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OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT LITERATURE REVIEW ON IMPLEMENTATION CHALLENGES AND STRATEGIES

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ABSTRACT

Occupational Safety and Health (K3) is a crucial aspect in creating a safe, healthy, and productive work environment. Although it has been regulated in various national regulations and international standards such as ISO 45001:2018, the implementation of K3 in Indonesia still faces various challenges. This study aims to examine the challenges and strategies for the implementation of K3 management through a literature review approach to eight relevant scientific articles. This study uses a qualitative descriptive method with thematic analysis techniques to identify patterns, constraints, and best practices in the management of K3 in various industrial sectors. The results of the study show that the paradigm shift from an administrative approach to a risk-based strategic approach is the key to the successful implementation of K3. However, structural barriers, weak work culture, and weak supervision are the main obstacles. Some strategies that have proven effective include proactive leadership, risk-based training, open reporting systems, and integration of CSR with quality management systems and the environment. Thus, effective implementation of K3 requires a systemic approach, management commitment, and strengthening regulations to create a safe and sustainable work culture.

Keywords: *Occupational Safety, Occupational Health, Risk Management, ISO 45001, Literature Review*

1. INTRODUCTION

Occupational Safety and Health (K3) is an integral aspect of human resource management that aims to protect the workforce from the risk of accidents and occupational diseases. In the modern world of work, attention to OSH is increasing because it has been proven to contribute directly to productivity, efficiency, and organizational reputation. Global data shows that about 2.78 million workers die each year due to unsafe working conditions, and more than 374 million suffer work-related injuries or illnesses each year (International Labour Organization, 2019). This figure confirms that the management of K3 is still a big challenge, especially in developing countries such as Indonesia. In Indonesia, the implementation of K3 has been regulated in various regulations such as Law No. 1 of 1970 concerning Occupational Safety, as well as Permenaker No. PER.05/MEN/1996 concerning Occupational Safety and Health Management System (SMK3). Although the regulation has been in effect for a long time, its implementation in the field has not been fully optimal. This is reflected in the still high number of work accidents reported by BPJS Ketenagakerjaan, where in 2023 there were more than 280,000 cases of work accidents. This figure does not include the informal sector, which is largely not integrated into the employment supervision system.

The challenges in implementing K3 management do not only come from the regulatory side, but also from the lack of safety culture, weak supervision, and low management concern for potential risks in the workplace. Often, K3 is only considered an additional burden, not a long-term investment. In fact, a number of studies have shown that the implementation of an effective K3 management system is able to reduce costs due to accidents, increase job satisfaction, and strengthen organizational sustainability (Fitriani

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& Nugroho, 2020). In the global context, various standards have been developed to assist organizations in implementing a systematic K3 management system, one of which is ISO 45001:2018. This standard replaces OHSAS 18001 and emphasizes risk management approaches, worker participation, and continuous improvement. The adoption of this standard allows organizations to integrate CSR into key business processes, not only as legal compliance, but also as an organizational strategy. A number of previous studies have examined various aspects of K3 management, ranging from hazard identification, risk assessment, safety culture development, to the effectiveness of training. However, the results of these studies are scattered and have not been integrated into a complete conceptual framework. Therefore, it is necessary to conduct a systematic literature review to summarize important findings that can be used as a basis for developing a more effective K3 implementation strategy.

This research aims to conduct a literature study on various studies that discuss K3 management, both from the theoretical side, practice in the field, and policy evaluation. The main focus of the study is to identify implementation challenges, success strategies, and opportunities for the development of K3 management systems in the future. Thus, the results of this study are expected to make a real contribution to strengthening K3 policies and practices in Indonesia, especially in the face of the increasingly complex and risky dynamics of the world of work. Furthermore, the issue of K3 is also closely related to the sustainable development agenda, especially the Sustainable Development Goals (SDGs) point 8, namely "decent work and economic growth". Decent work does not only refer to wages or social protection, but also includes safe and healthy working conditions. Therefore, effective K3 management is one of the main indicators in realizing humane and fair work quality.

2. RESEARCH METHODS

This study uses a literature review approach as the main method. This study is qualitative descriptive, focusing on a systematic review of the scientific literature that discusses the application and challenges of Occupational Safety and Health (K3) management. This approach was chosen because it allows the authors to analyze a variety of theoretical and empirical perspectives without conducting primary data collection (Moleong, 2017).

