questions were attached at the end of this paper.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITRATURE**

In this review the theoretical and empirical literature suitable to answer the research hypotheses of the study. The review begins by the main theories the study relied on to build the research framework. The review then presents the specific literature for the study, with a focus on the main variables whose relationship was being investigated. The conceptual framework was also developed after reviewing relevant literatures.

#### **2.1 Kaizen: Historical Overview**

The Japanese concept of Kaizen simply translated means ‘continuous improvement’. It is a firm-level process whose implementation in manufacturing firms is widely accepted as a successful productivity enhancement strategy. Kaizen is a system that allows organizations to improve their business activities and processes and is aimed at establishing a cycle of continuous (incremental) improvements and innovation. (Ohno, 2011; JICA, 2011). The process is company-wide, involving all levels of the firm from top-level management to front-line workers, but it is at the front line that most emphasis is placed.

##### **2.1.1 Concept and Definition of Kaizen**

KAIZEN is a continuous system undertaking by an organization to improve its business activities and processes with the goal to always improve quality of products and services so that the organization can meet full customer satisfaction. (JICA,2011).

KAIZEN is an umbrella concept which focuses on process improvement by eliminating waste in the process and encompasses all the areas that are related to quality, cost, and delivery, whose simultaneous improvements are essential in achieving customer satisfaction and success of the organization. KAIZEN, as undertaken by an organization, involves continual, dynamic and self-disciplined practice in the quest of improvement towards ever higher quality and productivity.



Figure 2.1 Kaizen Umbrella.

Source: Imai (1986, page 4)

### 2.1.2 kaizen implementation

kaizen practices should be adapted to the local culture in order to have the highest probability

of success (J. Michalska, D. Szewieczek, 2007), given that kaizen is a vital approach to problem solving, its application requires restructuring the organizational culture and then use formal root cause analysis to identify and correct the problem at the source. Thus, kaizen practices could be implemented by the manufacturing companies of host countries provided that the host companies have a low level of centralization of authority, and practice cross-functional team cooperation of 8 to 12 people with a skilled facilitator to identify, measure, and correct the problem associated with the process. As discussed by Zimmerman (1991) and Imai (1997), as a process kaizen utilizes various tools and methods to make the problem visible, and uses formal root tool cause analysis and other means to identify and correct the problem.

In order to implement the kaizen the company should follow the methodology of kaizen. This standard methodology of kaizen can be implemented in various fields. Today, it is used to improve various kinds of processes that are involved in manufacturing, management and other supporting processes in the business. This is also known as Deming's cycle, Shewhart cycle or PDCA cycle (Watson M., 1986)

Figure 2.2 PDCA Cycle



To implement the kaizen approach, what the organization need is a rapid team that has been consistent with the use of the lean systems. Typically, the people in this group will have to undergo some training so that they can start facilitating the kaizen methodology into their organization. Kaizen is actually an activity that we have to perform daily and what we should do here is to provide a purpose which should go beyond improvement. When implemented correctly, kaizen will enable the organization to humanize the workplace as well as eliminate all the processes that need a lot of work from our employees which can be about mental and physical activities.

Kaizen will also teach people how they can perform tasks in a rapid way through experiments and they need to apply here is a scientific method that will help them learn to eliminate waste in the process and process can be improved (Rajesh G. et al., 2012).

### **2.1.3 Obstacles of Kaizen Implementation**

From different literatures, here are several obstacles in organizations when implementing kaizen. Firstly, kaizen is seen as a short term project. The emphasis here is on long-term improvement.

Secondly, kaizen can only succeed in places where there is a true desire to improve (overemphasis on tying kaizen to KPIs). Thirdly, lack of commitment is only one of several common reasons why kaizen implementation fails (implementing kaizen in a heavily bureaucratic organization). Fourth is lack of adequate resources. It is common and pressing challenge. Some of the resources of which the lack of them hinders kaizen implementation are budget, kaizen training and infrastructure. (Rodrigues, Nov,7,2018)



As Rodrigues, miscalculations of goal setting is the other obstacle for implementation of kaizen. The most optimal goal for kaizen implementation is the result of all areas of the business, from acquisition of raw materials to the delivery of finished products for customers in order to identify the most problematic areas that require improvements.

#### **2.1.4 Sustainability of kaizen implementation**

The critical process factor for sustaining kaizen implementation and its outcomes are identified by Glover et al. (2011) and Jaca Garcia et al. (2010). The studies emphasize the following characteristics or activities in order to sustain improvement outcomes over time: communication within the work area and across various levels of the organization (top-down, bottom-up, and lateral communication), work area employee focus and commitment, improvement activity characteristics (e.g., project scope, goals, and improvement team dynamics), improvement culture, learning (education and training), management, measurement, and organizational structure and policies. Less commonly-noted sustainability characteristics are the impact of the external environment, external stakeholders, and team characteristics. (Gelila,2017).

### **2.2 Global spread of kaizen**

By a sense of urgency for industrial catch-up, Japan learned American style quality management from Drs. W. E. Deming and J. M. Juran, and adapted this to the Japanese context. A national movement for quality and productivity improvement emerged, supported by the Union of Japanese Scientists and Engineers (JUSE), established in 1946, and the Japan Productivity Center (JPC), established in 1955. Many companies developed their own systems of kaizen, including the globally known TPS developed by the Toyota Motor Corporation. These efforts laid a solid foundation for establishing the so-called Japanese production management system. Thus, kaizen was originally a foreign technique which was adopted and adjusted to become a Japanese technique.

The second phase was diffusion throughout Japanese companies, including small and medium sized ones.

The third phase was the regional spreading of kaizen beginning in the mid-1980s, which coincided with the globalization of Japanese business activities. The sharp appreciation of the Japanese yen after the Plaza Agreement<sup>4</sup> in 1985 prompted Japanese manufacturing

companies to shift their production bases to East Asia where production costs were lower. Also, various public organizations—the Association for Overseas Technical Scholarship (AOTS), established in 1959, the Asian Productivity Organization (APO), established in 1961 as a regional inter-governmental organization, the Japan Overseas Development Corporation (JODC), established in 1970, the Japan International Cooperation Agency (JICA), JUSE, and JPC—began their active engagement in kaizen assistance in developing countries. The first JICA project for productivity management was extended to Singapore from 1983 to 1990. Building on the success of this cooperation, the Singapore Productivity and Standard Board has subsequently grown to become a major organization to extend training programs to other countries and regions, including the Southern African Development Community (SADC) under partnership arrangements with JICA.

The Singaporean government and Japanese government jointly implemented the third-country training program on productivity management in SADC countries during 1997-2002.

In 2003, the Inter-American Development Bank (IDB) produced a handbook for TQM and QCC for Latin America and the Caribbean Region.

The fourth phase, which is now beginning, has witnessed growing interest in East Asia's industrial experience in other developing regions (including Africa). However, outside, interest in and knowledge of the East Asian approach often remains general and insufficient, and has not been operationalized with practical details. This situation provides an opportunity for Japan to more actively publicize and introduce kaizen in developing regions including Africa.

### **2.3 Applicability of kaizen in developing countries**

The philosophy, concept, and tools of kaizen have been adopted not only in Japanese firms but also in many multinational corporations in the US and Europe. 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 of kaizen (Imai, 1986 and Kaplinsky, 1995). 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.

In introducing kaizen to Africa, three issues are raised: complementarity with the Western approach which is more frequently adopted in Africa, cost effectiveness of adopting kaizen instead of other methods and transferability of kaizen to the socio-economic environment of developing countries.

## **2.4 Kaizen in Africa**

Kaizen has spread throughout East Africa, boosting productivity in the region. Industrial development has been successfully achieved in every developing country where the use of this approach has become widespread. Kaizen has improved productivity and product quality, hence the competitiveness of manufactured products in international markets. The growth of the manufacturing sector has transformed an agriculturally based economy into an industry-based one. In labor-abundant countries, Kaizen has helped the development of labor intensive industries, thereby helping such countries achieve inclusive economic growth, and has reduced not only production costs but also the incidence of injury, machine breakdowns, and delayed delivery. It has improved morale and accountability.

In Africa, Botswana began introducing Kaizen as early as in the 1990s and has been followed recently by Egypt, Tunisia, Ethiopia, Zambia, Tanzania, Ghana, Kenya, Cameroon, Senegal, Sudan, and the Republic of the Congo. (Homma. T, 2011). However, the majority of business owners, managers, and workers in Africa remain unfamiliar with Kaizen.

### **2.4.1 Kaizen and African Industries.**

African manufacturers are not only disadvantaged by the technological gap but also by the lack of knowledge in key managerial methodologies like kaizen. While engineering capacity may take time to catch up, managerial capacity may be improved more quickly since kaizen tools are developed in a way to be appreciated by all the workers, and its fundamental methodology is not very complicated. Kaizen is more to do with a philosophy and daily practices rather than techniques. For example, 5S can be taught even to the

primary school students since the philosophy is Sort, Straighten, Shine, Systematize, and Standardize. 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 Africa. Firstly, 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 kaizen. It may be a challenge for managers to change their attitude and trust the workers in gemba. Secondly, workers without sufficient educational backgrounds may not understand tables and figures. Since visualization of production and quality performance is one of the key tools of the kaizen method, separate training for workers may be required to develop a full understanding of the tools. Thirdly, the sources of productivity loss are often found outside the company, particularly delays in the delivery of materials and sudden interruption of orders from retailers and traders due to oversupply in the markets. Therefore, the problems of gemba may often be found outside the company. Improving the business network, both backward and forward, should be an important element of productivity improvement for most African manufacturers. These solutions may require some logistical arrangement such as use of information and communication technology (ICT) and improved transport.

