PRODUCTION & MANUFACTURING | RESEARCH ARTICLE

Kaizen implementation in industries of Southern Ethiopia: Challenges and feasibility

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ABSTRACT: Continuous improvement strategies are the way of making small incremental improvements in the organization processes. These organizations are in a constant need to maintain a low cost of quality, reduce waste, trim production lines, and speed up manufacturing to achieve a maintain competitiveness. Companies both from developed and developing countries are striving to acquire the habit of improvement using Kaizen, as well as to focus on a customer-driven strategy to improve productivity. The quality of products and services are continuously amassing marginal improvements over time. Kaizen, a Japanese concept that calls for continuous improvement has introduced in Ethiopia to strengthen organization performance through productivity and quality improvement. Even though, the interest in Kaizen implementation has been elapsed twenty years officially, the fruits of implementation rarely observed. This paper examines the acceptability and feasibility of Kaizen among organization in Southern Nation sand Nationality and People Regional State. A survey of 71 stakeholders and 24 pilot enterprises conducted out using questionnaire, interview, and observation in Region. The study

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PUBLIC INTEREST STATEMENT

Kaizen is a Japanese term that was launched by Masaaki Imai in Japan in 1986. Kaizen is a combination of two words which are: KAI (meaning change) and ZEN (meaning for better); thus it is defined as continuous improvement in all aspects of organizational performance. It promotes to seek more ways of small, incremental yet never-ending improvements in every process. It is of paramount importance for organization to have a well-implemented continually improving system with less and less investment of resources; which is the central aim of Kaizen. Therefore, this paper tried to investigate the acceptability and feasibility of Kaizen among organization in Southern Regional State. However, the findings of the study revealed that that Kaizen is acceptable and suitable among organizations. The study also found that the executives of the enterprises lack attention and support to the Kaizen teamwork.
revealed that participants demonstrated willingness to implement Kaizen. However, the study revealed some challenges confronting the feasibility of Kaizen practices. The results of the study have shown that Kaizen is acceptable and suitable among organizations under the study though its feasibility is very challenging. The study also found that the executives of the enterprises did not seem to be committed to the Kaizen teamwork. Though vital for continuous improvement, the front line workers are rarely invited to participate in teamworks.

**Subjects:** Industrial Engineering & Manufacturing; Manufacturing Engineering; Engineering Management; Electromagnetics & Communication; Engineering Economics

**KEYWORDS:** Acceptability; feasibility; Kaizen; productivity; suitability

1. **Introduction**

Due to the low level of competitiveness, problem observed in productivity and high wastes, enterprises today are trying to use the Japanese management system known as Kaizen to satisfy their customer & to meet these needs. In this era, the world gets organized in the form of economic unity, benchmarking the positive experiences of other countries with regard to innovation. A number of business organizations and firms are craving to be effective entities in order to enable them to compete effectively in the ever-changing globalized market-based economy. Organizations can no longer maintain to be competing locally; they have to strive to the world best if they are to survive the tough business competition. A continuous improvement is, therefore, an essential requirement for sustaining and gaining a competitive advantage for any business organizations. One of the ways that those organizations and firms can improve their competitiveness is by improving effectiveness of their systems.

Kaizen which originated in Japan in 1950s is one of means that has been used widely especially in Asia to improve elements associated with the effectiveness of business organizations, with benefits already well documented (Mureithi, 2013). The Kaizen strategy as applied in both manufacturing and service sectors in different countries in the world. A number of countries in the world, including Ethiopia have been convinced by the positive contributions of the Kaizen system to the quality of business management and products from the firms (Desta et al., 2014). Different countries in the world who applied Kaizen management techniques at various level of practice have encountered multi-dimensional challenges. Japan employed Lean Management and all the concepts which the term carries (such as Just-In-Time, Kaizen, [Sort, Set in order, Shine, Standardize, and Sustain-5S], and others) (Karn, 2009).

In Ethiopia, there are some practices relate to both Western and Japanese Management techniques, like Business Process Re-engineering (BPR), Benchmarking, Balanced Sore Card (BSC), and Kaizen (Berihun, 2014). From the different literatures reviews, it found some possible barriers or challenges of Kaizen initiative during the implementation effort in organizations. In the implementation of Kaizen approach, much of the responsibility lies with upper management (Lemma, 2018; Rahmanian & Rahmatinejad, 2013). Pitfalls include the tendency of upper management to micromanage the teams and lack of initial training in teamwork effectiveness (Chen et al., 2000). Besides, a lack of communication and coordination between departments also appeared (Garcia & Rivera, 2016).

The wastes that are occurring inside the manufacturing industries are reducing the productivity leading to higher cost and to lower quality of the finished goods delivered to the clients as discussed previously. Most literature indicates that Kaizen can radically improve processes (Bhoi et al., 2014; Lemma, 2018; Rahmanian & Rahmatinejad, 2013). Typical savings for setup time are 90%, for productivity 20–30% and one-piece-flow projects 50% (Laraia et al., 1999). These demonstrate that the benefits could be gained from successful implementation of Kaizen. However,
Kaizen cannot be that easily described and implemented. Implementation of Kaizen needs involvement of the management team as well as the workforce. It needs to be implemented top down in order to improve processes later on bottom up. This is probably one of the reasons why most companies fail in implementing Kaizen concepts in full scale (Maarof & Mahmud, 2016).

A number of manufacturing industries in Ethiopia currently are trying to use Kaizen approach methods that will achieve high productivity and excellent quality standards to make them more competitive in the globalized, international markets (Desta et al., 2014; Otsuka et al., 2018). Most of the initiatives taken for quality and productivity improvement are through top-down approaches (government initiatives). On contrary, many manufacturing companies are plagued by such problems as high quality rejects, high inventories, long lead time of production, high costs of production, and inability to cope with customer orders. The implementation of the Kaizen management techniques could enable enterprises in Ethiopia to identify and solve their current manufacturing problems without employing high-tech approaches, only involving people on the shop floor in Kaizen activities. The research done by Gemechis (2007) and ILO (2009) indicate that entrepreneurs in SMEs are surrounded by a number of challenges. These challenges have thus hindered the entrepreneurs in the enterprises from making meaningful contributions to the attempt towards poverty reduction in towns, region, and the country as a whole.

The Government of Ethiopia, inspired by the practicality of the Kaizen Policy in the business firms, adopted it as an exemplary approach and tool of growth and development in July 2008. Through the initiation of a Bilateral Policy Dialogue between the Japanese Government and the Ethiopian Government undertaken in 2008, a preparation was made for the implementation of the Policy at a pilot project level. After the Ethiopian Government had prepared itself for two years, the Ethiopian Kaizen Institute was established in 2011 (Otsuka et al., 2018). The Federal Government of Ethiopia with the support from the Government of Japan has initiated Kaizen project in the country as one of strategic intervention for supporting and promoting manufacturing sector growth. The project specifically aims at embracing productivity, quality, and safety improvement among Small and Medium Enterprises (SMEs) in the country. Two phase projects which have implemented for five years from 2009 to 2014 through the Ethiopia Kaizen Institute in collaboration with the Japan International Cooperation Agency (JICA). The projects are perceived as an opportunity for the local entrepreneurs to learn and emulate the knowledge from the Japanese experts for the development of the local Small and Medium Enterprises (SMEs). The project started with training local experts who are in turn used as trainers of local entrepreneurs through seminars and on-site trainings.