2.1. Types and Approaches to Research

This type of research is qualitative, non-empirical, using a descriptive-analytical approach. The main objective is to develop a conceptual understanding of K3 management practices based on the published literature.

2.2. Sources and Criteria for Literature Selection’

The literature used comes from national and international journals relevant to the topic of K3. The search process is carried out through databases such as Google Scholar, Garuda, and ScienceDirect using keywords such as: "K3 management, ISO 45001, occupational safety, safety management", occupational health and safety", and K3 Indonesia". The inclusion criteria in the article selection are:

a. Published between 2017 to 2024
b. Focus on the implementation, challenges, or strategies of K3 management
c. Published in peer-reviewed academic journals
d. Available in Indonesian or English

From this process, a total of 8 articles were selected as the main sources that were analyzed thematically (Ridwan & Hidayat, 2021).

2.3. Data Analysis Techniques

The analysis is carried out using a thematic analysis method, which is to identify the main patterns in the content of the article being studied. The stages in the analysis include:

1. Read and understand the content of each article thoroughly
2. Group findings by theme such as:
    - K3 management system (SMK3, ISO 45001)
    - Implementation success and failure factors
    - Challenges in specific industry sectors
3. Compiling a synthesis of similar findings
4. Draw conclusions and make recommendations based on the integration of the literature

The results of the analysis are used to form a framework for discussion in the next section, which will show trends, challenges, and strategies for K3 management based on a limited but focused literature review.

3. RESULT AND DISCUSSION

A literature review of eight scientific articles discussing Occupational Safety and Health (K3) management revealed that the approach to K3 has shifted from being reactive and administrative, to a risk-based and participatory strategic approach. In this section, the discussion is divided into four main themes: (1) the K3 management paradigm and standardization; (2) implementation challenges in various sectors; (3) organizational strategy in managing K3 in a sustainable manner; and (4) evaluation of the effectiveness of the implementation of the K3 system.

3.1. New Paradigm in K3 Management and International Standardization

The tradition of K3 management in many organizations previously focused on fulfilling legal obligations, such as reporting work accidents and procuring Personal Protective Equipment (PPE). However, the latest literature shows a paradigm shift towards a proactive and integrative approach, as emphasized in ISO 45001:20188. These standards not only require companies to identify and control risks, but also encourage a culture of safety and active engagement of all parties, from leaders to workers in the field. Research by Prasetya & Arif (2020) found that manufacturing companies that integrate K3 management systems into quality and environmental systems (ISO 9001 and ISO 14001) show increased operational efficiency, decreased downtime due to accidents, and increased employee awareness of safe work procedures9. This integration allows for a more data- and risk-based decision-making process.

In the construction sector, a dynamic project-based approach demands constant adaptation of K3 procedures. Kartika et al. (2019) show that construction companies that have a project-based K3 system—including Job Safety Analysis (JSA) and daily toolbox meetings—are able to respond to changing risks more quickly and effectively. Nevertheless, not all organizations have the capacity to adopt international standards. A study by Suryani & Andika (2018) shows that most MSMEs in the food and handicraft sector only implement K3 formally, due to the lack of technical understanding and budget for professional training or consulting. This demonstrates the importance of regulatory support and incentives for small businesses in building functional OHS systems.

3.2. Challenges of K3 Implementation: Structural, Cultural, and Regulatory Dimensions

The implementation of the K3 management system cannot be separated from various obstacles. The literature analyzed groups implementive challenges into three main dimensions: structural, cultural, and regulative. Structurally, many organizations face limitations in competent human resources in the field of K3. Rahayu (2020) highlighted that the lack of internal supervisors and certified K3 experts causes inconsistent supervision of K3 implementation. In fact, some companies appoint non-technical staff to hold K3 positions without adequate training, which has an impact on weak risk analysis and incident reporting.