Furthermore, in order to nationally disseminate kaizen activities in African countries, two measures should be considered. Firstly, kaizen needs to be publicized as a national movement. As mentioned earlier, kaizen is effective not only for the manufacturing sector but also for the service sector. Disseminating the best practices through the media should raise awareness amongst people of the need for kaizen activities. Since the number of manufacturers which have the chance to attend seminars or become model companies for kaizen activities will inevitably be small, it is recommended that training at institutions be promoted.

Kaizen is knowledge which is very applicable for African manufacturers but has yet to be transferred well enough. Japanese consultants often hear about the need for capital and

machinery from African manufacturers. However, capital and machinery need to be accumulated and invested in from their own internal resources. What is to be supported is not hardware, but knowledge that helps to generate and accumulate internal resources. As experienced by the leading Japanese manufacturers, managerial tools, particularly the kaizen method, are critical for productivity and quality improvements across industries.

Applying Kaizen in a food company as noted in the Sua ´rez Barraza (2010) methodology comprises seven steps whose purpose is to thoroughly innovate and/or redesign a given process adopting an approach that is wholly workplace-oriented. The food industry in general applied the methodology as

Understanding the process, Process selection, Mapping the process, Process measurement, Process analysis and Process redesign.

## **2.5 Ethiopian Kaizen Experience**

Ethiopia has been pursuing economic development and poverty reduction under the proactive national development strategy - Agricultural Development Led Industrialization (ADLI) and the 5-year national economic development strategy – Plan for Accelerated and Sustained Development to End Poverty (PASDEP: 2005/2006 – 2009/2010). In light of this, Prime Minister Meles Zenawi requested Japan for industrial development support in 2008, In response to the request, a study thus formulated was to deal with assistance to improve productivity, competitiveness and business expertise in promising industries. The Study focused on the kaizen practice, an effective means of quality and productivity improvement, which had been verified not only in Japan but also in many countries, particularly in East Asian countries. The Study was implemented in accordance with the Scope of Work signed by JICA and MOI on June 4, 2009. (MOI final rept,2011)

According to the report, the study is now drawing to a close with very positive results that create the basis of the adaptation of kaizen in Ethiopia and its nation-wide dissemination going forward.

For the transformation of the nation, the Government of Ethiopia formulated a long-term policy principle, a medium-term national development program as well as a short-term plan. Before implementing and fully institutionalizing the kaizen on a large scale, the Ethiopian Ministry of Industry and Trade (MOIT) reviewed about 63 companies in 2009 that were located within 100-kms of Addis Ababa to ascertain their quality and productivity status from October 2009 to June 2011. After a preliminary diagnosis of the L63 companies only 30 companies (i.e., 10 from Metal; 6 from Agro processing; 6 from Chemicals; 4 from Leather and; 4 from Textiles) were chosen to serve as pilot projects. From these pilot companies, about half of the companies have been awarded good, best and excellent status by Ethiopian kaizen unit (EKI, 2012).

## **2.6 Food sector development**

Africa faces the world's serious hunger problems, and these problems are getting worse and worse every day, week, month and year. According to the Food and Agriculture Organization (FAO) estimates, 842 million Africans are going hungry today. (fao.org Dec 13,2019) Even more disturbing, Africa is the only continent where hunger problem is projected to worsen over the next two decades. Currently, sub-Saharan Africa produces less food per person than three decades ago and remains one of the most malnourished regions in the world (Mulugeta and Etalem, 2003; Degefa, 2002).

The Ethiopian economy is major source of employment and gross national product in sub-Saharan Africa. It has also enjoyed a considerable attention by the government, which has suffered from repeated droughts and extreme fluctuations of output. Compared to other sub-Saharan countries, Ethiopia has an admirable record of supporting agriculture; the continued state -state led policies to boost agricultural production It constitutes over 50% of the gross domestic product(GDP), accounts for over 85% of the labor force and earns over 90% of the foreign exchange. (Diriba ,2018). Agricultural production, has been growing in Ethiopia by about 10% over the past decade (The world fact book, Aug 1, 2016).

With the growth of agricultural production, food sectors in Ethiopia are also being developed. The largest food production industries in Ethiopia are bakery, meat, sugar, fruits and vegetables. Out of all processing factors 36% revenue is generated. (BDS ETHIOPIA.NET, SEP 13, 2018)

### **2.6.1 Food processing industries in Ethiopia**

As MOI 2011 annual report, Ethiopia's economic growth rate has been around 10% in annual real GDP growth since 2004, the manufacturing industry's share of GDP has remained at 13%. At the same time, the country's external trade deficit has remained high and the negative balance of payments has continued to be a significant pressure and constraint on its economic development

The food processing sector of Ethiopia is the largest manufacturing industry in the country. The food processing industry accounted for 39% of the gross value of production(GVP) in large and medium size manufacturing in 2009/2010. (WUR,2013)

The study also shows that sugar, bakery and grain milling were the largest food industry sectors that together contributed about 47% of the total GVP. Flour(wheat), sugar and biscuit are the largest processing subsectors.

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## **CHAPTER THREE**

### **Research Design and Methodology**

Within this chapter the study will describe the steps and approaches that are used and employed in executing the research. It incorporates the research design, primary and secondary data collection methods, population under study, instruments and the data analysis methods are fairly highlighted.

#### **3.1 Research Design**

In an attempt to get adequate and relevant information about the subject matter, a combination of qualitative and quantitative approach is used. Since this research focuses on assessment of kaizen implementation practices, descriptive research design is used.

#### **3.2 Population, sampling technique and sampling procedures**

The selected sampling method was non probability sampling method which is called purposive sampling. In purposive sampling the researcher has used to question defined groups which have full information on the subject matter like the management, kaizen team leaders, production supervisors and employees.

In purposive sampling method the sample size is taken purposely, because the subject matter of the research; the selected management, employee and supervisors are directly related to the implementation process. Currently the factory has 251 employees. From which 176 of them have got primary level to university level education. (Fafa foods.com) The study have included workers who can provide the expected information by using purposive sampling technique for data collection.

##### **3.2.1 Sample size determination**

There are several approaches to determine the sample size. These include using a census



for small populations, imitating a sample size of similar studies using published tables and applying formulas to calculate sample size. This study has applied a simplified formula provided by Yamane (1967) to determine the required sample size at 95% confidence level, degree of variability = 0.5 and level of precision = 9%.

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

Where n is the sample size, N is the population size (total population that can be subjected for the study) and e is the level of precision. By the given formula above, a minimum of sample size 70 is needed for this study.

### **3.3 Sources of Data**

In the study both primary and secondary sources were used. The primary sources were the company's employees, management, supervisor and kaizen team members. The secondary sources of this study were books, magazines, Internet and other publications.

### **3.4 Instruments of data collection**

In order to get reliable first-hand information, primary data is obtained through designing open-ended, five-point Likert scale questionnaires and structured and unstructured interview questions. The questionnaire is developed and distributed to respondents. Structured interview is also developed. The secondary data, on the other hand, is collected from books, magazines, internet, records from departments of the case company and other publications.

#### **3.4.1 Questionnaire**

A total of 42 questionnaires were developed on the basis of basic questions of the study, review of literature, and theories of kaizen as management toolkits. The questionnaires are open ended and five point Likert scale. The questionnaires help to collect data from large number of respondents in different departments. Furthermore, the questionnaires can be

detailed and help to cover many issues and can be easily and quickly analysed once the field data gathering work is completed. A rating is a measured judgment of some sort. While opened-ended questionnaires were used for respondents to explain their feeling and understanding freely as much as possible based on the question rises.

For the purpose of actual study, the researcher conducted pre-testing and pilot studies in order to get constructive feedbacks and comments to verify the questions in the questionnaire, as well as the overall research process at miniature level. Next, the researcher incorporated those feedbacks and comments from different experts in the area. 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 80 questionnaires were distributed to those sampled respondents. Out of those questionnaires distributed, about six (6) questionnaires were lost.

Finally, the researcher managed to collect data from 74 sample respondents. However, only 64 questionnaires were fully completed and returned to the researcher. Generally, the response rate of the questionnaire was calculated to be 91.4% which allowed further data analysis.

### **3.4.2 Interview**

A written list of open items was prepared by the researcher in order to triangulate the data obtained through questionnaire. A structured and semi structured interview was conducted with management and supervisors with face to face interaction in order to capture their views on the implementation of Kaizen after an appointment had been scheduled by phone.

### **3.4.3 Observation Checklist**

Information on the implementation process could be best obtained through observations of kaizen implementation specifically in the parts of 5s implication and visual management kaizen. The data collected in this way consisted of the detailed descriptions in the selected case company was organized. More specifically, the researcher undertake observation

about the proper implementation of kaizen to concentrate on how, when and where. During the observation process, it was believed to apply a structured observation checklist to conduct the observations. To control the objectivity of the observation activities, the researcher employed two observers and compared their findings. Any difference of rating was then treated differently by raising different questions to each of the observers.

#### **3.4.4 Document Analysis**

The researcher first collected report documents, minutes, and other relevant written materials from the Fafa food Share company. Next, the researcher identified those reports on the implementation, the failure and the success of its implementation.

#### **3.4.5 Pre-testing and Pilot Study**

Once the questionnaire was constructed, the researcher must pilot it in Fafa Food Share Company. This means that the research instrument must be tested to see whether or not it is relevant to obtain the results the researcher required.

First, the researcher asked people who had not been involved in construction of the questionnaire to read it through and to see if there are any ambiguities which are unnoticed. Then after ten questionnaires are sent out to the types of people who would be taking part in the main survey. Now, the researcher had make clear that it was a pilot test and asked them for any comments they may have about the challenges and the success of its implementation length, structure and wording of the questionnaire.

Based on the feedbacks generated from the pre-test and pilot study, the researcher went through each response very carefully, noted comments and looked at the answers to the questions. Finally, the researcher amended the questionnaire again

#### **3.5 Reliability and Validity**

For the purpose of measuring internal consistency of the scales, Cronbach's alpha coefficient of correlation is used. This coefficient is a model of internal consistency, based on the average inter-item correlation.