Different organizations have continued implementation of Kaizen. However, there is lack of systematic evidence to support whether or not Kaizen will be successfully implemented among SMEs in Southern Ethiopia. Accordingly, this calls for academic inquiry to assess its challenges and feasibility and makes this study particularly crucial and timely. This research attempts to address basic issues involved with the application of Kaizen in the Southern Ethiopia, and to assess the level of implementation and challenges of the executives, implementers, employees, and owners of Enterprises. Therefore, the general objective of the study was to examine the challenges and feasibility of Kaizen strategy among Small Medium Enterprises in Southern Ethiopia.

2. Literature review

In the decade of 1980, management techniques focusing on employee involvement, empowerment through teamwork approach, interactive communications and on improving job design were not new. However, Japanese companies seemed to implement such techniques much more effectively than others. The business lesson of the 1980s was that Japanese firms, in their quest for global competitiveness, demonstrated a greater commitment to the philosophy of continuous improvement than Western companies did (Bowles & Hammond, 1991). For such a philosophy the Japanese used the term Kaizen.
Kaizen means continuous improvement involving everyone in the organization from top management, to managers – then to supervisors, and to workers. In Japan, the concept of Kaizen is so deeply ingrained in the minds of both managers and workers that they often do not even realize they are thinking Kaizen as a customer-driven strategy for improvement (Imai, 1986a). This philosophy assumes according Imai that “our way of life—be it our working life, our social life or our home life—deserves to be constantly improved”. There is a lot of controversy in the literature as well as the industry as to what Kaizen signifies. Kaizen is a Japanese philosophy for process improvement that can be traced to the meaning of the Japanese words “Kai” and “Zen,” which translates roughly into “to break apart and investigate” and “to improve upon the existing situation.” The Kaizen Institute defines Kaizen as the Japanese term for continuous improvement. It is using common sense and is both a rigorous, 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 (Barnes, 1996).

Improvement begins with the admission that every organization has problems, which provide opportunities for change. It evolves around continuous improvement involving everyone in the organization and largely depends on cross-functional teams that can be empowered to challenge the status quo. Kaizen is a familiar word for the Japanese. In its direct translation, Kaizen simply means “improvement,” without any concept of time frames. On the other hand, the term Kaizen used in management means the creation of a system, which enables continuous and sustainable improvement for an organization. Since global competition calls for never-ending improvement, the goal of Kaizen activities is not static and always has to be shifted to a higher level. Kaizen has two definitions. The broader definition of Kaizen encompasses various production and quality management tools under the umbrella of Kaizen philosophy. On the other hand, the narrower definition is improvement of the workplace (“gemba”) derived from proposals from the workers on the basis of a quality control circle (QCC) and a suggestion system (Cheser, 1994). This paper adopts the broader definition of Kaizen.

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 manufacturers were urgently trying to catch up with the standards of American and European manufacturers. Initially, efforts were made to learn from western management systems, particularly the statistical quality control methods. Annual award for quality management introduction, The Deming Prize, has contributed to awareness among enterprises and provided opportunities to learn from best practices. Through this process, the western management strategy was combined with Japanese management methodologies and gradually developed into the Kaizen system (Desta et al., 2014).

2.1. Empirical literature review

2.1.1. Kaizen implementation in world
In recent years, various studies have been conducted on the transfer of Japanese production systems, including Kaizen, to other countries. For example, Hong et al. (2006); Taylor (1999); and Aoki (2008) examined the transferability of Japanese practices to China (Anh et al., 2011). Saka (2004) examined the diffusion of Japanese operations, including Kaizen to the UK while Kenney and Florida (2000) looked at the transfer to the US. Germany also practices the suggestion system of Kaizen (Hultgren, 2008). In Canada, there is an application of Continuous Improvement (CI) of Kaizen philosophy which consists of improvement initiatives that increase successes and reduce failures (Bhuiyan & Baghel, 2005). The results of studies on success of Kaizen transfer are mixed. Fukuda (2010); Kono (1982); White and Trevor (1983) found that Kaizen was not successfully transferred. Maarof and Mahmud (2016) have review of contributing factors and challenges in implementing Kaizen in small and medium enterprises in ASEAN Economic Community (AEC).
It is therefore asserted that Kaizen approaches were not easily adopted abroad due to such environmental factors as the differences in national culture and working ethics (Anh et al., 2011). However, along with national cultural aspects, scholars argue that the adoption of Kaizen highly depends on some specific organizational culture such as centralization of authority and cross-functional cooperation (Recht & Wilderom, 1999). In contrast, Adler et al. (1998) found that Kaizen was successfully transferred, in particular at NUMMI, a Toyota/General Motors joint venture.

2.1.2. Kaizen assistance in Africa

Otsuka et al. (2018) have published a book in title applying the Kaizen in Africa: A new avenue for industrial development. JICA has been conducting Kaizen projects in 8 African countries and training programs for more than 25 countries in Africa, which have demonstrated thought-provoking results. However, it cannot be said that Kaizen is widely known in Africa. For this reason, this book explains what Kaizen is, how it was applied in developing countries, and how concrete tools and methodologies are implemented while explaining the empirical knowledge obtained through practical achievements, as well as theoretical reasons, to support the belief that Kaizen is an effective entry point for industrial development in Africa. Kamau (2012) examined the factors influencing the implementation of quality standards (Kaizen) in Kenyan flower industry. His study indicated that the following factors influenced implementation of Kaizen; teamwork was leading in influence, followed by training, followed by management support and last was education level of workers. The researcher concluded that teamwork was very important in the implementation of Kaizen while education level had very little influence on Kaizen implementation.

Kaplinsky and Posthuma (1994) who studied Japanese management techniques and their transferability in India, Brazil, the Dominican Republic, Mexico, and Zimbabwe argue that Japanese management techniques were adopted in these countries because of the fact that they are late starters and were seeking to be innovative. Hosono (2009) also endorses the view that Kaizen as well as Japanese types of Total Quality Circles (TQC) and Total Quality Management (TQM) can be introduced to countries where the culture is very different from that of Japan. Kaizen has become a global activity spread by multinational companies and their employees. It has become popular not only in the manufacturing sector but also in the service sector. However, proliferation of Kaizen in Africa is still very small due to the limited number of players who bring in the practice.

2.1.3. Kaizen in Ethiopia

Since Oct. 2009, shortly after the introduction of a nationwide Business Process Re-engineering (BPR) to bring radical changes among state institutions but in the process, virtually stalled them for months and now widely deemed to be a failure (Desta, 2013). The Ethiopian government has started advocating the idea of Kaizen among private and state-owned companies. The idea was first brought to the attention of Ethiopia’s late Prime Minister Meles Zenawi in 2008. Subsequently, Ethiopia has set up the Ethiopian Kaizen Institute (EKI) in Nov. 2011 with the help of JICA, the Japanese foreign aid arm, which has developed a five-year project to help medium and large size companies owned by both state and private businesses improve their management skills and productivity.

