



An Overview on Kaizen System Implementation for Garment Industry

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ABSTRACT

Kaizen means improvement or change for the better. It is the system of small steps for continuous improvement in quality, technology, process, company culture, safety, productivity, etc. The main purpose of this study is to aid small scale industries to use the lean tool Kaizen in the apparel industry in order to increase the increase the productivity, man power resource utilization and work standardization. It will also help in reducing lead times through reducing wastage in material, labor skill and machine, increasing of effectiveness and efficiency in the processes, improved visibility of the process, improved self-confidence and protection of the employees, reduced hindrance, searching time and dangerous conditions. The lean tools can be implemented in any small, medium or large scale industries in any workplace which has the ultimate motive of increasing the productivity and profit to the industry, improving the utilization of workstation, energy, monetary involvement, employee empowerment, self discipline, time management, inventory control, manpower deployment, inventory control, process improvement, reducing lead time, reduction in cycle time, and worker's fatigue and also makes the organization more effective and increases its efficiency. All the 5S tools helps in Sort, Set in order, Shine, Standardize and Sustain will make the workplace clean and hygiene. In Kaizen system, taking the operation breakdown, time study, capacity study, and production study will help to maintain the manpower, number of operations, bottleneck time, layout of the organization, machine sequencing, production per hour, number of machines and SAM. On this basis, great changes can be seen in the industries which altogether will bring in improving the economical status of the country.

Keywords: Kaizen, productivity, continuous improvement, SAM, resource utilization, Employee empowerment

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INTRODUCTION:

Kaizen, a Japanese word meant for "improvement", or "change for the better" refers to philosophy or practices that focus upon constant improvement of processes in any business. Kaizen was first implemented in several Japanese businesses after the Second World War, highly influenced in part by American and European products. Since then, it has spread throughout the world and is now being implemented in many other venues. When it is used in business and applied to the workplace, kaizen refers to activities that continually improve all functions, and involves all employees from the CEO to the assembly line workers [1].

Successful implementation requires total participation of people at all levels of an organization, from the CEO down to janitorial staff, as well as external stakeholders when applicable. Kaizen techniques are not capital intensive and their implementation is not difficult[2]. Kaizen implementation in the organization is a large extent based upon successful training and not prescribed education. The management system helps in attaining high quality and high productivity that could be easily transferred to benefit by making products competitive within domestic and international market [3].

KAIZEN is a system of continual 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 [4]. KAIZEN encompasses all the areas that are related to quality, productivity, cost, and delivery, (QPCD) whose simultaneous improvements are essential in achieving customer satisfaction and success of the organization.

The main attributes of kaizen are continuity in work, participatory approach and continuous improvement with less investment. Kaizen in Productivity is nothing but the reduction in wastage of resources. Productivity involves growth in manner of intelligence and constant support from the

employee to find enhanced, cheaper, easier, faster and safer means of doing a job, manufacturing a product and providing services. Increase in productivity is depending mainly on the better technology and production system [5].

Kaizen involves in setting new standards and maintaining those in an effective way to get more efficiency. Kaizen helps in giving better training to the employees, maintaining safety environment, reducing fatigue to the labor, waste reduction, inventory control, reducing waiting and transportation time, space utilization, better manpower and machine utilization, maintain product and production quality [6,7].

Kaizen is one of the lean manufacturing systems which covers many lean techniques including Kanban system, 5S, total productive maintenance, six sigma, automation, just-in-time, poka-yoke, productivity improvement, etc. All these lean systems help in reducing the waste, eliminating the unwanted or non-value-added activities involved, continual improvement and better-quality products with 100 % efficiency [8].

Kinds of waste:

The different kinds of waste involved in any process in the apparel industry have been listed as following categories. These wastes will leads in less production efficiency, affect quality of work as well as increase in production lead time.