Those scaled items in the questionnaire were found to be reliable and valid because the Cronbach's alpha coefficient correlation was calculated to be .750 which is higher than .70 as stated in Table 3.1. One can conclude that those Likert Scales which are developed and designed to measure the attitude of those respondents.

Table 3.1. Reliability Statistics

Cronbach's Alpha	Number of items
.75	20

Generally, those items which are included in the questionnaire to measure different aspects of the employee do have internal consistency, reliability and valid standards. Thus, those itemized Likert Scales could be used as reliable and valid scales to measure the attitude of the employees at Fafa Food Share Company.

### **3.6 Methods of data analysis**

A total of 70 questionnaires were distributed to the sample respondents. However, only 64 questionnaires were completely filled in and returned to the researcher which made the response rate of about 91.4%. Thus, this rate may allow the researcher to further data analysis. The data collected from the sample respondent is analysed using descriptive statistical method. Thus the collected data is tabulated and analysed using the frequency count and percentage. An interview result on the other hand is transcribed to supplement the quantitative findings.

## CHAPTER FOUR

### DATA INTERPRETATION AND ANALYSIS

#### 4.1 Introduction

This chapter deals with the presentation, analysis and interpretation of the data collected through questionnaire, interview and document analysis from Fafa Food Share Company employees, management staffs, supervisors and from kaizen team members in order to get the relevant information about the practice, successes and challenges of kaizen implementation. It consists of two parts. The first part presents personal information of sample population and part two deals with the presentation and analysis of the study.

Table 4.1 indicates that 70 questionnaires were distributed for employees. Out of 70 questionnaires distributed to the respondents, only 6 questionnaires were not returned.

Likewise, five kaizen team leaders and five middle and top managers were interviewed using structured and semi-structured interviews in order to capture their views on the sustainability of the implementation. Generally, the response rate of the questionnaire was calculated as 91.4% which allowed further data analysis.

Case Company Name	Total questionnaires Distributed	Total questionnaires Responded	Percentage (%)
Fafa Food Share Company	70	64	91.4

Table 4.1 Return rate of questionnaires

Source own survey data, 2020

#### **4.1. Data presentation**

In the second chapter, the review literature conducted and discussed with in the concept of this study and identified several important factors for implementation, sustainability and challenges for implementation of kaizen. The factors are arranged according to the following categories, benchmarking, sustainability of kaizen and housekeeping survey. The study conducted also identified barriers that limit Kaizen implementation. The questionnaire included categorical and open-ended background questions, as well as Likert scale questions asking respondents to agree or disagree with statements related to Kaizen implementation, sustainability and challenges faced in implementing kaizen. These questions were grouped according to the discussed objectives for this research. The questionnaire was created for respondents who may find it more convenient to complete with a paper form. A sample of the questionnaire with all survey questions administered is included as Appendix I - V. This questionnaire was divided in to four main groups. The first group surveyed a group of technical questions, the second is about kaizen implementation, the third is about sustainability of kaizen and the fourth is about housekeeping(5S). The questionnaires were designed in English and Amharic for employees in kaizen team members.

In Kaizen implementation survey, there are five main key success factors created from literature review in chapter two. These factors are holding 21 questions and discussed by the respondents. Kaizen sustainability survey part also contain seven main key success factors and has five questions in the same manner. The housekeeping survey has 13 questions.

Interview Questions are conducted as part to gain a deeper understanding on how kaizen is applied at the case company.

#### **4.2. General information of the respondents.**

According to the responses obtained from respondents, the characteristics of the study group were examined using IBM SPSS Version 22 and micro soft office Excel 2016.The

way that use for the study is, identify the gender differences, the age difference, qualification difference, and service years' difference where they are working in current factory of the respondents which can be used as testing resource.

#### 4.2.1 Demographic data of Respondents

Table 4.2 Age frequency

Age	Frequency	Percent
18-29	34	53.1
30-39	16	25
Above 40	14	21.9
Total	64	100

Source: Own survey data, 2020

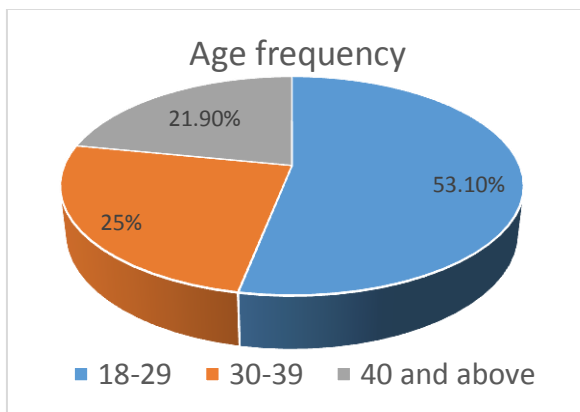


Figure 4.1 Age frequency

From the table 4.4 and figure 4.2 one can see that most of the respondents (53.1%) of the respondents are between the ages of 18 and 29 years, 25% of them are between the age of 30 and 39 the rest, 21.9% of the respondents are above 40 years of age.

Most of the respondents are young and are at their productive age of being energetic and ready to learn new experiences. From this one can conclude that they contribute for the effective implementation and sustainability of kaizen.

Table 4.3 Education level frequency

Education level	Frequency	Percent
Elementary	3	4.7%
High school	15	23.4%
Diploma	20	31.3%
BA/BSC	23	35.9%
MA/MSC	3	4.7%
Total	64	100%

Source research survey,2020

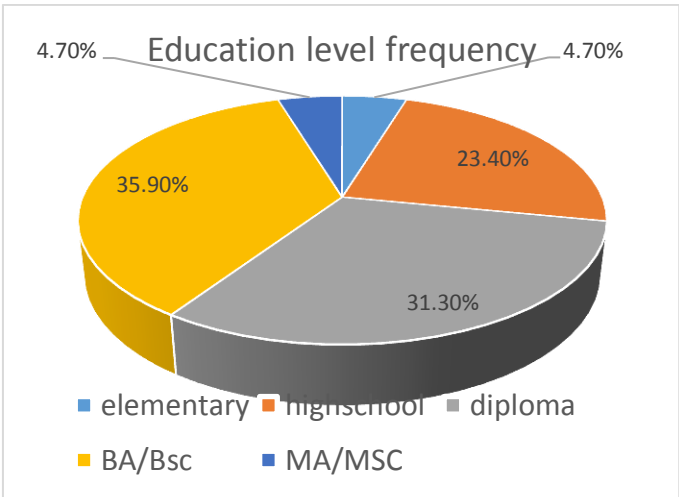


Figure 4.2 Education level frequency

From table 4.3 and figure 4.2, respondents which are 4.7% have elementary level education, 23.4% have studied till high school, 31.3% have diploma, 35.9% have BA/BSc and 4.7% of them have MBA/MSc indicating that the respondents have clear understanding of kaizen and its implementation in the case companyAs the respondents are educated, they are capable of understanding the implementation, sustainability and



challenges of kaizen implementation in the case company. Indicating that their responses are valid.

Table 4.4 Work experience frequency

Work experience	Frequency	Percent
Below 2 years	12	18.7%
2-5 years	17	26.6%
6-10 years	21	32.8%
Above 10 years	14	21.9%
Total	64	100%

Source: own survey,2020

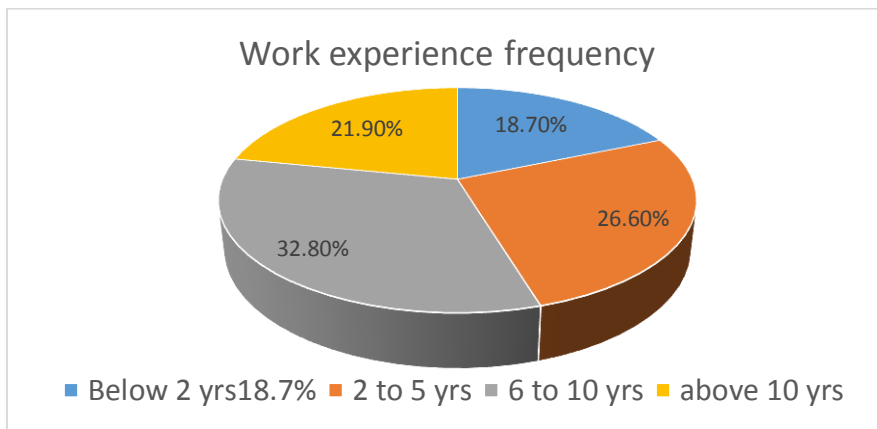


Figure 4.3 Work experience frequency

Table 4.4 shows 45.3% of the respondents have zero to five years of experience and 54.7% of the respondents have more than five years of experience which indicates most respondents are capable of comparing the change in the case company after the implementation of kaizen.

Table 4.5 Frequency distribution of job position

Job position	Frequency	Percentage
Department Manager	4	6.2%
Division Head	6	9.4%
Senior officers	30	46.9%
Others	24	37.5%
Total	64	100%

Source: own survey,2020

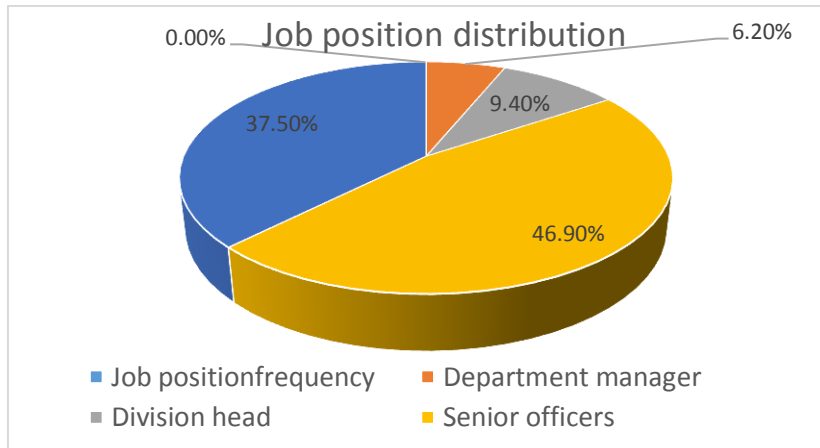


Figure 4.4 Frequency distribution of job position

Table 4.5 indicates employees at all levels have participated in the survey and necessary information can be obtained.