As a project, Kaizen in Ethiopia was designed to consist of three phases. The first phase which started in August, 2009, reviewed the quality and productivity of 63 companies. After preliminary diagnosis of these factories, 30 companies were selected based the following criteria: (1) proximity to Addis Ababa, within 100 km distance, (2) contributions to exports and/or imports, (3) scale of capital, and (4) number of employees. Then, the employees of the pilot companies were sent to Japan, Egypt and Tunisia to get practical training and learn from the Kaizen workers in these countries. In October 2009–2010, by the end of the first phase of the project, from the thirty pilot companies, only 6, 4, and 8 companies were finally chosen by Ethiopia's Kaizen Institute for having high possibility, good possibility, and some possibility respectively to become Kaizen model companies. Though the successful implementation of Kaizen is based on the active involvement of the
entire workers as well as management staff across spans of activities with special emphasis placed on nurturing the culture of continual small improvements, which overtime would yield large results in the “form of compound productivity improvement.” Nowadays Kaizen projects were practiced throughout the country especially in government-owned public service centers like Universities, TVET colleges, SME, Sector offices, and also selected private industries.

2.1.4. Kaizen practice in SNNPRS
The initiative to introduce Kaizen Practice in SNNPRS was taken by the regions Trade and industry Bureau so as to spread the Kaizen philosophy throughout the region and capacitate different industries and organizations with the aim of enhancing their performance (quality and productivities). Such effort realized in collaboration with the Ethiopian Kaizen Institute by launching big Kaizen day and intensive training that lasts for a month from November 03– to December 04 2007 E.C., which consists selected sectors and enterprise Construction sector (SNNPR Housing construction bureau and Construction Design and Control Bureau) Enterprises like TVET sectors (Hawassa Polytechnique and Hawassa Tegbareid College) COC center, Technology Transfer and Accumulation Bureau and model medium- and small-scale enterprises in addition to Sectoral offices administrators and development agents were included (SRBoTI, 2017). There is a striking lack of empirically based framework for transferability of Kaizen to Southern Ethiopia. Being a newly introduced concept in Southern Ethiopia, it was not certain whether or not Kaizen would be successfully implemented among SMEs in Southern Ethiopia. This paper therefore, provides additional insight for the transferability of Kaizen by examining challenges and feasibility among SMEs in Ethiopia.

3. Theoretical framework
From the results of literature review, we adopted the Johnson and Scholes Model of Suitability, Feasibility and Acceptability theoretical framework for our research as selection criteria to evaluate strategic options (Gordian Bwemelo, 2014; Gordian S. Bwemelo, 2017). According to Johnson and Scholes (1993), a strategic option must be evaluated before implementing in a new context. Johnson and Scholes (1993) suggest three “Strategic Option Evaluation Tests,” which are helpful in evaluating a strategic option before applying to a particular environment. These are Suitability Test, Acceptability Test, and Feasibility Test. Figure 1 demonstrates Johnson and Scholes Model of Suitability, Feasibility, and Acceptability. The Test of Suitability considers whether the option is the right one in given circumstances. According to the Suitability Test, if a strategic option helps an industry to overcome a weakness such an option would be suitable for application (Senaratne & Wijesiri, 2008). Low levels of productivity, high production costs, insufficient quality, and poor safety are significant weaknesses among small and medium enterprises in Ethiopia industry (Beshoh, 2011). Thus, Kaizen will be regarded as a suitable strategic option if small and medium enterprises declare that it has eradicated such weaknesses.

The Feasibility Test is concerned with determining if the strategy can be made to work successfully using the organization’s resources (Senaratne & Wijesiri, 2008). It focuses on evaluation of the internal capabilities of the company. For example, if the existing employees and management have no required knowledge and skill set, can they be trained? Are there resisting forces due to management style, organization structure, and cultural reasons? The Acceptability Test considers whether the strategic option will gain crucial support from the people it needs to or whether it will lead to opposition or criticism (Senaratne & Wijesiri, 2008). The general management theorists argue that people will accept new philosophies if they accept its principles and believe that they are true (Carnall, 1990). Thus, if small and medium enterprises are to accept Kaizen, they should believe in these principles and demonstrate readiness to implement Kaizen.

Based on the Johnson and Scholes Model, the research used to examine the acceptability, suitability, and feasibility of Kaizen implementation. On the other hand, the literature indicates that successful implementation Kaizen requires the organization to put emphasis on continuous improvement, teamwork, improvement suggestions, process-oriented thinking, elimination of waste, and standardization. It is further recognized that 5S–Kaizen 5S lays the foundation for all
other Kaizen activities. Given these principles, the question that needs to be addressed is: Are the Kaizen principles and methods that are embedded in the Japanese culture and management systems transferrable to the Southern Region, Ethiopia context considering our environmental differences in terms of culture, management systems, and behavioral patterns?

4. Methodology
The Kaizen methodology has been used extensively for improving the organizational work in factories and actual methods used to manufacture products. Kaizen will provide the company with immediate tangible results, motivation, and ongoing continuous improvement within the company. The awareness of Kaizen, its implementation process, and the effects of using this strategic management system in the companies are measured through performance indicators generated from questionnaires, interviews, direct observation, factory-developed metric systems, and published records by the companies’ resource planning and research centers. The data have been collected by interviews, study of the previous records, and observations. The relevant information will be taken into account and analyzed by inspecting the pitfalls of the existing system of the concerned SMEs.

Generally, we can summarize research methodology used for the research work in the six steps: extensive literature survey, preparation of questionnaire/interview questions, pilot testing of questionnaire/interview questions, data collection, and analysis. The study was conducted in Hawassa City, Sidama Zone; Welaita City; Welaita Zone; ArbaMinch City, GomoGoffa Zone; Dilla City, Gedeo Zone in Southern Nations & Nationalities Regional States where the first phase of Kaizen project took place. A total of twenty-four medium service giving public and manufacturing enterprise and 50 small enterprises participants representing various enterprises participated in the sensitization seminars.
Judgmental sampling was used to select enterprises to participate in the research. Sixty enterprises from S/N/N/P/R/state were selected to participate in questionnaire on Kaizen, and each participating enterprise was asked to decide on whether or not to participate in research. Out of the 60 invited enterprises 30 were represented in the questionnaire survey. However, due to limited number of local trainers, only 23 enterprises were selected to participate in the first phase on which this study is based. The data collection activity was guided with a structured questionnaire. The thematic area comprises of seven sections: general information about the company, knowledge and attitude, acceptability and suitability, feasibility, achievement during initial Kaizen implementation, and Challenges/barriers faced during implementation.

The second phase will involve direct observation, photography, and formal interviews with entrepreneurs and employees to address two questions about the effectiveness of Kaizen implementation in the selected enterprises:

- To what extent did the participating enterprises manage to implement Kaizen?
- What challenges did the enterprises experience in transforming their practices in accordance with the Kaizen model?

Two half-day site visits per week were made to each enterprise for six weeks. During the observation, the trainers used structured checklist with a series of standard items and photography to record the improvements made by each participating enterprise. Exit interviews with owners, managers, supervisors, and workers were conducted asking them questions relating to achievements they had made through Kaizen practices and the impediments confronting the implementation of Kaizen in their enterprises. Exit interviews were held in all 23 participating enterprises. The list of interview questions is attached in the annex. The primary data that was collected through questionnaires and interviews would been analyzed by using descriptive statistics such as mean frequency and percentage. And have been presented by using tables and pie charts depending on the nature of the data.

