The Influence Of Safety Leadership And Working Condition On Safety Behavior: A Systematic Literature Review

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Abstract.

This systematic literature review aims to evaluate the influence of safety leadership dan working condition on safety behavior. The methodology involved a comprehensive search and selection of peer-reviewed articles published between 2017 and 2023. This research succeeded in reviewing 14 studies originating from 10 different countries and having topics related to safety leadership, working conditions and safety behavior. The results also indicate that safety leadership and working condition have a significant influence on safety behavior, both directly and indirectly. The review also highlights the critical role of organizational support in mitigating work accident rate. The study concludes that addressing safety behavior through strategic interventions and leadership development to enhance safety leadership and working condition related program can prevent work accident. By recognizing and addressing these issues, it is hoped that management will gain a better and more comprehensive understanding of issues related to safety behavior to give organizational support in order to correctly determine safety programs.

Keywords: *Safety leadership, working condition and safety behavior.*

I. INTRODUCTION

Coal mining industry is an industry that can be classified as a high-risk industry, where work accident can occur on a small scale or become a tragic disaster with many deaths [16]. Work accidents can occur at any time in the mining industry and can happen to anyone who works in the mining industry. Based on Heinrich [8] in his book, 88% of work accident occur due to unsafe behavior, 10% of work accident are caused by unsafe conditions in the work area, and 2% of work accident are caused by things that cannot be prevented or can be said to be fate. This research is in line with research conducted by Hong and Gui [9] which found that work accident that occurred were significantly influenced by unsafe behavior. Thus, theory and research results both show unsafe behavior as a very strong determining variable that cause work accident.At this stage, mining companies are focusing on improving their respective safety behavior. Safety behavior refers to actions related to safety that each worker undertakes within an organization [7]. Safety behavior is the main key to safety performance which has helped reduce many risk factors, such as injury and death. Meanwhile, Adi et al in their research define safety behavior as activities based on safe behavior in the work environment carried out by each worker to build and increase the level of safety in the workplace [1]. Safety behavior tends to have data that is normally distributed, making it easier to interpret the data which can be used as material for safety evaluation and as material for carrying out interventions.

Meanwhile, Dodoo et al [4] define safety behavior as the main factor in preventing behavior-based incidents which is very important in industries that have a high level of occupational risk. Previous research has shown that safety leadership and working condition have a significant influence on safety behavior.Safety leadership is a process that emphasizes the interactive relationship regarding safety between leaders and their subordinates. The ability of a leader to influence their subordinates is crucial for achieving the safety goals desired by an organization [18]. According to research conducted by Basahel [3], safety leadership is one of the factors that greatly influences safety behavior, where effective safety leadership with a strong management commitment to safety is a requirement for increasing safe behavior and will help to improve safety performance. In addition, research conducted by Aktas dan Kagnicioglu also showed that safety leadership is one of the variables that has a significant influence on a person's safety behavior [2]. This influence is also strengthened through research conducted by Subramaniam et al [15] that showed that safety leadership is one of the factors that has a very significant influence on safety behavior. Meanwhile, Nahrgang et al [14] defines working conditions as job demands and job resources, where job demands have

the dimensions of risk and danger in work, while job resources have the dimensions of a supportive environment, adequate leadership, and a good safety climate.

The influence related to working conditions on safety behavior can be seen from research conducted by Fernández-Muñiz et al (2017), where working conditions can be divided into 4 components, namely, work pressure, environmental conditions & occupational hazards, safety incentives, and co-worker support. The research model shows that working conditions is one of the factors that have a significant influence on safety behavior. In addition, research conducted by Nahrgang et al [14] also shows the influence of the working condition variable on the safety behavior. This is confirmed by research conducted by Jung et al [10] which shows the influence of working conditions on safety behavior.Considering the background situation and several studies, this systematic literature review aims to evaluate the impact of safety leadership and working condition on safety behavior. The primary objectives are to identify various forms of safety leadership and working condition, understand how these factors can affect safety behavior, and explore strategies to mitigate unsafe behavior to prevent work incident.

II. METHODS

The literature review is used to search, select, and extract the literature relevant to the research questions. First, the systematic review process is identifying research question and research objective using online databases. Some leading indexed databases such as ScienceDirect, Scopus, SpringerLink, Emerald, and Google Scholar are used at this stage. These databases were chosen to ensure the quality of articles reviewed in this paper. Keywords that are used in the search included “organizational behavior”, “safety behavior”, “safety leadership”, and “working condition”. The second step is screening process for eligibility. To ensure the quality and relevance of the included studies, specific inclusion and exclusion criteria were established.

The criteria comprised peer-reviewed articles published between 2017 – 2023, articles written in English, and studies published in international journals or proceedings. On the other hand, exclusion criteria included articles published before 2017 and non-peer-reviewed articles. Initially, 38 research were collected to carry out this literature review research which was appropriate to the topic to be discussed. Then, after adding criteria to maintain the quality of articles, there are 14 studies that will be analyzed and carried out further reviews. The final step is data abstraction and analysis. The remaining articles were reviewed, analyzed, and evaluated using standardized forms to capture essential information from all chosen articles. The extracted data points included the author, title, objective, method, and results. This systematic approach to data extraction ensures that critical information is consistently captured across all studies, facilitating a comprehensive and unbiased analysis of the literature.