#### 4.3. DATA COLLECTION AND ANALYSIS OF STUDY VARIABLES

Table 4.6 Knowledge of continuous improvement

Statement/item	Response	Yes	No	Not sure	Total
Do you think you and your colleagues have adequate knowledge of continuous improvement?	Frequency	31	24	9	64
	Percent	48.4%	37.5%	14.1%	100%

Source: own survey,2020

According to respondents' perception on their knowledge regarding continuous improvement, 31(48.4%) respondents confirmed that they have adequate knowledge of continuous improvement and 24(37.5%) respondents perceive that they do not have adequate knowledge about continuous improvement. The rest, 9(14.1%) respondents are not sure about their knowledge.

According to Imai (1986), Kaizen is about organizational culture change; it is about changing the mindset. In this regard, overcoming the traditional hierarchical work trend needs long way to go.

As production supervisor, the culture of working together, participating in peer problems and participating in kaizen process is new and moderate. However, the perceived new cultures are more or less adapted. There is also traditional culture and new perceived culture in the company. This implies that, there are still conceptual gaps and are being filled on the knowledge of continuous improvement and have the impression of the traditional hierarchical work trends and these trends are still challenges for change.

Table 4.7 Employee training program

Statement/item	Response	Not really	Not quite enough	Reasonable training program	Enough training program	More than enough training program	Total
Do you think your company has a consecutive employee training program on kaizen?	Frequency	1	18	33	12	-	64
	Percent	1.6%	28.1%	51.6%	18.7%		100%

Source: own survey,2020

Table 4.7 shows that 33(51.6%) of respondents were responded the training program is reasonable. On the other hand, 12(18.7%) respondents respond training program is enough. And none of the respondents (0%) responded the training program is more than enough. 18(28.1%) of respondents said that the training program delivered to them is not quite enough. One respondent (1.6%) responds that the employee training program is not really consecutive.

Table 4.7 shows that there was reasonable continuous employee training in Fafa S.C and this result implies that the company gives great importance to training and the level of trainer’s skill and knowledge. This motivates in the implementation of the kaizen management system and consistency in the usage of kaizen tools and techniques during the implementation period.

As Imai (1986) and Farris (2006), without systematic continuous training and skill development program implementing and sustaining the program might be a challenging issue.

#### 4.8 Involvement in problem identification and improvement

Statement/item	Response	Yes	No	Total
Are you involved in problem identification & improvement of the production process of the company?	Frequency	39	25	64
	Percent	60.9%	39.1%	100%

Table 4.8 indicate that 39(60.9%) respondents involved in problem identification & production process of company while the rest 25(39.1%) of respondents did not involve in problem identification and improvement of production process of the company. This shows that company’s employees involve in identification & improvement of the production process of the company at moderate level.

A leader needs to create an environment that encourages employees to help solve problems, to focus energy on improving things that are both important to the business and to them.

#### 4.9. Extent of Worker involvement

Statement/item	Response	Very good	good	Fair	Poor	Very poor	Total
To what extent the worker involvement in Kaizen programs in your workplace can be explained?	Frequency	4	26	10	20	4	64
	Percent	6.2%	40.6%	15.7%	31.3%	6.2%	100%

Source: own survey,2020

Table 4.9 shows that 4(6.2%) respondents perceive that level of employee involvement in kaizen program implementation is very poor and 20(31.3%) respondents replied that level of their involvement in kaizen program is poor. 10(15.7%) respondents believe that the extent of workers' involvement in kaizen program is fair.26(40.6%) and 4(6.2%) of respondents replied that workers' involvement in kaizen program is good and very good respectively. Therefore, from this one can understand that the company has attempted to involve its employees in the implementation of the kaizen program but not satisfactorily.

As Oakland (2007), 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, 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. As trainers' commitment is a key point for the success of a Kaizen implementation, the level of trainer satisfaction and their commitment to the company need to be evaluated prior to the introduction of Kaizen.

The student researcher asked the management and the kaizen team leaders 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 continuous improving and finally initiate employees to think of ways about eliminate effort in maintaining an area.

Therefore, the above findings indicate that, the management body and the kaizen team leaders were agreed as changing the mindset of the company worker and as increasing the involvement of workers in decision-making.

Table 4.10. Employee's opinion and suggestions

Statement/item	Response	Not at all.	Sometimes	Yes, in many cases	Yes, always from some employees	Yes, always from all employees	Total
Do you think the employees' opinions and suggestions are given due consideration in your company?	Frequency	9	28	16	11	0	64
	Percent	14%	43.8%	25%	17.2%	-	99.95%

Source: own survey,2020

Table 4.10 shows that 28 (43.8 %) of respondents respond supervisors and manager

sometimes listen to subordinates.9 (14%) of respondents respond that supervisor and managers do not care about employees' opinions. 11(17.2 %) of respondents respond, supervisors and managers always listen to opinions of employees from some employees. 16(25%) of the respondents responded supervisors and managers in many cases listen to opinions of employees.

According to Imai (1997) suggestion system is a core Kaizen principle. Also it permits employees to communicate operational level issues in a two way and enhance workers' morale.

Therefore, from the above explanation, it can be concluded that, there is moderate practices of the suggestion system in the organization. It also implies that, there are gaps in conceptualizing the system, both from team leaders and management point of view.

Table 4.11 Feedback from the Management

Statement/item	Response	Highly encouraging	Encouraging	Neutral	Discouraging	Highly Discouraging	Total
	Frequency	0	11	16	27	10	64
The feedback you get from the management of the company while you identify problem & come up with solutions is	Percent	-	17.2%	25%	42.2%	15.6%	100%

Table 4.11 implies that 27(42.2%) of respondents replied that management feedback to

employees while identifying problems & solution is discouraging, 10(15.6%) of respondent responded that it is highly discouraging .16(25%) of respondent replies neutral and the rest 11(17.2%) responded that management feedback is encouraging.

As Doolen et al. (2003), 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. It also involves in 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.

Therefore, from the above statement it can be understood that, when employees come up with a new idea and solution they don't get encouraging response from management.

#### 4.12. Level of satisfaction

Statement/item	Response	highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied	Total
As an employee what is your level of satisfaction because of implementing kaizen?	Frequency	4	10	29	18	3	64

Source: own survey,2020

Table 4.12 shows that 4(6.3%) respondents are highly satisfied with the implementation of kaizen programs. 10(15.6%), 18(28.1%) and 3(4.7%) respondents responded satisfied, dissatisfied and highly dissatisfied respectively with the implementation of kaizen. neither satisfied nor dissatisfied, satisfied, strongly satisfied and strongly dissatisfied respectively. The rest 29(45.3%) respondents are neutral on the implementation of kaizen.



The kaizen team leaders describe many challenges; the first and foremost problem is a problem of acceptance of the program. Secondly, translating the ideas into practice and internalizing Kaizen in companywide level remains complex task. The respondent has confirmed that there was a gap between the designed and the experienced Kaizen in such a way that the designed was to shorten the long work flow process, proper documentation and to bring effective and efficient delivery services to customers. The management of Fafa S.C is committed enough to successfully implement kaizen by taking seriously the importance of the training which was attended by production workers & the management of the company but whenever they requested financial support for the implementation of kaizen they do not facilitate according to their need.

Beside this, the result shows that most of company employees are dissatisfied with implementation of the kaizen program.

Table 4.13 Being part of Kaizen activity

Statement/item	Response	Yes	No	Total
Do you like being part of Kaizen activity in your work station?	Frequency	31	33	64
	Percent	48.4%	51.6%	100%

Source: own survey,2020

Table 4.13 states that 31(48.4%) of the respondents liked being a part of kaizen activity, but 33(51.6%) of respondents don't like being a part of kaizen activity. From the table one can understand that most of the respondents don't like to participate in kaizen activities.

According to responses of respondents were expressing their opinion that practicing kaizen has no personal benefit attached with kaizen success and it is redundant and is tiresome. Generally, most of the respondents suggest that kaizen practice has no attachment with personal benefit.

Table 4.14 Kaizen practiced area

Statement/item	Response	Sorting	Standardizing	Set in order / Arranging	Sustaining	Shining / Cleaning	Total
In order to have standard working place which of the basic kaizen practices you practiced?	Frequency	18	16	16	4	10	64
	Percent	28.1%	25%	25%	6.3%	15.6%	100%

Source: own survey,2020

Table 4.14 tells us that 18(28.1%) respondents said that they practiced basic kaizen sorting and 16(25%) of respondents practiced standardizing. while 16(25%), 4(6.3%) and 10(15.6%) respondents responded that they practiced set in order/arranging, sustaining and shining/cleaning respectively. From the table, one can see that most respondents participated in sorting, standardizing and arranging which the basic kaizen practice in work area.

Table 4.15 Mechanism practicing Kaizen

Statement/item	Response	Yes	No	Total
Is there any mechanism that helps you always to remember practicing kaizen?	Frequency	44	20	64
	Percent	68.7%	31.3%	100%

Source: own survey,2020

Table 4.15 shows that 44(68.7%) of respondents responded that there is a mechanism that helps to remember practicing kaizen while 20(31.3%) respondents said there is no mechanism in the company that helps to remember practicing kaizen.

Generally, the above figure shows that there is a mechanism to always remember practicing kaizen in the company.