5. Analysis and findings
The results of field analysis were presented in this section. As per our discussion on the previous section, the results of questionnaire survey as part one of our discussion. The second section discusses the results of our interview and observation.

5.1. Results of questionnaire survey
The field data collected for six months in different cities. For our purposeful sampling, we have collected the enterprise data from Southern Regional Trade & Industry Bureau. The questionnaire survey has focused on those companies who have shown an interest of implementation that supported by commitments. We have communicated the respondent through mobile telephone and personal contact. The list of city and number of respondents are shown below in Table 1.

| No. | Zone/City      | Number of respondents | % Share |
|-----|----------------|-----------------------|---------|
| 1   | Hawassa City   | 14                    | 41      |
| 2   | Arbaminch City | 12                    | 35      |
| 3   | Welaita City   | 6                     | 18      |
| 4   | Yirgalem City  | 1                     | 3       |
| 5   | Other Zones    | 1                     | 3       |
|     | Total          | 34                    |         |
The data collection has been done according to the research action plan. All questionnaires were collected from respondents from different sectors. Figure 2 demonstrates the distribution of the respondents from different sectors.

5.1.1. **General information about the respondents**
The data were analyzed using descriptive statistics and diagrams. The first analyses involve profiling the background of the respondents of the companies. 79% of the respondents were male and 21% were females. Of the respondent, 31%, 22%, 21%, and 13% are general employees, industry development expert, technical and vocational college trainer, and top-level managers respectively. Figure 3 shows the position and responsibility of the respondents. The educational backgrounds of the respondent have shown that a large number of the respondents are highly trained. About 72% are diploma or degree holders (that is, 13–18 years of education), and 9% have achieved their Masters' Degree. In terms of ownership, ninety of the companies are privately owned (49%).

5.1.2. **Suitability test**
According to the discussion in our research framework, if the enterprises are to accept to implement Kaizen, they should believe in these principles and demonstrate readiness to implement Kaizen. In this respect, we have obtained responses about knowledge and attitude with respect to Kaizen motives and training initiation. Ninety-five percent of the respondents have participated in formal Kaizen training activities. All companies have implemented Kaizen at least a minimum of one year. Thirty-nine percent of the respondents have three and more years of Kaizen implementation experience. Ninety-five percent of the respondents have attended regular training. Even though the majority of them (68%) were commented that the time allotted hours/days were not enough. After the implementation stage, 43% of the respondents felt that they had a very clear understanding of the Kaizen strategy. Fifty-five percent of the respondent had a moderate understanding, while for 3% of the respondents were not clear about Kaizen.

![Figure 2. Distribution of the respondents.](image-url)
From respondents’ analysis, enough attention was not given to low-level employees, the manuals and books needed for training were not adequately prepared. The training was only for a short period of time, the companies trained their workers either in-house (35%) or 65% of the training were conducted by other organizations. As the literature suggested, the implementation of the Kaizen management philosophy requires strategic and operational or tactical level strategies for successful achievement (Thessaloniki (2006)). As shown in Figure 6, while 35% of the respondents indicated that they were trained in-house about the Kaizen philosophy, 65% the respondents were externally trained by outside organizations. The respondent has also asked to response the reason behind their involvement. Ninety percent of the respondent has responded Kaizen was beneficiary. About 7% of the respondents have participated in Kaizen because they have ordered by top management. Table 2 shows the reason of their Kaizen involvement.

As the literature suggested, the beginning of Kaizen starts by displaying a level of orderliness and clarity of the work area using the following five steps (5S), as a result of weak awareness training shown by the companies in Figure 4, there was also a lag in the implementation of the Kaizen management system. There was inconsistency in the usage of percentage of the Kaizen tools and techniques during the implementation period. The companies were focused on the initial

| Table 2. Employee reflection toward Kaizen events and activities |
|---------------------------------------------------------------|
| Reason for Kaizen participation | No. of response | Percentage |
| I found that it was beneficiary                                  | 33             | 91.7        |
| I did not have option since it is ordered by top management       | 2              | 5.6         |
| Not to be considered as unique and to follow up others            | 1              | 2.8         |

stage of the 5S (11%), regarded as the initial stage of the Kaizen implementation. Instead of continuous practice within the Kaizen techniques, the respondents felt that they practiced only intermittently.

5.1.3. Acceptability test
As presented above, to achieve continuous quality and productivity improvement, a company has to focus on the commitment and understanding of its employees. Based on this assumption, the study assessed the feelings of the employees during the Kaizen implementation process. As shown in Figure 5, 59% of the respondents accepted the Kaizen philosophy with no confusion, whereas 45% had accepted the Kaizen philosophy with some confusion and hesitation. Only 3% of the respondents accepted Kaizen by considering it as extra burden. In addition, from the response of the respondent, the employers were not happy the training hours they have participated. Sixty-
seven percent of the respondents were not satisfied with training they have obtained. However, 96% of the respondents have participated in the implementation of Kaizen in their organization. Based on this observation, we suggest that the companies should have designed their training strategy to create awareness about Kaizen's philosophy acceptability.

Forty-eight of the respondent companies have stated that partially implemented Kaizen philosophy. Thirty-one percent of the respondent have implemented at full scale (overall organization level). Only 21% have implemented Kaizen at partial level for pilot study. Figure 6 shows the level of Kaizen implementation.

Based on the response of respondent, 87% of the companies have a plan to scale up the implementation to full scale in the near future. This is truly an indication of the acceptability of the Kaizen concepts in the responding industry. Ninety-nine percent of the respondents have agreed to follow the principles of Kaizen continually in the future to support the attainment of your organizational plan and objectives. Eighty-seven percent of the respondents have taken refreshment trainings after the first induction/awareness creation made to introduce Kaizen philosophy. Moreover, 81% responds that it would be necessary to have refreshment training again.

5.1.4. Feasibility test
The respondents have shown a higher level of satisfaction to Kaizen philosophy and principles implementation to enhance their organizational performance. Figure 10 demonstrates the Kaizen philosophy and principle level of satisfaction. Sixty-eight percent of the respondents have responded as high and very high level of result due to the implementation of Kaizen. However, 35% respondents have responded as average and low. This result has shown that there is a higher level of satisfaction in the Kaizen implementation. Even though there are still considerable, numbers of respondents has an average and low satisfaction level.
From the above response results, considerable number of respondent has expressed their average and low level of satisfaction. The next question has asked their reason for lower and average satisfaction. Table 3 below has presented their reasons for such level of satisfactions. Sixty-seven percent of the respondent has responded as the workers did not accept it willfully.