1. **Over production** – Producing more than required quantity at a given point of time i.e. producing items more than actual orders will create excess of inventories, which needs excess staffs, storage area as well as transportation.
2. **Waiting** – An employee waiting for the raw material, machine, or service will leads to more time consumption which delays the productivity. The waiting can occur in various ways for example; due to unmatched worker/ machine performance, machine breakdowns, lack of work knowledge, stock out.
3. **Unnecessary transport** –Unnecessary transportation includes unwanted movement of men, machine, product, tools or inventory from one place to another, which can cause product damage and consumes more time.
4. **Over processing** –Over processing means doing unnecessary work in a process or service or adding more components to a product. Working on a product more than the actual requirements due to improper tools and procedures leads in waste of time and machines which does not add any value to the final products.
5. **Excess raw materials** – This includes excess supply of raw materials, inventory or accessories, WIP or finished good causing longer lead times, transportation and storage costs, production delay, production imbalances, late deliveries from suppliers, defects, and more working time.
6. **Unnecessary movement** –Unnecessary movement is the unwanted motion of raw material, product, tools, machine or manpower which will consume more time and affects the on-time production and delivery of good.
7. **Defects** – Defects in a raw material or cut parts, or damaging the product during the time of cutting, assembling, ironing or packaging will result in bad quality which leads the entire production in risk and loss.
8. **Unused Employee skills** – Wasting of employee talents, their better ideas, skills, creativity and innovations without utilizing them properly by just simply commanding them to follow the rules and orders will be difficult to improve the production and process [9,10,11].

Kaizen -the three pillars

The three pillars of kaizen are listed as follows:

1. Housekeeping
2. Waste elimination
3. Standardization

The management and workers must work together to execute the requirements for each category.

To achieve success on such activities the following three factors must also be taken in account

1. Visual management,
2. The role of the supervisor,
3. The significance of training and creating a wisdom organization [12].

Housekeeping:

This is a process of managing and maintaining the work place, where value is added to the products or services before passing them to next process. This is properly maintained by using 5S methodology. The term “Five S” is framed from the Japanese words first letters which referred to five Performa clean and manageable work area: seiri (organization), seiton (tidiness), seiso(purity), seiketsu (cleanliness), and shitsuke (discipline). The English words corresponding to the 5S's are sort, set in order, shine, standardize

and sustain. 5S system will maintain the orderliness, cleanliness, safety, and ergonomics of the work space. Implementation of Five S will make the industry to be acknowledged as a producer of world-class status.

- Seiri- SORT meant for arranging the things based on their need. The unwanted tools, machines, inventories, raw material or accessories can be eliminated and the needed things can be sort out and arranged visibly.
- Seiton- SET IN ORDER- organizes and arranges the tools, equipments, inventories, etc., by giving proper location and sufficient storage space.
- Seiso- SHINE- refers to proper cleaning of the working environment and should inspect the cleanliness regularly.
- Seiketsu-STANDARDISE- Analyze the value added and non-value-added activity and make the changes needed by implementing the 5S procedure in an organization in a successful way.
- Shitsuke-SUSTAIN- Assign the right job for the right employee, track the work whether it is going in a right way and maintain the work.

The benefits of the five S are as follows: Creates cleanliness, hygienic, pleasant, and safe working environments; improves the employee self-esteem and motivates them; it eliminates various kinds of waste by minimizing the need to search for tools, making the operators' jobs easier, reducing fatigue, and freeing up space; it creates a sense of belonging and love for the place of work for the employees [13].

Waste (Muda) elimination.

Muda in Japanese means waste. The non-value adding activity in any process, machine or people are mentioned as Muda or waste. Muda is any non-value-added task. Waste in Manufacturing can be shipping defective parts, waiting for inspection, Walking and transporting parts, Overproduction, Excess inventory which hides passing on work that contains errors, Signature approvals, files, and excess documentation work. In Kaizen philosophy, the main aim is to eliminate the seven types of waste (7 deadly wastes) caused by overproduction, waiting, transportation, unnecessary stock, over processing, motion, and a defective part [14].

Standardization

Standards are set by management, but they should be able to change when there is a necessity. Companies can achieve systematic improvement as reviewing the standards periodically, collecting and analyzing data on defects, and encouraging teams to conduct problem-solving activities. Once the standards are set then the workers can easily identify if there is any flaw or any problem in any work which helps them to rectify easily. Deming cycle or PDCA (plan-do-check-act) cycle is the right choice for the management to obtain maximum efficiency. The management has to set their plans as a checklist and verify each and every process whether the progress of the work is in a right way. It gives the best and safest way of doing the job, gives a way to measure the performance, give training for the employees, and show the relationship between cause and effect [15].

CONCLUSION

Implementation of kaizen system in any apparel industry will leads in quality improvement of the industry, less in lead time which makes the production better, cost reduction which leads to profit, less time consumption which leads to quick delivery of products and improvement in inventory control and safety measures.

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CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest

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