

CHAPTER 2

LITERATURE REVIEW & THEORITICAL BACKGROUND

2.1. Literature review

The literature review evaluates that current research brings positive improvements in working conditions also generated positive business outcome in the SMEs. Learning from some researcher can bring benefits to determine what method is the most suitable method to finish the problem that happen in the SMEs. Reading some previous research also help to understand a new method. There are some researchers that the student find, some of the researcher have the same topic about workplace improvement but with different method to improve the workplace.

The objective of workplace improvement in SMEs is to evaluate the effect of Work Improvement in Small Enterprises (WISE) improvements on both workloads and productivity as well as on managers satisfaction with them (Takeyama, 2014). The approach of WISE training course consisted of surveying workplaces using an action-checklist, learning locally achieved improvements, group work for planning and prioritizing improvements, and implementation of those improvements (Takeyama, 2014).

The objective of workplace improvement in small home industry (WISH) is to evaluate improve work conditions among home manufacturing (Dewi, 2015). The approach of using WISH for the small home industry is applied by active involvement of home workers in evaluation and improvement of working conditions. The method used is WISH action checklist and by using this method the result is to provide better place of workplace, low cost and ready to do implementation from improvement to improve the safety work condition (Dewi, 2015).

Work place design is one of the major determinants of employee job performance in all organization (Mendis, 2016). Mendis (2016) also stated that matching work place design with employee necessities is very essential for obtain maximum contribution of employees towards organization objectives. The method that used by Mendis (2016) is by doing an observation and some interview with the author in the company and then do the designing.

The result of workplace improvement in SMEs by (Takeyama, 2014) is able to evaluate the improvements after implementing WISE in the enterprises. The result of management commitment to safety & risk of workplaces is the workplace is more better than before, all worker can manage their responsibilities during the work (Sang, 2015).

By learning so much article and research by many researcher, mostly the method that used by the researcher first is by doing observation, and after doing the observation then it the implementation of the method.

2.2. Theoretical background

2.1.1. Workplace definition

Workplace is defined as an ecosystem comprising a careful balance of people, process and place developed to support people and the nature of their work (Dewi, 2015). Workplace is a building a room where people perform their jobs. This including the building and the surrounding work areas. Workplaces is a place where people interact and communicate together and do some task to reach their own propose goal.

2.1.2. Characteristic of a workplace

A safe workplace is an important requirement for the employee to work in one places. This safe workplaces can bring a lot benefits to the employee either to the organization. A workplace can be safe when:

- a. Warm and cheerful atmosphere
Doing the work in a warm and cheerful atmosphere, then the work will be enjoy. If the atmosphere is too serious then it will affect the work productivity of the worker.
- b. Good interaction with good communication
Doing an interaction with other people will lead to a good working condition. If there are less interaction with one people to another, then the worker will be a stiff person.
- c. Free to share ideas
If there a no limitation in sharing ideas with partners, then it will increase the work productivity. If the work productivity is high then output will be maximum.

d. Clean workplace

A clean workplace will lead to a better physical work environment. If the workplace is dirty, then the work productivity will decrease.

e. Good management

General work conflicts due to different arguments. However, with good management, everything can be controlled. Good management is usually open and accepts ideas from its employees.

2.1.3. Workplace improvement

Workplace improvements is an action of making the workplaces more effective and efficient. The action of workplace improvement can be done by doing some treatments in the workplaces. This treatments are based on the problem that occur in the workplaces.

2.1.4. Benefits of workplace improvement

- a. Making the work area cleaner, neater, safer and more enjoyable.
- b. Increase utilization of production floor as a storage space.
- c. Minimizing wasted time in finding tools, materials and documents.
- d. Reduces the accident of machine because the machine is always clean and maintained, making the equipment more durable and long lasting.
- e. Increase the workers responsibility and ownership in the work area.
- f. Reducing or even eliminating potential hazards or anything that is a common cause of workplace accidents.
- g. Increase work productivity by restructure good materials and work equipment, worker can work more effectively and efficiently.

2.1.5. Work Improvement in Small Enterprises (WISE)

The purpose of WISE is provides practical advice to worker and manager of small enterprises to implement simple, cost effective changes that improve working conditions in their enterprise (Kawakami, 2004). Such improvements are designed to increase productivity, quality and benefits for both the enterprise and its workers in the short- and long term. The technical areas that covered WISE (Work Improvement in Small Enterprise) is Occupational Safety and Health, and Social and physical working conditions.

2.1.6. Steps to make the WISE guideline

a. WISE Component

According to (Kawakami, 2004), there are two components in WISE which are Physical Work Environments and Social Work Environments. Physical Work Environments is the condition where workers can interact directly with the tangible workplace.

b. Aspects of Physical Work Environment

i. Materials storage and handling

Material storage is a material that is kept in storage that contain of shelves, rack, pallets and etc. This storage is to maintain all the material that have different kind of size, shape, weight, height. Handling is any transportation or supporting of which may include lifting, putting, pushing, pulling and carrying. Handling also is moving materials from one place to another place.

1. Clear and mark transport ways.

A clear pathway mark is needed in the industrial workplaces. A clear pathway is needed because the function of pathway mark is to distinguish between raw materials and products, a danger zone and safe zone, the aisles that workers can access and the aisles that workers can't access. Clear pathway mark in the workplace can influences the flow of work, the arrangement of materials and products, reduce the opportunity if accidents. Without any pathway mark, it can increase the possibilities of accidents that can cause some injury, inefficient flow of work.