Structured checklist was used to record scores relating to achievements made by individual participating enterprises in implementation of Kaizen basic principles. The respondents were asked to rate the achievement based on the following level: low, average, very high, extremely high and put (□) mark in the space provided which corresponds to the correct rate the companies

| Table 3. Reasons for such level of satisfactions |
|-----------------------------------------------|
| No. | Reason for level of satisfaction | Frequency | Percentage |
|-----|---------------------------------|-----------|------------|
| 1   | Kaizen principles won’t work for your kind of organization | 4         | 11.8       |
| 2   | Even though it works its benefits were insignificant | 4         | 11.8       |
| 3   | Because the workers did not accept it willfully | 23        | 67.6       |
| 4   | Leaders didn’t play their leading role | 2         | 5.9        |
|     | The implementation carried out wrongly | 1         | 2.9        |
|     | The implementation carried out wrongly | 34        | 100        |
achieved. Findings are summarized and presented in Table 1. The results are expressed in terms of mean percentage scores derived from individual enterprise percentage scores against all the items. According to the results in Table 4, leaders’ commitment for sustaining change efforts and in creating learning organization and number/level of defective products, scraps, and by products as generally high in achievements made by individual participating enterprises in implementation of Kaizen. This is an indication that implementation of Kaizen was effective.

5.1.5. Challenges and barriers faced during implementation
Despite the positive achievements obtained during the ongoing Kaizen implementation project, a number of challenges in adoption of Kaizen were identified. Table 5 shows the priority of respondents for challenges for Kaizen implementation. Some of these challenges include: lack of clear procedure, guidance, and knowledge to lead the improvement and failure to motivate employees to participate in Kaizen activities. The study also revealed frequency of breakdown of machineries, volume of raw material stock in store inadequate communication, and considering customers as the backbone of once organization and facilitating for their direct involvement. Furthermore, the study revealed that commitment of top managements in introducing new methods and technologies and playing a leading role, efforts made to raise the quality of products and also service rendered to customers or developing teamwork, number of complaints from customer on improper service/or defective products. It was that employees in most of the pilot enterprises claimed that every decision required approval by their senior managers, thus even little action was not to be taken without approval by seniors.

In most of the enterprises, it was established that many workers have not sufficient education backgrounds such that they could not understand the tools used in Kaizen work environment or observe the established standards. Attitude and misconception about Kaizen posed another

| No. | Activities/duties to be compared | Mean rate at the initial time | Rank |
|-----|---------------------------------|------------------------------|------|
| 1   | Leaders’ commitment for sustaining change efforts and in creating learning organization | 2.9 | 1 |
| 2   | Number/Level of defective products produced, scraps and by products | 2.9 | |
| 3   | Frequency of breakdown of machineries | 2.8 | 2 |
| 4   | Volume of raw material stock in store | 2.8 | |
| 5   | Considering customers as the backbone of once organization and facilitating for their direct involvement | 2.2 | 3 |
| 6   | Commitment of top managements in introducing new methods and technologies and playing a leading role | 2.2 | |
| 7   | Efforts made to raise the quality of products and also service rendered to customers | 2.1 | 4 | (Continued)
| No. | Activities/duties to be compared                                                                 | Mean rate at the initial time | Rank |
|-----|-------------------------------------------------------------------------------------------------|-------------------------------|------|
| 8   | Number of complaints from customer on improper service/ or defective products                   | 2                             | 5    |
| 9   | Level of productivity (outputs obtained for inputs utilized)                                    | 1.5                           | 6    |
| 10  | Volume of finished products stock in storage area                                             | 1.5                           |      |
| 11  | Involvement of top management in leading Kaizen project and their continual support for the success of system | 1.3                           | 7    |
| 12  | Organizational wide consensus created so as to consider quality as must not as an option        | 1.3                           |      |
| 13  | Responsiveness for internal customers request in change efforts and resolving problem that arose among workers | 1.3                           |      |
| 14  | Serving attitudes of servants and immediate response for customers compliant and requests      | 1.3                           |      |

Table 5. Type of challenges & rank

| No. | Type of challenges/ barriers faced during implementation | Mean | Rank |
|-----|----------------------------------------------------------|------|------|
| 1   | Lack of clear procedure, guidance and knowledge to lead the improvement                           | 2.93 | 1    |
| 2   | Failure to motivate employees to participate in Kaizen activities                                   | 2.83 | 2    |
| 3   | Unable to team up and promote the system to the expected level                                         | 2.80 | 3    |
| 4   | Shortage of resources for implementation/ unable to provide required inputs for implementations               | 2.80 | 4    |
| 5   | Resistance to accept improvement/change tools                                                          | 2.29 | 5    |
| 6   | Challenge to maintain standards and improvement efforts                                                 | 2.20 | 6    |

(Continued)
Table 5. (Continued)

| No. | Type of challenges/ barriers faced during implementation | Mean  | Rank |
|-----|--------------------------------------------------------|-------|------|
| 7   | Refuse to acknowledge those who contributed significantly in proposing better ways of doing/ technology | 2.20  | 7    |
| 8   | Lack of commitment to carry out the tasks as per the new design/way | 2.17  | 8    |
| 9   | Lack of consistency in the change effort and diversion of attentions of leaders | 2.12  | 9    |
| 10  | Absence of programmed rewards & acknowledgements | 2.11  | 10   |
| 11  | Lack of discipline to strictly follow the new methods | 2.10  | 11   |
| 12  | Inconsistency in efforts made to improve quality and productivity | 2.08  | 12   |

challenge. Some managers, supervisors, and employees perceived Kaizen as time consuming, costly, quick result oriented, and just the matter of housekeeping. Lack of top management commitment and support was another challenge reported by employees in various pilot enterprises.

5.2. Interview results

The researchers have made an interview and observation on site in five companies who have implemented Kaizen 1–4 years period. The interviewed companies are representative of success, middle, and challenged history. To assess the acceptability of Kaizen, five participants were asked to share their opinion on what benefits they believed Kaizen practices would bring. This was an indication that Kaizen is suitable and acceptable. Likewise, from interviews with participants, it was found that they would benefit a lot from Kaizen practices and principles and demonstrated willingness to practice them. When asked to share their opinions on what they believed Kaizen would contribute to their business performance, participants had a lot to share. However, from the five companies, two private-owned companies still shown their continual commitment. Also, they have believed that they have benefitted makes them to continue their actions. Other three public enterprises have shown a fade of its implementation. At the time of the interview, and observation, we have shown a fade of its implementation and lack of commitment from top managements.

5.2.1. Summary of interviewed respondents

The researchers have summarized the interview results with the following five topics.

Initiation & training: The Kaizen was started with initiation came from S/N/N/P/R/S/Trade and Industry Bureau. Especially, during the discussion, the owner of different companies showed significant interest to introduce the principle to their organization. However, its implementation exhibited flaws in production process, space, and resource utilization problems. The first initiative to implementation was taken midway of 2009. Of course, the companies have faced competition from different opponents; overall company productivity was low at production level. The administrative level also inefficient utilization of resources and spaces were highly observed which
triggered for change initiatives. Induction training was given to all companies by EKI experts for 5 continuous days detail training (administrative and operators took the training all together). General communications were given and in between the training sessions, the necessity of the training were clearly communicated and create sprit of change. All the staffs and operators at all level were trained by experts from EKI for five days. Even though all the respondents agreed that the training was not enough. Especially, all respondents said refreshment training is important for Kaizen implementation.