Table 4.16 Mechanisms practicing Kaizen

Statement/item	Response	My own attention	Supervisors follow up	Use of noticed board	Use of handbook	Penalty	Total
If your answer is “Yes” for question number 12, the thing that reminds or sometimes obliges you to practice kaizen is	Frequency	4	24	10	4	2	44
	Percent	9.1%	54.5%	22.7%	9.1%	4.5%	99.9%

Source: own survey,2020

Table 4.15 shows that 24(54.5%) respondents said supervisors follows up obligates them to practice kaizen. 10(22.7%) of the respondents respond that they use noticed board to practice kaizen, while4(9.1%), 4(9.1%)and 2(4.5%) respondents have responded my own attention, use of hand book and penalty remind them to practice kaizen. From the responses given, one can conclude that there is a mechanism of reminding of practicing of kaizen in the case company.

Table 4.16. Kaizen and productivity

Statement/item	Response	Yes, to a very great extent	Yes, to a great extent	Yes, to some extent	No, kaizen & productivity are not related for our case	Total
Do you believe kaizen has improved your productivity?	Frequency	0	20	36	8	64
	Percent	-	31.3%	56.2%	12.5%	100%

Source: own survey,2020

Table 4.16 shows that 36(56.2%) respondents said kaizen improve productivity to some extent. 20(31.3%) respondents believe that kaizen improve productivity to great extent and 8(12.5%) respondents believe kaizen and productivity are not related.

From the table, one can conclude that employees believe that kaizen contributes to productivity to some extent. Respondents have stated that they have heard the increment of productivity from the report of the management.

As Osada, (2002), the applicability of kaizen is a means to eliminate waste and improve productivity and improve quality of processes.

Table 4.17 Features of kaizen

Item 1	Processes have been documented with measures to understand performance.		
		Frequency	percent
	strongly agree	57	89.1%
	Agree	5	7.8%
	Neutral	2	3.1%
	Disagree	-	0%

	Strongly disagree	-	0%
<b>Item 2</b>	<b>Employees understand the processes that are related to their own work</b>		
		Frequency	percent
	strongly agree	6	9.4%
	Agree	50	78.1%
	Neutral	4	6.2%
	Disagree	3	4.7%
	Strongly disagree	1	1.6%
<b>Item 3</b>	<b>Problems are solved by teams (through team approach).</b>		
		Frequency	Percent
	strongly agree	40	62.5%
	Agree	21	32.8%
	Neutral	3	4.6%
	Disagree	-	0%
	Strongly disagree	-	0%
<b>Item 4</b>	<b>Proper lay-out of the machineries and other material in the workshop, floor and space is designed and set up in such a way that would reduce wastage of time &amp; place</b>		
		Frequency	Percent
	strongly agree	3	4.7%
	Agree	20	31.25%
	Neutral	30	46.9%
	Disagree	8	12.5%
	Strongly disagree	3	4.7%
<b>Item 5</b>	<b>Due attention is given not only to profit maximization but also to satisfaction and motivation of workers</b>		
		Frequency	Percent
	strongly agree	1	1.6%
	Agree	13	20.3%
	Neutral	28	43.8%
	Disagree	10	15.6%
	Strongly disagree	12	18.8%

Source: own survey,2020

From table 4.17, about documentation of kaizen activities in the case company (item 1), 57(89%) of the respondents strongly agree that the activities are documented, 5(7.8%) of the respondents agree, 2(3.1%) of the respondents are not capable of telling about the documentation process of the kaizen activities in the company.

From this, one can conclude that documenting and kaizen activities is very good by the case company and most of the employees are aware of it.

Regarding employees understanding on what and when to do their job (item 2), 6(9.4%) of the respondents strongly agreed that they understand the process related with their work. 50(78.1%) of the respondents agree, 4(6.2%) of the respondents are not sure, 3(4.7%) of the respondents disagree (responded that they do not know) and 1(1.6%) of the respondents strongly disagree.

From the table, one can understand that most of the employees have understanding about processes related to their work. But, as still there are employees who do not understand the processes related to their work, the management and supervisors need to communicate and give trainings for employees.

For item 3, (team problem solving), 40(62.5%) of the respondents strongly agree, 21(32.8%) of the respondents agree and 3(4.6%) of the respondents are neutral. Indicating that the employees work in teams and company motivates team work.

For item 4 (proper layout of machineries), 3(4.7%) respondents strongly disagree, 20(31.25%) respondents disagree, 30(46.9%) of the respondents are neutral, 8(12.5%) of them disagree and 3(4.7%) of the respondents strongly disagree that there is proper orientation of the machineries.

From the responses of the employees, supervisors and kaizen team leaders interview and student researcher observation, there is no proper layout of the machineries which allow free movement of workers specially in vitamin and milk production department.

From table 4.17, item 5 (attention to employees) is responded as 1(1.6%) strongly disagree, 13(20%) agree, 28(43.8%) neutral, 10(15.6%) disagree and 12(18.8%) strongly disagree.

From the given response one can see that most employees believe that the company doesn't care and pay attention for them and feel that they work only for the benefit of the organization.

The main objective of kaizen is to improve organizational outcomes. (Haun et al., 2015). Using kaizen as a means to improve the way to work is designed, organized and managed considering mutual benefit of the organization and the employee which promotes profit for the organization, satisfaction for employees and customers.

Table 4. 18 Views on kaizen practice

<b>Item 1</b>	<b>There is an established system for training and education in the organization.</b>		
		Frequency	Percent
	strongly agree	4	6.2%
	Agree	4	6.2%
	Neutral	9	14.1%
	Disagree	29	45.3%
	Strongly disagree	18	28.1%
<b>Item 2</b>	<b>There is coordination, communication and integration within departments that foster Kaizen implementation</b>		
		Frequency	Percent
	strongly agree	18	28.1%
	Agree	32	50%
	Neutral	9	14.1%
	Disagree	4	6.2%
	Strongly disagree	1	1.6%
<b>Item 3</b>	<b>The kaizen technique increased employees'/team members interest (voluntarily) in the work area.</b>		
		Frequency	Percent

	strongly agree	3	4.7%
	Agree	8	12.5%
	Neutral	41	64.1%
	Disagree	11	17.2%
	Strongly disagree	1	1.6%

Source: own survey,2020

Regarding the views in kaizen practice, table 4.18 shows the responses given by respondents as

For item 1 (training and education system), 4(6.2%) respondents strongly agree, 4(6.2%) of the respondents agree, 9(14.1%) of the respondents believe that the training and education program is fair, 29(45.3%) of the respondents disagree and 18(28.1%) of the respondents strongly disagree that the learning and training program is established.

From the table one can understand that there is no established kaizen training and learning program.

The coordination, communication and integration within departments is indicated by the responses for item 2 as,18(28.1%) respondents strongly agree, 32(50%) of respondents agree,9(14.1%) respondents neutral, 4(6.1%) of the respondents disagree and 1(1.6%) of the respondents strongly disagree that there is coordination, communication and integration within departments to foster kaizen implementation. The table indicates that kaizen is being implemented with the integration of departments of the case company.

Table 4. 19 Sorting

<b>Item 1</b>	<b>Tops and insides of all cupboards, shelves, tables, drawers, etc. free of unwanted Items</b>		
		Frequency	Percent
	strongly agree	4	6.2%
	Agree	56	87.5%
	Neutral	4	6.2%
	Disagree	-	-
	Strongly disagree	-	-
<b>Item 2</b>	<b>Notice Boards – Current Notices with removal instructions</b>		



		Frequency	Percent
	strongly agree	20	31.25%
	Agree	36	56.25%
	Neutral	8	12.5%
	Disagree	-	
	Strongly disagree	-	
<b>Item 3</b>	<b>Rules for disposal with red tags, etc</b>		
		Frequency	Percent
	strongly agree	3	4.7%
	Agree	20	31.25%
	Neutral	30	46.9%
	Disagree	10	15.6%
	Strongly disagree	1	1.6%

Source: own survey,2020

Table 4.19 indicates responses of respondents on sorting issues.

Responses for item 1, 4(6.2%) respondents respond that they strongly agree that cupboards are free of unwanted items, 56(87.5%) of respondents agree and 4(6.2%) of respondents disagree that areas are free of unwanted items.

Generally, one can understand from the table that the company is free of unwanted items.

Responses for item 2 (current notice for removal of unwanted items),56(87.5%) of the respondents agree that there is a current notice of removal and 8(12.5%) of the respondents are not sure. Indicating that unwanted items are being noticed and removed every time.

For item 3(Rules for disposal), 23(35.95%) of the respondents agree that there is rule for disposal of unwanted items, 30(46.9%) of the respondents are not sure about the rules and 11(17.2%) of the respondents disagree on the presence of disposal rules.

From the table one can understand that there are no clear rules of disposal of items.

According to Brials(2005), kaizen has an interesting strategy of elimination of waste in order to reduce waste generated in production process and promote the continuous process.

Table 4.20 Setting

Item 1	<b>Factory/Stores, etc., have clearly marked grid reference</b>		
		Frequency	Percent
	strongly agree	29	45.3%
	Agree	31	50%
	Neutral	3	4.7%
	Disagree	-	-
	Strongly disagree	-	-
Item 2	<b>Gangways clearly marked with passageways / entrances &amp; exit lines / curved door openings/ direction of travel</b>		
		Frequency	Percent
	strongly agree	29	45.3%
	Agree	32	50%
	Neutral	3	4.7%
	Disagree	-	-
	Strongly disagree	-	-
Item 3	<b>Switches, fans regulators, etc., labelled</b>		
		Frequency	Percent
	strongly agree	30	46.9%
	Agree	32	50%
	Neutral	2	3.1%
	Disagree	-	-
	Strongly disagree	-	-

Source: own survey,2020

From 4.20 responses for setting questionnaires are

For item 1(presence of marked grid reference),60(95.3%) of the respondents agree that there is marked grid reference and 4(4.7%) of respondents are not sure. Generally, from the response one can understand that there is a marked grid reference.

