

Implementation of Inspection to Controlling Hazards in the Garment

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Abstract: The garment industry is currently showing significant growth, with complex production systems that have the potential to cause various operational risks, particularly related to occupational safety. This study aims to identify the importance of implementing inspections as a form of control over occupational safety and health (OSH) in the garment industry. The method used in this study is a descriptive approach, with data collection techniques through direct observation and interviews at one garment manufacturing industry in the Ungaran area. The results indicate the presence of potential hazards from three main aspects: Man, Machine, and Method. It was also found that the company under study has not conducted routine inspections and remains more focused on achieving production targets. Therefore, the implementation of systematic inspections through the stages of planning, execution, evaluation, and reporting is considered important to detect potential hazards early on and support the creation of a safer and more productive work environment.

Keywords: garment industry; risk management; workplace accidents; work safety inspection

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INTRODUCTION

The development of industry in Indonesia has seen significant progress in recent decades. One sector that has shown consistent growth is the textile industry and its derivatives, including the garment industry. The textile industry has grown rapidly and has become a significant contributor to the country's foreign exchange earnings as well as absorbing a large workforce. The garment industry, as part of the textile industry's value chain, is labor-intensive, involving various production processes such as cutting materials, sewing, finishing, and packaging. These processes require a variety of machines, equipment, and labor working within a complex production system. The complexity of this production system creates various operational risks that, if not managed properly, can have negative impacts on productivity, product quality, and worker safety (Nuryanti, 2025).

Workplace accidents are accidents that occur in connection with employment, including illnesses caused by employment. Workplace accidents also include accidents that occur while traveling from home to work and returning home via the usual or normal route (Putra, 2017). According to (Tarwaka, 2014 in Putra, 2017), the causes of workplace accidents must be investigated and identified so that preventive and corrective actions can be taken to address the root causes of workplace accidents, thereby minimizing losses and the likelihood of damage and preventing similar accidents from recurring.

According to the International Labor Organization (ILO), 2.78 million workers die each year due to work accidents and occupational diseases. Approximately 374 million workers suffer injuries that result in significant absenteeism (Azzahra et al., 2022). BPJS Ketenagakerjaan reports that the number of workplace accidents has increased annually. According to data from BPJS Ketenagakerjaan, in 2017 there were 123,041 workplace accident cases. In 2018, there were 157,000 workplace accident cases, with 4,678 cases (3.18 %) resulting in disabilities, and 2,575 (1.75 %) cases resulting in deaths (Kementerian Ketenagakerjaan RI, 2022).

The garment industry is one of the most popular businesses in Indonesia, with continuous growth and development. Every job involves potential hazards that can lead to workplace accidents ranging from minor to severe, including fatalities. The extent of these accidents and work-related illnesses depends on the type of production, technology used, materials employed, workplace layout and building environment, as well as the quality

of management and the workforce. Additionally, tools, machinery, materials, and labor are sources of hazards that can arise in the workplace and may result in accidents (Aristriyana & Ferdian, 2023). Research conducted by (Sukmawati, 2020) on the garment home industry revealed that there are numerous potential hazards present, including physical hazards, ergonomic hazards, and electrical hazards at every stage of the process. The potential hazards identified in the study include finger injuries from needles, cuts, slips, electric shocks, fires, and awkward postures, as well as repetitive hand movements.

Safety and health inspections are an early detection effort to identify potential sources of danger that could cause accidents. Inspections are conducted thoroughly with the aim of identifying and evaluating risk levels and controlling them to a level that is safe for the health and safety of workers. Safety and health inspections focus on the compliance or non-compliance of existing conditions with safety and health standards. Every production process has potential hazards that can cause accidents. To prevent workplace accidents, it is necessary to implement control measures, one of which is conducting safety and health inspections to prevent accidents that result in losses (Prasetyo, 2023). Based on the above, the objective of this study is to identify the importance of implementing inspections to controlling hazards at Garment X.

METHODS

This study uses a descriptive method through direct observation and interviews to systematically describe the implementation of inspections as a means of controlling safety and occupational accidents in the garment industry. The research location is at one of the garment industries in the Ungaran area. Data collection was conducted during observations, focusing on work activities, the condition of tools and machinery, workers behavior related to occupational safety and health (OSH), and the work environment, as well as the implementation of OSH aspects in the field.

The data collected from observations and interviews were then analyzed to objectively describe the actual conditions in the field. The analysis was based on pre-determined aspects, such as the type of hazard, causes, mechanisms of occurrence, and resulting impacts. The results of this analysis were also used to provide recommendations for improvements and enhanced safety education for workers, management, and visitors.