**Implementation & sustainability**: After the training was commenced a kick of program was organized, big cleaning day was launched and joined as a campaign in which all operators and other staffs engaged in cleaning his/her working environment. The top managements showed their commitment being willing to accept the invitation from Trade and Industry Bureau. Then after the training they have assigned focal persons to manage and control the efforts by forming quality circle and team up all the operators at operational level and also by providing the necessary input materials. In addition, most of them were open to accept suggestions from different sources and also to accept audit reports from experts and to act accordingly so as to create conducive working environment and also to boost productivity. Organizational culture has put its significant impact on the introduction and implementation processes. At the introduction level there observed passive and active resistance from different levels of operators and reluctant to team up. Even some of the operators were unwilling to participate in the sorting and shining activities by considering it as if it is not their job. Afterward through involvement, motivation in kick-off programs and even engaging in teams tried to incorporate all and implement as per the principle. However, the implementation lacks sustainability since strong measurement and evaluation and recognition systems were not created and even the effort loses enthusiasm. This greatly varied from companies to companies. The top managements in private companies have shown better their commitment and continuous follow up. The success of implementation as compared to the mission and vision of the companies were not achieved as the expected level. But they have generally made some improvements in different aspects of the overall organization. Some companies were saved working spaces. It helped to create active environment in which operators at all level at least sit together and discuss on the implementations level, success, and best practices.

With regard to sustaining the factory management give a due attention that they made a decision rather than handling it on expert level to come up with a new reform of structure. So, Kaizen initiative must be operated and managed at business service level that is going to be managed and controlled by those leaders of the corporate service and all core managing directors. Specially in the first implementation era there were so many reasons for the lack of sustainability for the system and to mention the core ones: lack of commitment, rotation of leaders (turn over) and managers, working culture, and sticking on the status-quo, less involvement on the middle level management, misunderstanding of the system (everybody considered Kaizen as a mere housekeeping activity), less rewarding system, and motivation (even though some companies created a system to reward those who achieved more beyond the daily plan it is not as such effective), passive and active resistance from different level operators, considering as extra burden and even sometimes looking for special payment for the tasks in relation Kaizen, inconsistency of efforts from focal person and also quality circle team leaders (seasonal effort), shifting of mind to routine works and refuse to follow procedures and standards, failure to include in the strategic plan, less efforts to raise the system to the next level only focusing on 5S’ activities.

From interviews with owners, managers, supervisors, and workers, it was found that 5S-Kaizen practices contributed to significant improvements. Many participants acclaimed a number of improvements such as creation of clean working environment, enhancement of convenient and visible workflow, enhancement of self-discipline among workers, and improvement of health and occupational safety of workers. Other improvements as per participants’ remarks were reduction or eradication of accidents and mistakes in workplace, easy identification of imperfections and
malfunctions, and reduction of hard manual work. Pictorial illustrations of the improvements made are shown in Annex 1.

**Acceptability and attitudinal change:** The acceptability of the system by management bodies has two faces. The first one states that everybody talks on its applicability and benefit whereas the other face they refuse to stick on the guiding principles and track the output signals. Every manager (at all level) may put the statement everything is going to be done as per Kaizen principle in their annual plan. However, they did not really figure out what is expected as an outcome which is a clear sign that there is no strategic plan which projected Kaizen to the future.

The most challenging part in the first phase (level 1) of Kaizen implementation was standardization and sustaining part. Due to the dragging effect of the traditional approach, everybody wants to keep business as usual practice and difficulties in disciplining once self towards the new approach were highly observed. Even if there are ups and downs in the implementation and sustaining behavioral changes like being concerned for the company growth and development, belongingness, team spirit, and willingness to accept critics, showing concerns in environmental hygiene were observed. The company benefitted a lot by introducing Kaizen that can be expressed in monetary terms and in qualitative way. Kaizen events lack consistency which is the main reason for sustainability problems.

**Feasibility:** According to respondents of the interviewed, the respondents’ people can witness the feasibility of the system without any hesitation. However, they have observed some problems in its implementation for economic feasibility. They were obtained fascinating results because the respondents have generated a huge amount of money with few investments. For the long feasibility, most companies have no doubt on the principles but they have afraid of their technical skill and specializations since most of their employees are at lower level of skills. For the successful implementation and benefit from the system, companies need to care of while introducing for the employees. Since, there are always resistance in accepting and implementing new tools and methods. Therefore, it is better to let the employee first try to sense the pain of the traditional/accustomed way and seek for change. In such times they try to see positively any change initiatives rather than forcing them to accept and consider it as a burden. Standardization and sustaining parts of the 5S principles were still challenging for companies and they are trying to train their employees regularly in formal and informal ways so as to bring cultural changes and work habit discipline. Since, all the respondent companies are at the primary level of Kaizen, they are trying to consider all the principles together at this level.

5.2.2. Success company: case of ETAB soap factory
Currently, the company considered Kaizen as part of its business strategy to achieve its growth and development. Top manager showed his commitment by establishing a new Kaizen structure which has core committee and steering committee that is overseen and report to Deputy Manager. The committee has two wings one in the Operation Management Department and the other in the Corporate Service so that it will engage everyone in the company, i.e. the management (at all level) office holders, experts, technical team leaders, and operators at all level. Being so a total of 52 Quality circles were established 9 at office level, 33 on production areas (operation area), 9 technical levels, and 1 main office (at Addis Ababa). The top management has showed its firm stand and commitment for Kaizen in different ways:

- Steering committee was established under operation manager and corporate service manager and core Kaizen committee was established under each manager’s supervision,
- The first exemplary decision made was that the leadership for Kaizen changed from expert level to corporate service level with new structure,
- Rather than introducing at production level to be exercised at all level and controlled and managed by deputy managers,
• Establishment of clear structure and also memorandum of understanding and agreement to be signed by all exercising bodies and core and steering committee,
• Strong reporting and monitoring system at QCC level and also corporate level.

Moreover, the company management has initiatives in rising up the level of Kaizen implementation one step up from the first stage of implementing 5S toward the introduction of total productive maintenance approach which may put the company as pioneer in the SNNPR to show commitment to stick in the principle and in continuous move. In realization of such ambition, the company is paving the ground toward standardizing of tasks and processes and also cultural development in sustaining the effort towards continual improvements which can be considered as strong platform to graduate from the first level.

However, the company faced the following change management-related problems have observed:

• Accumulation of best practices and documentation problem,
• Weak in measurement of changes and change efforts,
• Inconsistency in change efforts and weak participation of workers in forwarding improvement ideas,
• Forwarding every problem toward higher officials for the remedial action.

Benefits obtained after implementing Kaizen: The researchers have summarized the benefits of Kaizen implementation from the interviewee of the focal person and site observation. So, many improvements (qualitative and quantitatively) were observed in the overall company and the significant ones were presented below:

**Qualitative changes:** The following points are observed qualitative benefits:

• Working culture improvements were observed workers are showing belongingness,
• Rational thinking and demanding people were created,
• Concern of workers towards improvements and problem solving were improved from time to time,
• Relatively conducive and clean working environment were created,
• Cooperation and teamwork efforts were shown,
• Participation of internal workers in revamping projects.

