

## Literature Review: Analysis of K3 Implementation in Textile Industry Companies

**Siti Aldina Nurhasanah**  
Fakultas Kesehatan Masyarakat,  
Universitas Islam Negeri Sumatera Utara, Indonesia

### Article Info

#### Article history:

Received December 27, 2023

Revised January 6, 2024

Accepted January 26, 2024

#### Kata Kunci:

Occupational Safety and Health,  
Occupational Health and Safety  
Management System,  
Risk of Hazard,  
Safety Evaluation,  
Textile Industry

### ABSTRACT

Occupational Safety and Health (K3) has a crucial role in projects with a high risk of work accidents. Non-compliance with the implementation of the Occupational Health and Safety Management System (SMK3) can have serious impacts on humanitarian, economic, environmental, and legal aspects. The close relationship between workers and work accidents has an impact on productivity, making the application of SMK3 an important factor in human resource development. SMK3 not only protects workers in the company, but also involves protecting the community from the dangers caused by industrial products. The risk of hazards in the work environment can hamper worker safety and health conditions, reduce efficiency, and interfere with organizational effectiveness. Law Number 1 of 1970 regulates the implementation of K3 in all workplaces in Indonesia, including land, in the ground, on the surface of the water, in the water, and in the air. SMK3 is the most important part in the risk management of a company or organization. In an effort to form an effective SMK3, companies need to internalize awareness of the importance of K3 and provide education to employees about safety and health in the workplace. Work accident cases can cause worker suffering, decreased production, and financial losses for the company. This study conducted a literature review on the application of K3 in the textile industry. This research method is literature review with a qualitative approach. Data obtained from scientific articles/journals using Google Scholar with the keyword "implementation of SMK3 in Textile Industry Plantations". The screening results resulted in 3 articles being analyzed. The conclusion of the literature review shows that textile companies comply with the national policy of K3 and develop internal guidelines in accordance with regulations. Hazard risk identification and risk assessment are carried out to prevent accidents. The relationship of the physical work environment with work accidents was indicated in the study. Regular training and supervision of the use of Personal Protective Equipment (PPE) demonstrates the company's commitment to safety. Periodic safety evaluations are also carried out to continuously improve safety standards. In the context of the textile industry, the implementation of K3 is not only a legal necessity, but also an investment in worker welfare, productivity, and company reputation. By involving workers in safety decisions, providing training, and continuously conducting evaluations, companies can achieve a safe work environment and support human resource development.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



***Corresponding Author:***

Siti Aldina Nurhasanah  
Universitas Islam Negeri Sumatera Utara  
Email: sitialdina251001@gmail.com

---

**INTRODUCTION**

Occupational Safety and Health (K3) is very important for projects that have a high risk of work accidents, because if there is no action to implement the Occupational Safety and Health Management System (SMK3) it can cause problems in several aspects such as humanitarian, economic, environmental and legal. Workers have a very close correlation with work accidents, while work accidents are closely related to productivity in the implementation of the Occupational Safety and Health Management System (SMK3) greatly affects the development of human resources.

SMK3 can provide protection for the community of a company to avoid work accidents, the danger of fouling industrialized materials and protection for the wider community from the dangers that may be caused by industrial products. From the risk of hazards contained in the work environment, the safety and health conditions of the workforce can be hampered so that it will affect efficiency and effectiveness in an organization (Ramli, 2013). Work safety according to Law Number 1 of 1970 clearly regulates the implementation of K3 in all workplaces where there are labor, labor relations or business activities and sources of hazards both on land, in the ground, on the surface of the water, in the water and in the air within the territory of Indonesia (Ramli, 2013).

Occupational Safety and Health (K3) is the most important part in managing a risk management by a company or organization (Sungkono, 2015). The term in safety includes 2 (two) parts, namely safety risks and health risks. In forming a good Occupational Safety and Health (K3), the company must be able to instill from within the company first and then provide counseling and coaching to each employee or 4 workers in the importance of Occupational Safety and Health (K3) (Sungkono, 2015). If there are still many cases of work accidents in a company, it is likely to cause many workers to suffer, decrease production realization, increase absenteeism in workers, and have a large impact on the company.

As written in PP No. 50 of 2012 related to the implementation of SMK3, one of the objectives of implementing SMK3 is to prevent and reduce work accidents and occupational diseases. Therefore, this study aims to conduct a comprehensive literature review on the application of K3 in textile industry companies. In this literature review will be collected and analyzed data and findings from previous studies relevant in this field.

**RESEARCH METHOD**

This research uses the literature review study method and is qualitative. Literature search using a database in the form of secondary data from scientific articles / journals with the web using Google Scholar, or official article websites using keywords SMK3 implementation in Textile Industry Plantations. With these keywords, articles that match the topic are obtained and screened according to the specified inclusion and exclusion criteria.