III. RESULT AND DISCUSSION

Result

This research succeeded in reviewing 14 studies originating from 10 different countries and having topics related to safety leadership, working conditions and safety behavior. The 10 countries are China, Spain, Saudi Arabia, Australia, Indonesia, Turkey, Malaysia, Italy, Ghana and Iran. Meanwhile, if we look at the year of publication, the majority of research reviewed was in 2021 and 2023, with 4 studies reviewed related to this topic relatively. Meanwhile, other studies were published in 2017 and 2019 with 1 study each and in 2020 and 2022 with 2 studies each. The majority of studies reviewed in this research used quantitative methods in their research, namely 13 studies. Meanwhile, only 1 study was in the form of qualitative research. For example, research conducted by Fernandez-Muniz et al [6] used quantitative methods to determine the relationship between safety leadership and working conditions on safety behavior, using 2 dimensions, namely safety compliance and safety participation.

The other example was research conducted by Fabiano [5] which used quantitative methods to study about human factor and safety performance.The research primarily focused on several aspects and indicators of safety leadership and working conditions that influence safety behavior through its forming indicators. Several indicators are included as key points, namely inspirational appeals, participative management,

management commitment, safety policy, and several other indicators that form the safety leadership variable. Meanwhile, several indicators are considered to form working conditions variables, namely working environment conditions and dangers, co-worker support, risk mitigation, equipment and technology, and several other indicators. The majority of research uses safety compliance and safety participation as indicators of safety behavior.

Discussion

Many research articles have been published to determine the influence of safety leadership and working conditions on safety behavior, however, the research conducted is very diverse and has a very broad topic coverage. Thus, it is necessary to summarize the research results to gain a better understanding. Therefore, this qualitative research was conducted as a systematic review to examine the results of this research and investigate the impact of safety leadership and working conditions on safety behavior. This research presents a fairly comprehensive qualitative summary that has been carried out by previous researchers in various countries.Safety leadership has a positive and direct effect on safety behavior [11]. However, safety leadership also has a positive and indirect effect on safety behavior through the influence of a mediating role, which is harmonious safety passion [17]. Harmonious safety passion acts as a mediating role whereas organizational identification acts as a moderating role in the relationship between safety leadership and safety behavior. The managerial implications derived from the findings of this research may encouraged employee safety behavior, improved company management, and maintain safety operation. Enhancing safety leadership will also increasing employee hazard recognition and risk perception [19].Basahel adds that high levels of safety compliance and safety participation are the effect of the influence provided by safety leadership through the mediating role of safety motivation and safety knowledge [3]. The findings from Basahel showed that there is a significant and direct effect of safety motivation on safety compliance and safety participation [3]. Thus, safety leadership can increase the level of safety behavior by increasing the level of safety motivation and safety knowledge.

This can also be done by carrying out effective supervision of employee groups, such as involving employees in the safety agenda and providing reward programs to employees if they have good safety performance to increase employee safety motivation and safety knowledge. Based on the research by Subramaniam et al [15], an assessment of safety leadership was carried out through coaching, caring and controlling indicators. From this scheme, it was found that safety leadership has a positive influence on safety motivation and safety knowledge, which acts as a mediating role on safety behavior. Then, safety motivation and safety knowledge also have a positive and significant influence on safety behavior [13]. Thus, this indicates that safety leadership influences safety behavior indirectly through safety motivation and safety knowledge. One thing that can improve safety behavior is by increasing effective supervision of employees. Another way that is quite effective is by providing proper training by management so that employee safety motivation and safety knowledge increases. Providing safety training indicates a good level of safety leadership and is a strong commitment from management to safety. Meanwhile, safety compliance and safety participation which is the indicator of safety behavior is conditioned by working condition according to Fernandez-Muniz et al [6].

Safety compliance is affected by work pressure, environmental conditions and occupational hazards, and co-worker support, while safety participation is conditioned by environmental conditions and occupational hazards, safety incentives, and co-worker support. This research showed that working condition has a positive and direct effect on safety behavior. This research is strengthened by Liu et al [12] who have results of the research that co-worker factors greatly influence safety behavior. These factors can be group cohesion, group infectivity, and group pressure. Group member interaction factors include the safety behavior of co-workers and additional roles of co-workers which can be divided into safety communication, safety guidance, and safety concerns. Thus, management's role is to control informal groups by guiding and standardizing these groups so that they have a positive role among co-workers. Another role in making the influence of co-worker positive is by providing motivation to employees to take on additional roles in the field of safety and providing incentives, so that a culture will be created among co-workers towards good safety behavior.

IV. CONCLUSION

In conclusion, this systematic literature review reveals the significant effect of safety leadership dan working condition on safety behavior, both directly or indirectly. From all of the 14 studies that have been reviewed, all research shows the same findings that it is important to maintain safety behavior to maintain the company's safety performance. In this systematic literature review, it is hoped that management will gain a better and more comprehensive understanding of issues related to safety behavior to give organizational support in order to correctly determine safety programs that are useful for reducing work accident rates.

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