**Quantifiable changes:** The following points are observed quantitative benefits.

• Waiting time for pasta is reduced from 72 h to 48 h which has a great contribution in production cycle time reduction (after suggestions came from individuals from quality circle),
• Searching time for items was reduced to 30–40 s by creating easy access and identification of frequently used materials and tools,
• Winch for material handling and transportation were made from scrapped and unused materials which highly contributes in smoothing material transportation and also reduced manual efforts and energy (simplifying tasks),
• Productivity highly improved after implementation of 5S and up to 45% increase per cartoon were observed per month,
• Batch of production per day increased from 2.1 to 3.5 on average,
• After implementing 5S and introducing customer demand-based production system waiting time (storage of finished goods) for finished product decreased from 21 days to 6 days (finished goods inventory turnover margin),

• Administrative costs were reduced from by reducing the administrative expense ratio from 7.2% to 4.6% which may be estimated up to 4,319,760.17 Birr (1 Birr approximately USD 33, April, 2020) were saved,

• Scrapped materials (metallic and wooden) were entertained differently to contribute for creating conducive environments and also to generate income for the company and by doing so:
  o By utilizing (reusing and selling) scrap material 899.4 meter square free space were obtained which improved space utilization and productivity,
  o Six wheel barrows were made for transporting cartoon and the estimated costs were 6*500 = 3000 Birr (1 Birr approximately USD 33, April, 2020),
  o Eight benches were made to make easy for packing of cartoons which were estimated to cost 4800 birr,
  o Shelved box of size 2.2 m *3 m * 0.5 m was made in order to be used as personal box for workers to secure their belongings and other work-related tools and materials and it is estimated to be 10,000 Birr (reduced theft and loss of individuals belongings’ and also contributed a lot for safety and creating conducive environment,
  o A total of 396,000 Birr (1 Birr approximately 33 dollar, April, 2020) was obtained from sells of scrapped and accumulated metals.

Generally according to the report a total of 4,733,060.17 Birr (1 Birr approximately USD 33, April, 2020) was saved by introducing Kaizen in the organization.

6. Conclusion, implications, and recommendations

6.1. Conclusion
This research was based on the study designed to examine the acceptability and feasibility of Kaizen among SMEs in Southern Region, Ethiopia. The findings of the study revealed that Kaizen was perceived to be effective tools for improving enterprises’ performance and participants expressed desire to benefit from it. Majority of the respondents are willing to continue its implementation. On contrary, the 40% of the respondent was accepted the Kaizen philosophy with some confusion and hesitation. Moreover, the study further revealed a number of challenges confronting the feasibility of Kaizen practices. The conclusion can be drawn that Kaizenas a strategy for improving enterprises’ performance is acceptable in Southern Region, Ethiopia though its feasibility is very challenging.

6.2. Implications of the study
In order to increase the chances for successful Kaizen adoption and implementation in Sothern Region enterprises, sound strategies to transform organizational culture, aspects of organizational culture, attitude, values, mindset, management techniques, and behavioral patterns of managers, supervisors, and employees are necessary.

6.3. Recommendations
For successful adoption and implementation of Kaizen in Southern Region enterprises the study has some recommendations to make.

6.3.1. Recommendations for actions
First, the management should be sensitized and trained to use bottom-up approach of management for effective implementation of Kaizen practices. Secondly, training of employees to let them understand Kaizen related tools should be taken seriously. Thirdly, the management should motivate employees using both monetary and nonmonetary rewards for better performance. Fourth, Kaizen should be strongly continue the National and Regional campaign focusing on
offering further trainings and sensitization seminars. In addition, all organizations who started and planned to implement Kaizen should have a continuous follow-up and commitment for effectiveness of the tools.

6.3.2. Recommendations for further research
The present study had some limitations. First, since the study was confined to S/N/N/R/R/S/R, the conclusions in this study cannot be generalized to all SMEs in the whole country. Second, this report presents the preliminary results findings of the ongoing KAIZEN implementation which mainly focused on 5S-KAIZEN. Thus, other elements of KAIZEN such as Just in Time (JIT), Quality Control Circle (QCC), Quality Control Tools, Total Productive Maintenance (TPM), Automation, Value Stream Mapping, and Material Handling remain unaddressed in the present study. Third, time constraints restricted exhaustive examination of factors influencing feasibility of KAIZEN practices among SMEs in Ethiopia. To complement findings of the present study, further study covering many SSMEs across all regions of Ethiopia is recommended. Moreover, further study should attempt to explore factors influencing acceptability and feasibility of KAIZEN among S/N/N/R/S/R SMEs.

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References
Adler, P. S., Goldoffas, B., & Levine, D. (1998). Stability and change at NUMMI. In R. Boyer, E. Charon, U. Jurgens, & S. Tolliday (Eds.), Between imitation and innovation, the transfer and hybridization of productive models in the international automobile industry (pp. 128–161). Oxford: Oxford University Press.
Anh, P. C., Jing, Z., & Matsui, Y. (2011, July, 12–16). Empirical study on transferability of Kaizen practices. The 11th International DSI and the 16th APDSI Joint Meeting, Taipei, Taiwan.
Aoki, K. (2008). Transferring Japanese kaizen activities to overseas plants in China. International Journal of Operations and Production Management, 28(6), 518–539.
Barnes, T. (1996). Kaizen strategies for successful leadership. Pitman Publishing London. www.Kaizen-institute.com/gemba.htm
Berihun, T. (2016). Practices and challenges of kaizen implementation at Entoto Polytechnic cluster college: The case of Woreda three enterprises of Guile city sub city.
Beshah, B. (2011). Quality management and engineering. Addis Ababa University Addis Ababa Institute of Technology.
Bhoi, J. A., Desai, D. A., & Patel, R. M. (2014). The concept & methodology of kaizen: A review paper. International Journal of Engineering Development and Research, 2(1), 812–820.
Bhuyan, N., & Baghel, A. (2005). An overview of continuous improvement: From the past to the present. Management Decision, 43, 761.

Bowles, J., & Hammond, J. (1991). Beyond quality how 50 winning companies use continuous improvement. Putnam.

Bwemelo, G. (2014). KAIZEN as a strategy for improving SSMEs’ performance: assessing its acceptability and feasibility in Tanzania. European Journal of Business and Management, 6(35), 79–90.

Bwemelo, G. S. (2017). acceptability and feasibility of Kaizen as a strategy for improving SSMEs’ performance in Tanzania. Business Education Journal, III(1), Published Online May, 2017 in. http://www.cbce.ac.tz/bej

Carnall, C. A. (1990). Managing change in organisations. London: Prentice Hall International (UK) Ltd.

Chen, J. C., Dugger, J., & Hammer, B. (2000). A Kaizen based approach for cellular manufacturing design: A case study. Journal of Technology Studies, 27(2), 19–27.

Cheser, R. (1994). Kaizen is more than continuous improvement. Quality Progress, April 1994, 23–26.

Desta, A. (2013). Why Self-proclaimed Kaizen Management is becoming very fashionable in Ethiopia? An Observation Interdisciplinary Journal of Research in Business 2046-7141, 21(1), 08–10.

Desta, A., Asgedom, H. B., Gebresas, A., & Asheber, M. (2014). Analysis of Kaizen Implementation in Northern Ethiopia’s Manufacturing Industries. International Journal of Business and Commerce, 3 (8), 39–57. Apr 2014.

Fukuda, K. J. (2010). Japanese-style management transferred: The experience of East Asia. Routledge.

Garcia, J. L., & Rivera, D. G. (2016). Critical success factors of Kaizen implementation in manufacturing industries in Mexico. International Journal of Advanced Manufacturing Technology. https://doi.org/10.1007/s00170-013-4750-2

Gemecis, T. (2007). Attitude of students for entrepreneurship in Addis Ababa University and RiftVally University. European Journal of Business and Management, 6(4), 350–363.