2. Use Hand trolley, hand truck, stacker and other devices when moving materials.

Material handling tools are needed in the workplaces. Using the material handling tools, the workers can easily move, transfer, and replace the raw materials and products. Material handling tools also can reduce the opportunity of the raw materials and products getting damage, and it can also save the processing time while moving the materials and products.

3. Provide multi-level shelves or racks near the work area for tools, raw materials, parts and products.

A shelves is the most needed object in keeping the materials and products in the storage. Shelves can accommodate materials and products in high quantity. If there are shelves in the storage, then the workers can distinguish the materials and products easily. Using shelves in the storage can also

keep the materials and products in high quality. So, the opportunity of materials and products getting damage in low.

4. Use specifically designed pallets or containers to hold and move materials, semi-finished products and products.

Pallets and container is an important handling tools during the production process. The function of these handling tools is to keep the Work In Process (WIP's) safely and avoided from some damage. Pallets and containers is more effective when each machine have their own pallets and containers. Using these handling tools, the workers can also carry the Work In Process (WIP's) is a high quantity in the same time.

ii. Workstation design

1. Put frequently used tools and materials within easy reach of workers.

Keeping the tools near the workers and putting it a clear place will help the workers during the work. The workers do not need to spent much time of finding the tools, because the are visible and easy to reach by the workers.

2. Provide a placed home for each tool.

Providing the home place tools is really important for the workers. The benefits of this home place for tools is to keep the tools safely without missing it. Keeping the tools in the right place will also influence the searching time when the workers needed it quickly. The tools that are kept in the home place will not be damaged by other tools because each tools have their own place based on their size and dimension.

iii. Machine safety

Machine guard is an important treatment to keep the operators save from any dangerous that may appears from the machine. This guard protection of the machine need to be checked everyday to prevent some accident.

1. Attach proper guards to dangerous moving parts of machines.

Providing proper guard in the machine is important for the workers. The proper guard can increase the safety during the work. Without any proper guards, the opportunity of getting injured is high. The proper guards can also be other object such as shelves. Attaching proper guards in the shelves can prevent the materials and products falling from the shelves. If there are no proper guards, when the materials and products falls from the shelves then it will make materials and products getting damage and the quality will decreased.

2. Attach labels and signs in order to avoid mistakes.

Implying labels in the materials and products is effective ways to distinguish which one is which. The function of the labels is to give a description about the materials and products such as the date of incoming materials, the person who in charge for the materials, the date when the products was finished, the quantity, the volume, and etc. The labels that were implied should be clearly visible by the workers so the workers can find it easily.

3. Provide clear visible emergency controls and easy to reach.

Machines in the production floor, need a clearly visible emergency switch controls. The purpose of these clear emergency switches is to avoid the workers push the wrong button during the emergency. Clear emergency switches can be done by making the switches in different color. Not only for the possibilities of pushing will the wrong button, but it also spend time of finding the emergency button.

4. Checking wires connectors for electricity equipment and machines.

Electrical safety is very important for the production floor. Machines use so many electricity wires. This electricity wires need to be covered safely from the workers.

The covered wires can reduce the opportunity for the workers to hit the wires while walking and moving a materials and products using the material handling tools. The best place for placing the wires and cover it is near the wall.

- iv. Work-related welfare facilities

Welfare facilities cover such as toilets, washing place, changing clothes, and some clean place to take break during the work.

1. Provide worthy washing facilities and clean toilets.

Clean toilets and good condition of washing facilities is the most important facilities in a company. Toilets and washing facilities need to be in a clean condition. Workers can feel comfortable using the toilets and washing facilities when the condition of toilets and washing facilities is clean. The clean toilets and washing facilities is depend on how the company treat the toilets.

2. Provide worthy resting corners.

A comfortable resting corners is needed for the workers during the break times. Comfortable resting corners can recover the workers energy. So, after taking a break in short time, the workers can work again with full energy and optimum.

3. Provide first aid equipment.

Providing a first aid equipment's in the workplaces is very important to keep the safety of the workers during the works. In there are some accidents during the works, then the workers can able to use the first aid equipment to recover. The workers are also suggested to train about first aid. This training is needed because if there are some accidents, the workers can recover by their self. The tools in first aid equipment must be complete.

- v. Work premises

1. Rearrange the layout and the flow of work to reduce unnecessary movements.

Layout is a very important aspect of physical work to determine the flow of work. If the layout is clear, then the flow of work will be more effective. This will lead the workers can save energy and no need to do some unnecessary movements. The rearrangements of layout consist of the arrangement of shelves, materials, products, position of handling tools.

- c. Non Conformity and Conformity determination

In this steps, the non conformity and conformity condition is the final steps to determine wether it needs a improvement or not. Non conformity condition is a substantial failure that does not meet the requirements of the standard, and the conformity condition is the condition that already meet the requirements of the standard.

2.1.7. 5 whys

The 5 Whys is another root cause analysis tool that can help the team to investigate the root causes of a problem or number of problems by asking a simple question (why) five times.

The benefits of applying the 5 whys in root cause analysis is saving time. It's a simple tool to determine the root cause quickly and efficiently during the discussion. 5 Whys method can also be in a form of table which mean, there are

five special coloum to placed the explanation of each whys. The steps to applying the 5 whys method are define the problem and then ask the question.