Item2(direction of travel) is responded as, 61(95.3%) respondents agree and 4(4.7%) respondents are not sure of presence of direction of travel.

From the responses and student researcher’s observation, there is a direction of travel in the compound of the case company.

Table 4.21 Shining

<b>Item 1</b>	<b>Use of adequate cleaning tools is evident, Storage of cleaning tools – brooms/mops/other equipment</b>		
		Frequency	Percent
	strongly agree	20	31.25%
	Agree	31	48.4%
	Neutral	13	20.3%
	Disagree	-	-
	Strongly disagree	-	-
<b>Item 2</b>	<b>Machines/equipment/tools/furniture at a high level of cleanliness &amp; maintenance schedules displayed</b>		
		Frequency	Percent
	strongly agree	23	35.9%
	Agree	40	62.5%
	Neutral	1	1.6%
	Disagree	-	-
	Strongly disagree	-	-

Source: own survey,2020

Table 4.21 shows the response of respondents regarding shining as

Item 1(presence of adequate cleaning tools) 51(79.65%) of the respondents agree that

there are enough cleaning tools and 13(20.3%) of the respondents are not sure whether there is or not enough cleaning tools.

Generally, from the table, it is understood that there are enough cleaning tools.

Table 4. 22 Standardization

<b>Item 1</b>	<b>Visuals on danger/open &amp; shut directional labels on valves/doors, etc.</b>		
		Frequency	Percent
	strongly agree	28	43.7%
	Agree	32	50%
	Neutral	4	6.25%
	Disagree	-	-
	Strongly disagree	-	-
<b>Item 2</b>	<b>Maintenance/Storage of files/records in offices/ workplaces, etc</b>		
		Frequency	Percent
	strongly agree	28	43.7%
	Agree	32	50%
	Neutral	4	6.25%
	Disagree	-	-
	Strongly disagree	-	-
<b>Item 3</b>	<b>Standardized checklists for common Administrative Procedures</b>		
		Frequency	Percent
	strongly agree	24	37.5%
	Agree	33	51.5%
	Neutral	7	10.9%
	Disagree	-	-
	Strongly disagree	-	-

Source: own survey,2020

Table 4.22 shows the response of respondents on standardization as

For item 1(visuals on danger), 60(93.7%) of the respondents agree on the presence of visuals or danger marks on unsafe areas and 4(6.3%) of the respondents are not sure of the presence danger marks. Indicating that there are visible marks on danger areas.

For item 2(maintenance), 60(93.7%) of the respondents agree on the presence of storage of files and records in offices and 4(6.3%) of the respondents are not sure of the presence of maintenance.

Generally, from the student researcher observation and responses, it is understood that there is storage of files and records which further can be maintained.

Kaizen uses visual management tools to display the process visually, allowing the employees to easily view the process (cited by Von Thiele Schwarz et al.,Aherene and Whelton,2010), thereby facilitating participation.

For item 3(checklists), 57(89%) of the respondents are aware of the presence of checklists and 7(11%) of the respondents are not sure of it.

From the research observation and responses it is understood that there are checklists for continuous follow up.

Table 4. 23 Sustain

<b>Item 1</b>	<b>Evidence in carrying out internal audits by patrol teams</b>		
		Frequency	Percent
	strongly agree	31	48.4%
	Agree	33	51.5%
	Neutral	-	-
	Disagree	-	-
	Strongly disagree	-	-
<b>Item 2</b>	<b>Workers receive praise for working safely</b>		
		Frequency	Percent
	strongly agree	6	9.3%

	Agree	30	46.9%
	Neutral	28	43.7%
	Disagree	-	-
	Strongly disagree	-	-

Source: own survey,2020

Table 4.23 shows responses for sustaining of processes in the case company as

For item 1(audit), 64(100%) of the respondents agree that there is an internal and external audit of the processes of the case company.

Generally, from the researcher observation and respondents response in table 4.24, the case company gets audited internally and externally.

For item 2(praise for workers), 36(56.2%) of the respondents agree on the provision of praise for workers and 28(43.7%) of the respondents are not sure of the praise or do not accept the praise given is satisfactory.

From table 4.24 one can understand that there is no clear understanding or knowledge of provision of praise for workers.

#### DATA COLLECTED FROM INTERVIEW

Interview was conducted with management, kaizen team leaders and supervisors where they play important role in managing and leading the plant. The following team leaders and supervisors were willing to give their words

for the interview, the five kaizen team leader, Production supervisor, Machine spare part team leader, Laboratory supervisor and Store team leader

The questions were designed in such a way that they can extract the respondents understanding, benefits gained and challenges faced during kaizen implementation. Their responses are summarized as follows

Kaizen is being implemented after all employees of the plant have taken training for two days by EKI. Five kaizen teams, Quality kaizen team, sales kaizen team, quality control kaizen team cost and budget kaizen team and cleaners kaizen team are formed and started to implement it.

Implementing kaizen has reduced wasted products and inefficiency from the company, increase productivity, increase cleanliness of the working place improves the proper usage of space, increased customer satisfaction and improve working culture of the employees.

Though kaizen is implemented, there are constraints for the implementation. For example, as the infrastructure is old, there is not enough space in production department specially vitamin and milk production zone, for easy movement of workers. There is also problem of sound disturbing the comfort of workers.

As the company is implementing other management systems, ISO 9001 and ISO 22001, enough budget is not being allocated for the implementation of kaizen. Therefore, after two years of experience, now kaizen is not being implemented all over the company, rather selected departments, raw material store, machine spare part and maintenance department, are implementing kaizen. And some of kaizen practices are still being used in the case company, namely team work, visual tools, labelling and visual boards are still being used.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

#### 5.1. Summary

This study dealt with practices, sustainability and challenges of Kaizen implementation at Fafa food S.C. The research thus aimed at assessing the actual implementation of kaizen and identifying challenges encountered in its implementation at the case company. The specific objectives of the study are:

1. To describe the presence of kaizen implementation in Fafa Food Share Company.
2. To examine the level of commitment, knowledge and attitude of actors of towards implementation of kaizen in QMS.
3. To find out the effectiveness of kaizen implementation in the company
4. To examine the relationship that effective implementation of kaizen has with productivity improvement
5. To map out major challenges in implementing kaizen strategy in the company.

In order to answer research questions and address both general and specific objective of the research, the student researcher employed different data collection methods, interview, questionnaire and observation, to collect quantitative and qualitative data. Based on the results of quantitative research, and the findings of the qualitative research; the student researcher drew conclusions by putting them together with the objectives of the research.

In the attempt to study the problems and in order to provide a sound basis for an objective assessment and correct understanding of the actual situation of the problem the following basic questions were raised.

To what extent is implementation of kaizen linked with the Factory strategic objectives?



How does the implementation of Kaizen support the improvement of working environment? what outcomes are achieved through the implementation of kaizen within the Factory? What significant relationship does effective implementation of Kaizen has with the organization's productivity? What are the challenges of implementing Kaizen in the quality management system of the company?

As Silverma, D (1993, 156), The information collected from different data can be compared with each other, which increases the validity of the research. Multiple data collection methods were employed for this thesis, such as records of reports, interviews, questionnaires and field observations. The evidence may be qualitative, quantitative or both (Eisenhardt 1989, 534 - 535). The actual implementation of kaizen strategy has achieved success stories in Fafa food Share Company.

The trainees have achieved improved level of educational status. After the implementation stage, a reasonable number of the people in the implementation of the strategy have a very clear understanding of the kaizen strategy. The implementation of kaizen strategy creates at least the necessary element for the practitioners to have an effective experience.

The stakeholders have demanded for extensive and more implementation of other quality management systems on the overall effectiveness of the productivity of the case company. The major customers of Fafa Food S.C are international aid organizations like USAID and World Food Organization which buy the relief products of 30,000 tons of products per year. (2012E.C sales document of the case company).

In order for the case company to satisfy its niche customers and ensure its sustainability and profitability, it has terminated the implementation of kaizen in most of its departments and started implementing Total Quality Management, ISO9001/2015 and FSMS22,001/2018 which allows the company system certified.

#### A. Implementation of Kaizen

In the findings and results of the study, the implementation status of kaizen was assessed using a totalof ten indicators. The first indicator was whether or not the overall

implementation of the kaizen was well-organized. Accordingly, from the researcher's observation and responses from the respondents, 4.5% respondents disagree the implementation of kaizen in the company, 24% respondents are neutral and 71.5% of respondents are capable of assessing implementation of kaizen in the company. The case company is in a position of implementation at moderate level.

Due to moderate level of implementation, the enterprises created team work, clean and safe improved processes. The warehouse (raw material ware house) was re-arranged and all materials were situated in a clearly visible area and the garbage was prepared and situated in specified areas.

### **B. Sustainability of kaizen implementation**

Sustainability of kaizen implementation is assessed by three indicators. The percentage of respondents' response on attitude toward the implementation of kaizen is 35.9% positive, 33.3% negative and 30.8% respondents are neutral. Therefore, one can understand that the respondent response resembled positively accepted due to the fact that the workers have got enough training and follow up from EKI for about a year consistently.

### **C. Challenge related to the implementation**

As the research indicates that most of the factory's customers are international aid organizations namely, USAID and WFO, which require certified system of the factory. And as kaizen is overall improvement of the organization without certifying, the share company prioritize implementing the certifying quality management systems like Total Quality Management, ISO 9001/2015 and FSMS 22000/2018. Therefore, the share company wanted to cut cost from implementing kaizen.

### **D. strategies to overcome the challenges**

As Cost and Budget kaizen team leader, some departments, raw material store, machine spare part and maintenance department are still implementing kaizen as the departments

have lots of inventories and wastes to be managed well. About 128,000 Ethiopian Birr is even gained from the waste sold from these departments, specially machine spare part and maintenance departments within the implementation of kaizen strategy for one year.

The implementation of other quality management systems is also a mechanism to overcome the challenges.