Hammer, M., Champy, J., & Tathan, R. L. (1993). Reengineering the corporation: A manifesto for business revolution. Harper Collins.

Hong, J., Easterby-Smith, M. P. V., & Snell, R. (2006). Transferring organizational learning systems to Japanese subsidiaries in China. Journal of Management Studies, 431, 1027–1058.

Hosono, A. (2009, October). Kaizen: Quality, productivity and beyond. In Instruction Kaizen in Africa. GRIPSDevelopment Forum.
Hultgren, P. (2008). The motivating suggestion system [Master thesis]. Sweden: Blekinge Institute of Technology (BTH).

ILO. (2009). Women entrepreneurs in Kenya: factors affecting women entrepreneurs in micro and small enterprises in Kenya. Geneva: Author.

Imai, M. (1986a). Kaizen: The key to Japan's competitive success. McGraw Hill. www.Kaizen-institute.com

Imai, M. (1986b). Kaizen: The Key to Japan's Competitive Success. Random House Published.

Johnson, G., & Scholes, K. (1993). Exploring corporate strategy - Text and Cases. Hemel.

Kamau, S. M. (2012). Factors influencing implementation of quality standards (Kaizen) in flower industry: A case of Kariki Ltd in Kiambucounty [Degree of Master of Arts in Project Planning and Management at the University of Nairobi].

Kaplinsky, R., & Posthuma. (1996). Easternisation: The spread of Japanese management techniques to the developing countries.

Karn, P. (2009). “Kaizen” development in Thailand’s industries - A comparative study between Japan and Thailand [MA Thesis]. Waseda University.

Kono, T. (1982). Japanese management philosophy: Can it be exported? Long Range Planning, 15(3), 90–102.

Laraia, A. C., Moody, P. E., & Hall, R. W. (1999). The Kaizen Blitz: Accelerating Breakthroughs in Productivity and Performance New York, USA. John Wiley & Sons, Inc.

Lemma, A. F. (2018). The role of Kaizen in economic transformation. Working paper S33. Overseas Development Institute, 203 Blackfriars Road, London SE1 8NJ.

Maarof, M., & Mahmud, F. (2016). A review of contributing factors and challenges in implementing Kaizen in small and medium enterprises. Procedia Economics and Finance: 7th International Economics & Business Management Conference, 5th & 6th October. (2016): S22–S31. https://doi.org/10.1016/S2212-5671(16)00065-4.

Mureithi, M. A. (2013). Effects of Kaizen tool on organization effectiveness: A Case of Davis & Shirtliff LTD. (Unpublished Masters of Arts), in Project Planning and Management of the University of Nairobi.

Otsuka, K., Kimioki, S., & Tetsushi. (2018). Applying the Kaizen in Africa: A new avenue for industrial development, ISBN978-3-319-91400-8 Palgrave Macmillan. https://doi.org/10.1007/978-3-319-91400-8

Rahmanian, F., & Rahmatnejad, Z. (2013). Impact of Kaizen implementation on performance of manufacturing companies’ staff. European Online Journal of Natural and Social Sciences, 2(3), 1094–1103.

Recht, R., & Wilderom, C. (1998). Kaizen and culture: On the transferability of Japanese suggestion systems. International Business Review, 7(1), 7–22.

Saka, A. (2004). The cross-national diffusion of work systems: Translation of Japanese operations in the UK. Organization Studies 25(2), 209.

Senaratne, S., & Wijesiri, D. (2008). Lean construction as a strategic option: Testing its suitability and acceptability in Sri Lanka. Lean Construction Journal, 2008, 4–48.

SRTBOTL. (2017). Southern Region Bureau of Trade & Industry. Unpublished Annual Report. Howassa.

Taylor, B. (1999). Japanese management style in China? Production practices in Japanese manufacturing plants. New Technology, Work and Employment, 14 (2), 129–142.

Thessaloniki. (2006). Kaizen Definition and principles in Brief: A concept & Tool for Employees Involvement. Michael LOLIDIS.gr. Retrieved May 14, 2013, from http://www.etsugar.gov.et/en/news/item/59-kaizen-helped-sugar-facto.

White, M. R. M., & Trevor, M. (1983). Under Japanese management: The experience of British workers. London: Heinemann Educational Publishers.
ANNEX 1. INTERVIEW QUESTIONS

Part I: Initiation and training

When did your company start the implementation of Kaizen philosophy?

Are there driving forces that urge your company to implement Kaizen?

What were the major activities done before implementing Kaizen in your organization?

How the company did communicate employees on the implementation of Kaizen?

Did employees take training on Kaizen and its implementation?

Part II: Implementation and Sustainability

How many quality circles are established in the company, i.e. both corporate and region? In what way do you manage these quality circles? For instance, their progress, constraints they face in practicing Kaizen.

How the management of your company did demonstrate its commitment to the establishment and persistence of kaizen culture? For instance, implementation and sustain the practices of Kaizen mindset, 5S, muda (waste) elimination, accept suggestion from employees on improvement, and implement those suggestions that are viable and standardization of best practices as well as removing communication barriers.

To what extent does the existing system/culture allow every employee to involve in the improvement of quality and productivity? For instance, empowerment of established quality circle, existence of fair motivation scheme, and recognition for their achievements.

Does the implementation of Kaizen in your company result in organizational success in terms of achieving its vision, mission as well as prime purpose of Kaizen implementation?

Do you think that the implementation of Kaizen in your organization reached on sustainable level? What are the benchmarks/performance criteria’s for measuring the sustainability of the system and how often you check for it? What challenges do the company encounter in implementing Kaizen and sustain as corporate culture? What suggestion do you provide for effective implementation of Kaizen?

Part III: Acceptability and Attitude change

Do you think that all your management teams were in favor of the system and are willing to invest/exert what so ever effort that the system demands for its successful implementation? Do you have included Kaizen as part of your strategic plan and do you have a projected plan for the future?

Does everything running as per the principles and philosophies of Kaizen in your organization? How did you relate your organizational policy cultures and norms with principles of Kaizen? Which parts of the principles were challenging one? What made them challenging?

Have you observed a remarkable change on the behavior, culture, and attitude of your employees after the implementation of the system?
Can you mention some of the outstanding changes observed in your organization to conclude that the system has gained full acceptance?

How do you see the use of Kaizen events in the factory so far, increasing, decreasing, or staying the same over the years?

Part IV: Feasibility

Can you confidentially witness for feasibility of the implemented system Kaizen in your organization in technical, economic, and cultural levels as per your experience (these days and in the long run)? What are your tangible evidences?

Do you have any hesitation on the system feasibility in the long run? If so please share us. And have you ever come up with difficulties while implementing? What are they? What remedial actions were taken?

Have you ever identified any cases/difficulties which calls/demands for further clarification and settlement which strengthens the implementation of the system and its feasibility in the long run?

Which part/phase/philosophies of Kaizen implementation were the most challenging in indoctrinating and also implementing? How did you proceed and owned those challenges?

Is there any part of Kaizen principles you rejected or refused to introduce and implement in your organization? If so what was the reason behind?