RESULT AND DISCUSSION

Convection Company X has a production workflow consisting of several stages, starting from making patterns as the basis for clothing design, the second process is cutting fabric according to the pattern, the third process is sewing, then the embroidery process if needed, the next process is quality control. The process is carried out to ensure product quality standards, the next process is the ironing process so that the results are neat, and the last process is packing. Each stage is interrelated and involves the use of work equipment such as sewing machines, cutting machines, steam irons, and manual work activities that are carried out repeatedly over a long period of time. These activities require coordination between people, machines, and effective work methods so that production runs smoothly and safely.

Based on the results of observation and analysis, the potential hazards found in the entire convection production process can be viewed from three main aspects, namely man, machine, and method. From the man aspect, many workers face ergonomic risks due to non-ideal working positions, such as sitting for long periods of time with non-ergonomic chair selection, bending over while sewing, or standing too long while ironing. In addition, there is a lack of awareness of the importance of safety in safe working as it leads to a high risk of injuries such as needle sticks, cuts, to muscle fatigue, and eye strain. From the machine aspect, potential hazards can arise from the use of machines that are not fit for use. Machines that are not fit for use, such as sewing machines or cutting machines that are worn, unstable, or have loose components, can cause sudden breakdowns during use. This poses a high risk to workers, such as pinching, puncturing, or cutting parts of their body, especially fingers. In addition, the lack of regular maintenance such as lubrication, tightening bolts, or checking electrical cables, makes the machine vulnerable to technical malfunctions that can trigger electrical short circuits, engine jams, and even fires (Alfidyani et al., 2020).

In addition, the danger can increase if the machine is not equipped with safety sensors, such as needle guards on sewing machines or knife covers on cutting machines. Without these safety devices, direct contact between the worker's hands and the moving parts of the machine is very easy to occur. As a result, there is a higher risk of serious injuries such as open wounds or finger amputation. Machine noise, heat and vibration also contribute to long-term health problems if not handled properly. Meanwhile, from the method aspect, many work methods are not ergonomic, do not have written SOPs, and poor workstations make the potential for hazards increase. The combination of these three aspects shows that OHS hazards in the convection industry are complex and require a comprehensive control approach, both technically, administratively, and in terms of worker behavior (Saputri & Setyawan, 2024).

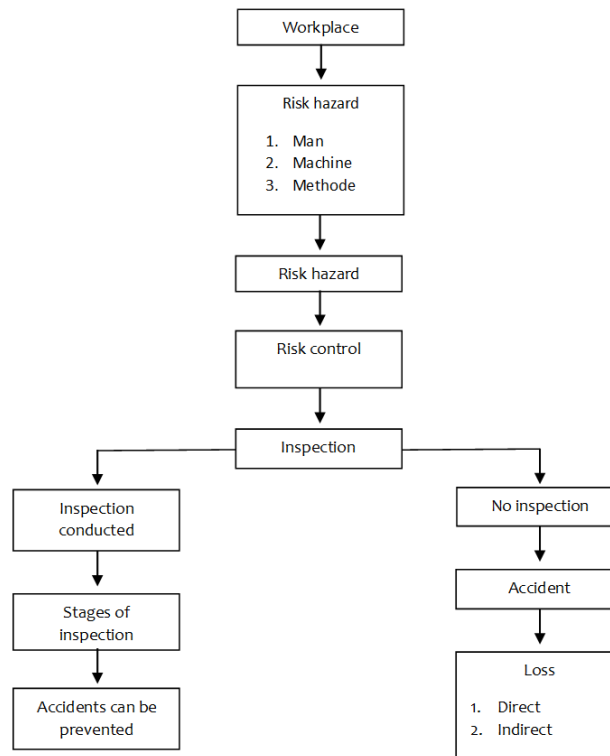


Figure 1. Inspection Flowchart for Risk Prevention

Hazards can lead to accidents caused by unsafe actions and unsafe conditions originating from various sources, particularly related to man, machine, and method. Unsafe action refers to unsafe behavior carried out by an individual that has the potential to endanger both themselves and others, thereby leading to occupational accidents (Suma'mur, 2009). On the other hand, unsafe condition refers to hazardous situations resulting from the use of unfit machines or equipment, an unsupportive working environment, and the lack of adequate (Tarwaka, 2017). Therefore, control efforts are essential, one of which is through the implementation of occupational health and safety (OHS) inspections. The absence of inspections increases the likelihood of accidents, which may lead to both direct and indirect losses. Convection Company X has not yet conducted regular inspections, instead prioritizing production targets without adequately considering potential hazards. In fact, conducting inspections not only prevents accidents but can also enhance productivity.