## RESULTS

Based on the results of screening conducted on the basis of inclusion and exclusion criteria, 3 articles were reviewed. Table 1 shows the results of literature search by researcher, journal title and year, author name, research objectives, respondents, research design and methods, and research results from the three literatures

**Table 1. Characteristics of the Analyzed Article**

1	Journal title and year	IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM (SMK3) POLICY (Case Study on Occupational Health and Safety Management System (SMK3) at PT Prissima Sleman Regency) - Year 2023
	Author Name	Erni Hasana Putri, Febriyanti Angelia Ginting
	Research Objectives	Knowing the implementation and implementation of the K3 Management System at PT Prissima Yogyakarta
	Respond	Participants in the study There are 9 people that are Bag. Storage 1, HRD/Chairman of P2K3 1, Bag. Employment 1, Bag. Production 2, Bag. Maintenance Weaving 1, Worker 3
	Design and Research Methods	This research method uses qualitative descriptive methods, namely sorting out data, grouping data, giving an idea, explaining and analyzing data using existing theories to solve problems which will then be drawn conclusions
	Result	Based on the existence of a national policy on the K3 Management System which is a guideline for companies in implementing it, the company also develops guidelines for the implementation of K3 Management in accordance with the needs based on the provisions of the Laws and Regulations. The implementation of the K3 Management System policy is the right way to implement a policy to achieve the goals set by policy makers. in accordance with Government Regulation Number 50 of 2012, namely Policy Determination, one of which is 500 people and have a high risk of work accidents because in the production process using machines and heavy equipment to process production materials. By establishing K3 policy in accordance with Law Number 1 of 1970 Hazard control designed by the company to prevent hazards and effects that occur on workers, this is done optimally in order to eliminate or reduce occupational hazards.
2	Journal title and year	Identification of K3 Hazards with the HIRARC Method in the Recycle Unit of the Nonwoven Textile Industry - Year 2023
	Author Name	Raihan Januar Anggoro, Syadzadhiya Qothrunada Z. Nisa
	Research Objectives	Analyze risks in the recycle unit in order to prevent work accidents and occupational diseases
	Respond	workers in the Nonwoven Textile Industry Recycle Unit
	Design and Research Methods	Deep Research Methods Ini The HIRARC (Hazard Identification and Risk Assessment Control) method is one of the effective methods related to risk identification and control as part of efforts to prevent occupational injuries and diseases.
	Result	Based on the results of the study, it was concluded that there are 31 potential hazards in the recycle unit, of which 19.3% are hazards with a low risk category, 61.2% are hazards with a medium risk category, and 16.6% are hazards in the high risk category. Identification of hazards carried out in the work process in the recycle unit potential hazards contained in the recycle unit, namely; chipped cables, dust inhalation, noise exposure, heat engine exposure, and exposure to hot polymer spills. There are a total of 31 risks with a total of 5 high ratings on work in the recycle unit, a total of 19 medium ratings in the recycle unit and the last 6 low ratings in the recycle unit.
3	Journal title and year	The Relationship of Physical Work Environment with the Incidence of Work Accidents in the Textile Industry of Bandung City - Year 2022
	Author Name	Karlina Wirawati, Agung Sutriyawan
	Research Objectives	Knowing the relationship between the physical environment and the incidence of work accidents in the textile production process.
	Respond	79 workers in Bandung City Textile Industry

Design and Research Methods	The research design used a cross sectional study (Sutriyawan, 2021). This design is used to see the relationship between the physical work environment and the incidence of work accidents.
Result	Research shows that there is a relationship between subjective complaints of temperature and noise with the incidence of work accidents at PT "X" Bandung. Of the five variables of physical environmental factors, there are three variables that have no relationship with the incidence of work accidents, namely, subjective complaints of lighting, vibration, and humidity. The physical work environment and the incidence of work accidents need special attention, it is recommended that management involve workers in every decision making related to safety and the Company's P2K3 Team conducts a review of safety programs in the workplace, by conducting safety training and supervising the use of PPE regularly

## DISCUSSION

Analysis of the application of K3 in textile industry enterprises is very important to ensure the safety and health of workers. Textile industry companies involve various risks such as The risk of hazards that can cause work accidents is likely caused by various factors, including humans, equipment or machinery, raw materials, and the environment. Dangers that can occur in Textile Companies such as being hit by cotton raw materials, pinched by machines, run over by transport trains, electric shocks, fatigue due to monotonous activities and deafness due to exposure to noise produced by machine sounds, dust from cotton and cotton raw materials that have an effect on the health of workers, especially lung function disorders. In this analysis, it is necessary to identify risks associated with work processes in the factory, such as through work site inspections, interviews with workers, and analysis of previous work accident data. Furthermore, a risk assessment should be carried out to evaluate the degree of hazard and the likelihood of an occupational accident or disease. The results of the risk assessment will be the basis for planning and implementing appropriate K3 measures.

Good planning and implementation of K3 is a key factor in preventing and reducing risks in textile industry companies. Planning steps that need to be carried out include the preparation of a clear K3 policy, the formation of K3 teams, training and education for workers, the installation of warning and safety signs, and the use of appropriate personal protective equipment (PPE). K3 implementation involves the implementation of safe work procedures, supervision of compliance with K3 policies and procedures, and regular maintenance and inspection of work equipment and plant facilities. Regular supervision and evaluation are also needed to ensure the successful implementation of K3, as well as identify problems and deficiencies that may arise. By conducting a comprehensive analysis of K3 implementation, oil palm plantation mills can create a safe working environment, protect worker health, and improve productivity and overall work quality.