## **5.2 Conclusion**

This study provides an insight into some selected factors in ensuring a successful Kaizen implementation and its sustainability in food manufacturing companies. This study deals an appropriate analysis and evaluation of the current kaizen implementation and challenge toward sustainability Fafa food S.C based on the identified key success factors. The study was done on a case company, which was partially interrupted kaizen implementation meaning the case company has a good experience on sustaining of kaizen implementation in some departments like machine spare part, raw material store and maintenance department. According to the data collected and analyzed in this research work, implementation of kaizen in Fafa food S.C has highly contributed to meeting its strategic objectives on housekeeping, boosted team spirit culture and has improved its sales 16.5 tons of products in 2010 E.C to 23.65 tons of products in third quarter of 2011 E.C which is an increase from 412,500 Million to 804,500 Million Birr increment.(Case company report,2012) Thus, implementation of Kaizen in all departments has increased the practice of improving most of the factory's production systems and it contributed a lot to every department's improvement through reducing production cost, resource utilization and avoiding non value adding activities. Even if all the benefits of the above are found in the factory, the kaizen implementation program has been terminated except machine spare part, raw material store and maintenance departments for after two years. A reason that the factory has started implementing Total Quality Management, ISO 9001/2015 and FMEA 22000/2018.

The assessment done on Fafa food Share Company regarding implementation, sustaining, effectiveness and challenges of kaizen has come up with major findings discussed in

previous sections. Based on these findings the following conclusion are drawn by the researcher.

Kaizen implementation in the Factory has highly been linked with and hence helped the Factory to achieve its strategic objectives.

Regarding improvement in employees' work behavior, major positive changes have been obtained in terms of improved relationship between employees and management, improved employees' satisfaction level with their job and their proven efforts made in continuously working to achieve remarkable waste reduction.

It has been confirmed that the case company has implemented integrated management system composed of ISO 9001/2015 QMS and ISO 22000/ 2018 FSMS.

With regard to productivity increment, unlike before, the workshops are organized in a structural way to ease production; the practice of leaving conducive working space is found to be suitable for proper production of biscuits, milk, vitamins and other products.

### **5.3 Recommendations**

Based on the findings and conclusions of the study, the following were the research recommendations:

- Kaizen implementation must be taken as a strategic decision to work
- The case company should take measure to integrate management systems at all levels and departments as each management system has its own benefits.
- The Ethiopian kaizen institute should conduct continuous follow up and provide support in order to sustain the implementation process.
- The management should allocate enough budget to implement kaizen strategy at all departments since it constantly improves the interaction between staff and management
- Any achievement to kaizen activity should be revealed to all employees

- Evidence must be shown to owners that kaizen will be the working culture of the organization
- Achievements must be shown to owners that kaizen strategy implementation has.
- Constantly improve the performance of employee's attitude and management commitment
- The pursuit of better quality and productivity must be constantly improved
- There should be clear reward and recognition system in the organization

## REFERENCES

1. Admasu Abera. (2015). Kaizen Implementation in Ethiopia: Evidence in literature. Dilla University, Ethiopia.
2. ASQ (2018). What is a Quality Management System (QMS) – ISO 9001 & Other Quality Management Systems? <http://www.asq.org/learn-about-quality/quality-managementsystem/>. Accessed on April 17, 2018 at 9:54 AM
3. BDS Ethiopia.Net, Sep 13,2018
4. Chen J C, Dugger J., Hammer B. (2000). A Kaizen Based Approach for Cellular Manufacturing Design: A Case Study, The Journal of Technology Studies, Vol. 27, No. 2, pp. 19-27.
5. Diriba Welteji. (2018). Agriculture and food security. article number 55.
6. Doolen, T. L. & Hacker, M. E. 2(005). "A Review of Lean Assessment in Organizations: An Exploratory Study of Lean Practices by Electronics Manufacturers", Journal of Operations Management, vol. 24, no. 1, pp. 55-67.
7. EKI, (2010). Pamphlet on Kaizen implementation in Addis Ababa Company and industries
8. Ethiopian Kaizen Institute (2012:36&39)
9. Ethiopian Investment Agency. Investment Opportunity Profile for the Production of Fruits and Vegetables in Ethiopia. June, 2012.
10. Ethiopian Kaizen Institute(2016c). Annual Report.
11. Gelila Getachew, (2017). Assessment of kaizen implementation and challenges toward sustainability. A Thesis Submitted to The School of Mechanical and Industrial Engineering Presented in fulfilment of the requirement for the degree of Master of Science, Addis Ababa University, Ethiopia.
12. GRIPS Development forum (2009). Introducing Kaizen in Africa. National Graduate Institute of Policy Studies: <http://www.grips.jp/forum>.
13. Imai, M., (1986). Masaaki Imai, Kaizen The Key to Japan's Competitive Success. New York: McGraw Hill, Inc.

16. ISO (2016). ISO 2016 Annual Assessment Report. Accessed from ISO Website
17. JIKA. Quality and Productivity Improvement Project in Ethiopia. Kaizen News Letter, Vol.3.Dec,29 2009.
18. JIKA (2016). Quality and Productivity Improvement Project in Ethiopia.
19. Kahn, A. (2011), Kaizen: The Japanese strategy for continuous improvement, VSRD international journal of business and management research, Vol 1, No 3 pp. 177-184
20. Ohno, I., Ohno, K., Uesu, S., Ishiwata, A., Hosono, A., Kikuchi, T., et al. (2009). Introducing KAIZEN in Africa. Tokyo: GRIPS Development Forum. Policy Studies 7-22-1 Roppongi, Minato-ku, Tokyo.
21. Silverman, D. (1993). Interpreting qualitative data: Methods for Analysing Talk, Text and Interaction. London: Sage Publications. ISBN 0-8039-8758-7.
22. Singh, J., & Singh, H. (2009). Kaizen Philosophy:A Review of Literature. The Icfai University Journal of Operations Management, 51-72.
23. Susan Reidy, (2019), Ethiopian Wheat Production Increase. Ethiopia.
24. Tessema Urgessa, (2015). The Determinants of Agricultural Productivity and Rural Household income in Ethiopia. A Thesis Submitted to the Department of Economics in Partial Fulfillment of the Requirements for the Degree of Master of Science in Economics (Economic Policy Analysis), Addis Ababa University, Ethiopia.
25. The Ethiopian Messenger, April, 2018
26. The World Fact book, Aug 1, 2016.
27. www.Kalitifoods.Com
28. Winy Utari. (2011). Application of Kaizen Costing as a Tool of Efficiency in Cost of Production at Pt. Coca Cola Bottling Indonesia. Submitted as Partial Fulfillment of Requirement for the Accounting Department, Faculty of Economics, Andalas University, Padang.

## **Appendix I**

**St. Mary's University**

**School of Graduate Studies**

**Institute of quality and productivity management**

Dear Respondents, I am postgraduate student of the above institution mentioned and now I am undertaking a research by using your company as case company. This questionnaire is designed based on the Topic: Assessment of implementation of Kaizen as quality management system. The main purpose of this questionnaire is to obtain information about overall experience with Kaizen implementation and level of Kaizen Implementation in your Organization.

The quality of the result of this research is based on the accuracy of the information you provide. In order to be useful, all responses to the items contained in this questionnaire must accurately reflect your true opinions. Please take a few minutes to provide your honest opinion about each statement. Your honest opinion is very valuable to the success of this study.

Any information you give would be kept confidential and it is for academic purpose only.

Your kind cooperation is very much appreciated.

With best regards,

### **Note**

- You are not required to write your name.
- Questions, related to your opinion, please write shortly and precisely on the space provided.

The questionnaires are employee and managerial type, framed into three parts: part one deals with overall profile of the respondents, part two focuses on general Kaizen implementation issues. Finally, part three tried to shed light on achievements (the managerial type questionnaires have special emphasis on the social and technical system outcomes gained



## I: QUESTIONNAIRES FOR EMPLOYEES

### Part I Demographic Information

INSTRUCTIONS: Please answer by making a tick (√)

1. Gender: Male ( ) Female ( )
2. Age; 18-29( ) 30-39 ( ) Above 40 ( )
3. Kindly indicate the level of your education.
  - a) Completed Elementary School ( ) b) Completed High school ( ) c) Diploma ( )
  - d) BA/BSC ( ) e) MA/MSC ( )
4. For how long have you been working in the current Company?
  - a) below 2 years ( ) b) 2 – 5 years ( ) c) 6– 10 years ( ) d) above 10 years ( )
5. Your work area / position \_\_\_\_\_

### Part II. Please put a tick mark (√) in the brackets that best describe your answer.

1. Do you think you and your colleagues have adequate knowledge of continuous improvement?
  - a) Yes ( ) b) No ( ) c) I am not sure( )
2. Do you think your company has a consecutive employee training program on kaizen?
  - a) Not really. ( ) b) Not quite enough. ( ) C) Reasonable training program ( )
  - d) Enough training program ( ) e) More than enough training program ( )
3. Are you involved in problem identification & improvement of the production process of the company?
  - a) Yes ( ) b) No ( )
4. If your answer is “Yes” for question number 3, how do you involve in problem identification & improvement of the production process of your company?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. To what extent the worker involvement in Kaizen programs in your workplace can be explained?
  - a) Very good ( ) b) good ( ) c) Fair ( ) d) Poor ( )
  - e) Very poor ( )

6. Do you think the employees' opinions and suggestions are given due consideration in your company?

- a) Not at all. Supervisors and managers don't care employees' opinions ( )
- b) Sometimes Supervisors and managers listen to their subordinates' opinions. ( )
- c) Supervisors and managers in many cases listen to opinions of employees. ( )
- d) Supervisors and managers always listen to opinions of employees from some employees. ( )
- e) Supervisors and managers always listen to opinions of employees from all levels and they are responsive. ( )

7. The feedback you get from the management of the company while you identify problem & come up with solutions is

- a) Highly encouraging ( )      b) Encouraging ( )      c) Neutral ( )
- d) Discouraging ( )      e) Highly Discouraging ( )

8. As an employee what is your level of satisfaction because of implementing kaizen?

- a) highly Satisfied ( )      b) Satisfied ( )      c) Neutral ( )
- d) Dissatisfied ( )      e) Highly Dissatisfied ( )

9. Do you like being part of Kaizen activity in your work station?

- a) Yes ( )      b) No( )      c) I don't care( )

10. If your answer for question number nine (9) is "No" please specify the Reason.

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11. In order to have standard working place which of the basic kaizen practices you practiced? (If you have more than one answers you could select the corresponding bracket)

- a) Sorting ( )      d) Sustaining ( )
- b) Standardizing ( )      e) Shining / Cleaning ( )
- c) Set in order / Arranging. ( )

12. Is there any mechanism that helps you always to remember practicing kaizen?

- a) Yes ( )      b) No ( )



**Table 2. Views on the practice of Kaizen**

No	Statements	5	4	3	2	1
1	There is an established system for training and education in the organization.					
2	There is coordination, communication and integration within departments that foster Kaizen implementation					
3	The kaizen technique increased employees'/team members interest (voluntarily) in the work area.					