Convection Company X can implement two types of inspections: unplanned and planned inspections. Unplanned inspections are often carried out hastily, making them shallow, unsystematic, and undocumented. These inspections tend to focus solely on visible unsafe conditions, often overlooking more serious hazards. Furthermore, attention is mostly directed toward production, and corrective actions rarely address the root cause of the problem. In contrast, planned inspections can be divided into general (routine) inspections and special inspections. General inspections aim to identify potential hazards related to tasks, operational processes, equipment, and high-risk machinery. The implementation of such inspections offers several advantages, including enabling inspectors to focus fully, conduct thorough observations of occupational health and safety aspects, use well-prepared checklists, and promptly compile findings and recommendations to raise hazard awareness in the workplace.

Special inspections, meanwhile, are focused on identifying and evaluating potential hazards in specific high-risk work objects as a basis for control and prevention measures in the workplace. Unlike general inspections that involve comprehensive walk-through surveys across all work areas, special inspections are more targeted toward specific conditions or locations—such as machines, work equipment, or known high-risk zones. By implementing occupational safety inspections, the focus should not be limited to visible unsafe conditions and actions, but must also explore and uncover hidden hazards that may underlie them. This allows for the early detection of potential risks and significantly reduces the occurrence of accidents and occupational diseases.

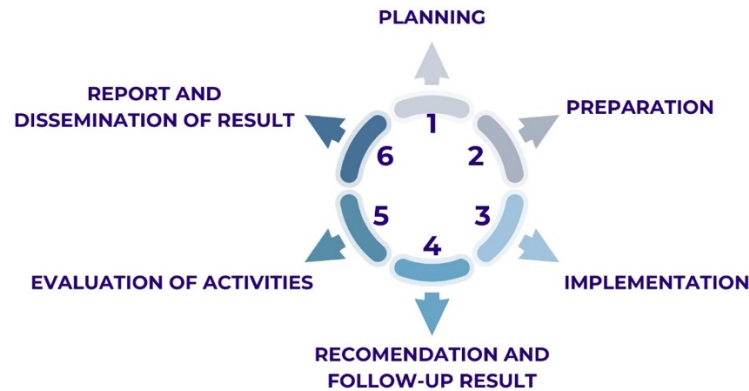


Figure 2. Stages of Inspection

The inspection stage in occupational safety and health activities starts from inspection planning which is compiled based on the results of risk assessment in the work area, by determining the inspection object, implementation schedule, officer in charge, methods used such as cross or joint inspections, and cost estimates. Furthermore, preparation is carried out in the form of collecting supporting documents such as procedures, standards, check lists, measuring instruments, notebooks, and documentation tools. At the implementation stage, the inspection officer together with the person in charge of the area inspects the work area, equipment, and hazardous locations in each shift. If unsafe conditions or actions are found, immediate repairs, safety socialization, and temporary suspension are carried out if they have the potential to cause accidents.

After that, recommendations are given based on valid findings with reference to the risk control hierarchy, which are followed up according to the agreed time and monitored for implementation. Evaluation is carried out thoroughly on all stages and follow-up results, then all inspection results are documented in the reporting system and socialized to workers as a form of education and improvement of work safety culture (Keputusan Direktur Jenderal Mineral Dan Batbara Kementerian Energi Dan Sumber Daya Mineral Nomor 185. K/37.04/DJB/2019 Tentang Petunjuk Teknis Pelaksanaan Keselamatan Pertambangan Dan Pelaksanaan, Penilaian, Dan Pelaporan Sistem Manajemen Keselamatan Pert, 2019).

CONCLUSION

The implementation of inspections in the garment industry is an important step in identifying potential hazards early on, thereby preventing workplace accidents and occupational illnesses. Based on observations at Garment X, there are three main aspects that serve as sources of potential hazards: the human factor, machinery, and methods. These three aspects contribute to unsafe actions and conditions in the workplace. However, in practice, Garment X has not been conducting inspections optimally and tends to prioritize production targets. In fact, inspection activities should be carried out systematically through several stages, including planning, preparation, implementation, recommendations and follow-up actions, evaluation of activities, and reporting and dissemination of results. With proper and comprehensive inspections, it is hoped that a safer and more productive work environment will be created.

DECLARATION OF GENERATIVE AI

The authors declare that no generative AI or AI-assisted technologies were used in the writing process of this manuscript.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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