## CONCLUSION

Based on the literature review conducted, it can be concluded that the application of K3 in textile industry companies is very important and some points that can be taken are:

Based on the information provided, several conclusions can be drawn regarding the K3 Management System policy and its implementation in the company:

1. National Policy and Development Guidelines:
  - The Company follows the national policy guidelines on K3 Management System.
  - The development of guidelines for the implementation of K3 Management in accordance with the needs of the company shows the seriousness in adapting national standards to the internal context.
2. Implementation of K3 Management Policy:
  - The implementation of K3 Management System policies in the company is directed to achieve the goals set by policy makers.
  - The establishment of K3 policy in accordance with Law Number 1 of 1970 shows conformity with applicable regulations and commitment to ensure worker safety and health.
3. Risks and Hazards in the Production Process:
  - The production process uses machinery and heavy equipment, which can increase the risk of work accidents.
  - The identification of 31 potential hazard risks in recycle units with low, medium, and high risk categories indicates the need for appropriate risk control strategies.
4. Research and Relationship with Work Accidents:

- Research shows a relationship between subjective complaints of temperature and noise with the incidence of work accidents at PT "X" Bandung.
  - Physical work environments such as complaints of lighting, vibration, and humidity do not show a relationship with the incidence of work accidents.
5. Worker Participation and Safety Training:
    - Company management is advised to involve workers in safety-related decision making.
    - Safety training and regular supervision of PPE use show concern for worker prevention and protection efforts.
  6. Security Evaluation Expansion:
    - The P2K3 team conducted a review of workplace safety programs.
    - This initiative shows the company's willingness to continuously improve occupational safety and health standards in accordance with developments and evaluation findings.

Overall, the company shows commitment to the implementation of safety policies, but needs to continue to pay attention to risk control and involve workers in accident prevention efforts. Periodic evaluation and review of safety programs is also a positive step towards maintaining safety sustainability in the workplace

### **Suggestion**

Here are some suggestions that can be considered for improving and strengthening Occupational Safety and Health (K3) policies in textile industry companies:

1. Risk Control Improvements:
  - Further evaluation of the 31 potential hazard risks in the recycle unit can help identify more specific risk control measures.
  - Focus on high-risk category hazards to ensure effective control implementation.
2. Integration of Research Results with K3 Policy:
  - The results of the research can be integrated into the company's K3 policy to ensure concrete steps in addressing the risks and hazards that have been identified.
3. Development of Prevention Strategies:
  - Develop more specific prevention strategies for hazards encountered, such as chipped cable management, dust control, and hot polymer spills.
  - Ensure that the strategy is documented in policy and implemented consistently.
4. Worker Participation:
  - Encourage active participation of workers in safety-related decision-making.
  - Strengthen two-way communication between management and workers to increase awareness and involvement in the K3 program.
5. Improvement of Physical Environmental Factors:
  - Consider corrective measures in physical environmental factors that have a relationship with workplace accidents, such as lighting, vibration, and humidity.
  - Involve workers in the decision-making process for physical environmental factors.
6. Enhanced Safety Training:
  - Conduct regular safety training to ensure ongoing understanding and compliance with changing procedures or regulations.
  - Include training materials covering risk identification, use of personal protective equipment, and accident prevention measures.
7. Supervision of PPE Use:
  - Strengthen supervision of the use of personal protective equipment (PPE) periodically to ensure compliance and effectiveness.
  - Involving the P2K3 Team in the supervision to gain deeper insights.
8. Continuous Evaluation:
  - Conduct ongoing evaluations of safety programs, incorporating findings from PPE research, training, and supervision.
  - Establish regular evaluation cycles to ensure K3 policies are always relevant and effective.

By paying attention to these suggestions, it is hoped that companies can continue to improve occupational safety and health standards, create a safe work environment, and reduce the risk of work accidents.

---

**REFERENCES**

- [1] Putri, E. H., & Ginting, F. A. (2023). Implementasi Kebijakan Sistem Manajemen Keselamatan Dan Kesehatan Kerja (SMK3). *Jurnal Enersia Publika: Energi, Sosial, dan Administrasi Publik*, 7(1), 37-55.
- [2] Anggoro, R. J., & Nisa, S. Q. Z. (2023). Analisis Identifikasi Bahaya K3 dengan Metode HIRARC pada Unit Recycle Industri Tekstil Nonwoven. *INSOLOGI: Jurnal Sains dan Teknologi*, 2(3), 430-439.
- [3] Wirawati, K., & Sutriyawan, A. (2022). Hubungan Lingkungan Kerja Fisik Dengan Kejadian Kecelakaan Kerja di Industri Tekstil Kota Bandung. *Gema Wiralodra*, 13(1), 53-63.
- [4] Tyastanti, C. L., & Ardyanto, Y. D. (2014). Risk Assessment Kecelakaan Kerja Pada Unit Windin PT. Kusumaputra Santosa, Karanganyar, Jawa Tengah. *The Indonesian Journal of Occupational Safety and Health*, 3(2), 128-137.