**Table 3. Observation Checklist over all activity of the 5s program in the sample organization**

The rating scale: which presented during observation in the Fafa food S.C Food  
5=excessively available,4=sufficiently available, 3=moderately available,  
2=Available,1=Unavailable

No	Statements	5	4	3	2	1
	<b>I. SEIRI – (SORTING)</b> clutter free and tidy environment in premises, inside Offices, Work Place, etc. Evidence of removal of unwanted items should be evident all around.					
1	Tops and insides of all cupboards, shelves, tables, drawers, etc. free of unwanted Items					
2	Notice Boards – Current Notices with removal instructions					
3	Rules for disposal with red tags, etc					
	<b>II. SEITON – (SETTING / ORGANISATION)</b> Ability to find whatever is required with the least possible delay, evidence of eliminating the waste of time throughout					
1	Factory/Stores, etc., have clearly marked grid reference					
2	Gangways clearly marked with passageways / entrances & exit lines / curved door openings/ direction of travel					
3	Switches, fans regulators, etc., labelled					
	<b>III. SEISO – (SHINING / CLEANLINESS)</b> <b>daily self-cleaning (3 min./5 min.)</b>					
1	Use of adequate cleaning tools is evident 23 Storage of cleaning tools – brooms/maps/other equipment					
2	Machines/equipment/tools/furniture at a high level of cleanliness & maintenance schedules displayed					
	<b>IV. SEIKETSU – (STANDARDIZATION) 5-S</b> <b>procedures adopted &amp; standardized on Checklists</b>					

1	Visuals on danger/open & shut directional labels on valves/doors, etc.					
2	Maintenance/Storage of files/records in offices/workplaces, etc					
3	Standardized checklists for common Administrative Procedures					
	<b>V. SHITSUKE – (SUSTAIN / SELF-DISCIPLINE) evidence of 5-S group activities &amp; promotion of kaizen schemes</b>					
1	Evidence in carrying out internal audits by patrol teams					
2	Workers receive praise for working safely					

## **Appendix II**

**St. Mary's University**

**School of Graduate Studies**

**Institute of quality and productivity management**

### **Interview (Management)**

This interview is designed to be made with the managers of Fafa Food S.C in light of assessing the company's kaizen implementation practice.

#### **Introduction**

Thank you for your willingness to respond to my questions. The following questions are not meant for testing your knowledge. The aim of this study to assess the implementation of Kaizen in the company and its impact on productivity of the organization.

The questions that will be raised during the interview are;

1. Do you have taken short-term training or long term training on implementing the Kaizen as a management system?
2. Have you started implementing Kaizen as a management system in your organization?
3. What positive changes have you observed in your organization since the introduction of Kaizen strategy?
4. Do you think that the implementation of kaizen helped to improve the productivity, working area and production time improvements of your organization?
5. Do you think your organization use Kaizen effectively today by applying work ethic, disciplines and kaizen culture among workers?
6. What do you think is the best aspect of food processing industries Kaizen implementation for their productivity and competitiveness?
7. Based on your experience implementing Kaizen in your organization and the sustainability today, how likely are you to recommend Kaizen implementation to a similar business enterprise?

**Thank you for your participation!**

**You have been very helpful**

## **Appendix III**

**St. Mary's University**

**School of Graduate Studies**

**Institute of quality and productivity management**

### **Interview guiding questions for Supervisors**

1. What is your role in Kaizen implementation at the case company?
2. Have you ever provided trainings and education on Kaizen implementation to performers so far and how frequently was the event conducted?
3. How was Kaizen as a management system organized and conducted in the factory?
4. How do you compare the wastes before and after implementation of kaizen at the company? For instance, length of the production time, over production, inventory, in the working area?
5. Is there any employee's motivational change towards their job as a result of kaizen implementation?
6. How do you compare the productivity, cost, customer satisfaction and employee's motivational change towards their job as a result of kaizen implementation?
7. What are the challenges you face for kaizen implementation?

**Thank you for your participation!**

**You have been very helpful**

## **Appendix IV**

**St. Mary's University**

**School of Graduate Studies**

**Institute of quality and productivity management**

### **Interview Guiding Questions for Fafa Food S.C Kaizen team leaders**

1. What were the steps of Kaizen program implementation taking place particularly in Fafa Food S.C?
2. Is the company effective in implementing Kaizen management philosophy in Fafa Food S.c? If no, what are the challenges of the Kaizen program implementation in the factory?
3. What benefits have you got from Kaizen program implementation over the traditional management system? (measureable and non measureable achievements)
4. Is the company effective in coordination, monitoring and evaluation of Kaizen intervention? If yes, what are the outcomes registered and gaps identified so far
5. Is the company effective in Kaizen management philosophy intervention and altering the attitude of employees towards the new work culture? If yes. What are the perceived new work cultures due to Kaizen intervention?
6. How do you see the implementation of Kaizen events in the factory increasing, decreasing or staying the same over the years?
7. What mechanisms do you have in place to sustain Kaizen outcomes?

**Thank you for your participation!**

**You have been very helpful**



## Appendix V

### ቅድስተማርያም ዩኒቨርሲቲ

#### ጥራት እና ምርታማነት ፋካልቲ

#### ጥራትና ምርታማነት ትምህርት ክፍል

ይህ መጠይቅ የተዘጋጀው በቅድስተማርያም ዩኒቨርሲቲ በጥራትና ምርታማነት ትምህርት ክፍል ተማሪ ሲሆን ከሌሎች ጋር ሲነፃፅር የምንጠቀሙት ስርዓቶችን ለማረጋገጥና ለማዘጋጀት ነው።

የርሶ መልስ ከዚህ ጥያቄው ጨለማ ንኛው ምትግባር የማውልና ምስጢር ጥራት ምንጭት ለማዘጋጀት ነው።

ለጥናቱ ውጤት ምዕራፍ ስለሆነ እባክዎን መጠይቁን በትክክል ይሙሉ።

#### ሀ) የመላሽ ግላዊ መረጃ

##### 1. እድሜ

ሀክ8-29 (     )                      ለ. 30-39 (     )                      ሐ. ከ 40 በላይ (     )

##### 2. በድርጅቱ ውስጥ ያሉት ያገልግሉት ዘመን

ሀ. ከ20 ታች (     )                      ለ. ከ2 — 5 (     )                      ሐ. 6— 10 (     )  
መ. ከ10 በላይ (     )

3. ጾታ    ሀ. ሴት                                      ለ. ወንድ

##### 4. የትምህርት ደረጃ

ሀ. 1-8                                      ለ. 9-12                                      ሐ. ዲፕሎማ                      መ.  
አንደኛ ዲግሪ                      ሠ. ሁለተኛ ዲግሪ

#### ለከጥናቱ ጋር ተያይዞ የተገኙትን ነገሮች ያላቸው ጥያቄዎች

ተቁ	ዝርዝር	ተስማሚነት ደረጃ (5 = በጣም እስማማለሁ 1 = በጣም አልስማማም)				
		5	4	3	2	1
1	የስራ-ቦታ ላይ ከኔ የሚጠበቀው ንኡስ ሆኖ ሊሆን ይችላል					
2	ስራ-ቦታ በሚመዘኑት መልኩ ለመስራት ነፃነቱ አለኝ					
3	ለምስራቸው ስራዎች እውቅናና እውቅና ተሰጥቶኛል					
4	ስራ ባልደረቦቼ እና አለቆቼ ጋር ጥሩ ግንኙነት አለኝ					
5	የድርጅቱ አካባቢ ለስራ ተነሳሽነት ይፈጥራል					
6	በድርጅቱ ውስጥ የመማርና የማደግ እድል አግኝቻለሁ					

7	የምሰራው የድርጅቱን ግብ ለማሳካት ነው					
8	ዐለቆቹና ክስራ ባልደረቦቹ ግብረመልስ አግኝቻለሁ					
9	የተሻለ ስራ አካባቢ ወይም ደግሞ ባገኝ ስራ እለቃለሁ					
0	ስራላይ የሚገጥሙኝን ግርበራሴ የማስተካከል ነግነት አለኝ					
11	ካይዘንን ፍልስፍና ለመተግበር የሚያስችል በቂ ስልጠና አግኝቻለሁ					
12	ድርጅቱ የካይዘን አተገባበር ውስጥ እየተሳተፍኩ እገኛለሁ					
13	ድርጅቱ በሰራተኞች መካከል አድሎ ይፈፀማል					
14	አለቆቹ እን እኔ መካከል መልካም ግንኙነት አለ					
15	የድርጅቱ መዋቅር ጥሩ የአሰሪና ሰራተኛ ግንኙነት ፈጥሯል					