Culturally, the main obstacle comes from workers' low concern for safety. A work culture that underestimates procedures, relies on personal experience, and lacks risk communication contributes to the occurrence of accidents. Geller (2001) explains that a safety culture cannot be built instantly, but requires a process of collective habituation, positive reinforcement, and managerial example. From a regulatory perspective, challenges include a lack of inspections and law enforcement. Hidayat (2022) criticizes that only a small percentage of companies in Indonesia are audited regularly, and even when violations are found, the sanctions imposed tend to be light. This creates a moral hazard among business actors, who choose to ignore the implementation of K3 for the sake of cost efficiency.

3.3. Effective Strategies in the Implementation of Sustainable K3

Despite being faced with various challenges, a number of organizations have successfully implemented effective and sustainable K3 management strategies. A review of eight articles shows five key elements of a successful strategy, namely:

a. Active and visionary leadership – Organizations with top management that are directly involved in the implementation and oversight of OSH tend to have higher levels of compliance and participation.
b. Open reporting system – Companies that implement a near miss reporting system without sanctions actually get more accurate data for preventive analysis.

c. Risk-based continuous training – A case study at PT XYZ shows that simulated and real-world field conditions-based training is more effective than formal lecture approaches.
d. Integration with quality and environmental management – As discovered by Prasetya & Arif, organizations that integrate ISO 45001 with other management systems gain process synergy and document efficiency.
e. Use of digital technology – Mobile-based K3 inspection applications and the use of sensors on heavy machines have helped reduce the potential for accidents through early detection.

Companies that combine these elements show a more stable trend of zero accidents in the long run.

3.4. Effectiveness Evaluation: Measuring K3 Performance in the Field

Evaluating the effectiveness of the K3 system requires clear and measurable indicators. Some articles mention key indicators such as:

a. Lost Time Injury Frequency Rate (LTIFR)
b. Total Recordable Injury Rate (TRIR)
c. Internal & External Audit Score
d. Results of the Employee Safety Perception Survey

Wulandari (2021) noted that PT XYZ managed to lower the LTIFR to 0 for 18 months after implementing a combination of routine training, system rewards, and risk-based digital supervision. Meanwhile, Kartika et al. recorded a 35% decrease in TRIR in one year after the company implemented project-based toolbox meetings and daily audits in the construction sector. However, this success is not instantaneous. The best results appear when strategies are carried out in a staged, measurable, and sustainable manner. The evaluation of K3 performance is not only determined by the declining number of incidents, but also by changes in behavior and safety culture that are internalized within the organization.

4. CONCLUSIONS AND SUGGESTIONS

This literature review shows that Occupational Safety and Health (K3) management plays a strategic role in creating a safe, healthy, and productive work environment. From the results of the review of eight scientific articles, it can be seen that the K3 management paradigm has evolved from simply fulfilling legal obligations to a more proactive and systemic approach, especially with the adoption of international standards such as ISO 45001:2018. This approach emphasizes the importance of integrating K3 into the overall organizational strategy, active participation of workers, and continuous improvement. However, the implementation of K3 management is inseparable from various structural, cultural, and regulatory challenges. The limitation of competent human resources in the field of K3, low safety culture among workers, and weak supervision and law enforcement are the main obstacles in realizing an effective K3 system. This challenge is increasingly complex in the context of small and medium enterprises (MSMEs), where the understanding and technical capabilities of the K3 management system are still very limited.

However, there are various strategies that have proven effective in strengthening the implementation of K3. Some of these include visionary leadership, open reporting systems, ongoing risk-based training, integration with quality management systems and the environment, and the use of digital technology in work inspection and supervision. Evaluation of the effectiveness of the K3 system also needs to be carried out periodically through quantitative indicators such as LTIFR and TRIR, as well as qualitative indicators such as employee safety perception.

5. SUGGESTION

The author's suggestion is to increase top management's commitment to the implementation of K3 as part of the organization's strategy, not just compliance with regulations. Risk-based K3 policy formulation, adjusted to operational conditions and characteristics of the workforce, continuous and contextual K3 training, using a simulated approach, case studies, and digital-based technology to increase understanding and awareness of increased government supervision and providing incentives to companies that implement the K3 system consistently, especially in the informal sector and MSMEs., integration of K3 with organizational management systems (ISO 9001 and ISO 14001) to create efficiency and alignment of operational policies. By implementing these strategies, it is hoped that the K3 management system will not only be able to reduce the number of occupational accidents and occupational diseases, but also create a safer, healthier, and more sustainable work culture in all industrial sectors.

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