

THE INFLUENCE OF MOTIVATION, KNOWLEDGE, AND SKILLS ON EMPLOYEE WORK SAFETY IN THE FIBER LINE UNIT AT PT. RIAU ANDALAN PULP AND PAPER PANGKALAN KERINCI

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Abstrak

Occupational Safety and Health (OSH) is an important aspect in the world of work that aims to protect workers from accidents and occupational diseases. This study aims to determine the effect of motivation, knowledge, and skills on employee safety at PT. Riau Andalan Pulp and Paper Pangkalan Kerinci. The method used is quantitative descriptive with analysis of variance (ANOVA) and a sample of 64 respondents. The results show that motivation, knowledge, and skills have a significant effect on occupational safety. Knowledge has the most dominant influence. These findings indicate that improving knowledge and skills through training can strengthen the safety culture. The conclusion of this study is that motivation, knowledge, and skills have a positive and significant effect on improving occupational safety. Therefore, companies need to develop OSH training and socialization programs and create a work environment that supports compliance with safety procedures. Thus, companies can improve occupational safety and reduce the risk of accidents and occupational diseases. This research contributes to the development of effective occupational safety strategies in companies.

Keywords: Work Safety, Motivation, Knowledge, Skills, Employees

Introduction

Occupational Safety and Health (K3) is an important aspect in the workplace, aiming to protect workers from work accidents, occupational diseases, and other potential risks. Effective implementation of K3 can reduce the number of accidents and occupational diseases, and increase productivity and worker welfare. However, although many companies have established K3 policies, the level of compliance with safety and health standards still shows varied results. One factor influencing the effectiveness of K3 implementation is employee motivation, knowledge, and skills. Employee motivation plays an important role in encouraging them to comply with work safety procedures. Motivated employees tend to be more aware of the importance of maintaining their own safety and the work environment. Skills include operating personal protective equipment, using work tools correctly, and responding to situations. Employee knowledge of K3 includes their understanding of safety procedures, the use of personal protective equipment (PPE), and risk mitigation steps. The higher the level of employee knowledge, the better they are able to recognize potential hazards. Adequate knowledge of work safety is also a crucial factor, because without a good understanding of procedures and potential hazards, employees tend to ignore or not take necessary preventive actions. Adequate knowledge of K3 will increase employee awareness of potential hazards, so they can take preventive actions. Several studies show that employees with a high level of knowledge tend to be more alert and comply with safety procedures compared to those with less knowledge. Employee knowledge of K3 has a significant influence on their perception of hazard risks. Companies need to

invest time and resources in training and create a good safety culture to minimize potential accidents (Smith, M. J., & Sainfort F, 2020). Employee skills include knowledge, technical abilities, and competence in performing tasks. These skills are acquired through training, education, and work experience. Skilled employees are better able to recognize potential hazards, take preventive actions, and respond to emergencies quickly (Goetsch, D. L, 2019). Employee skills have a significant relationship with work safety and the perception of hazard risks in the workplace. Investment in employee training and development is a strategic step in creating a safe and healthy work environment (ILO, 2022). Workers tend to behave unsafely by ignoring safety even though it is very important for their safety. For example, in carrying out their work, workers often do not follow Standard Operational Procedures (SOP) and only work based on their experience (Septiani N, 2018). The Boston Consulting Group (BCG) in 2015 found that Indonesia has a less qualified workforce and relatively low worker performance. The Human Development Index (HDI) provides the level of human resource development in a country. The output of Indonesia's HDI ranking in Southeast Asia during the period (2010-2014) showed that Indonesia ranked sixth, below Singapore, Brunei, Malaysia, Thailand, and the Philippines (Sari Wu, 2016). (Smith & Johnson, 2018) Researched the effect of training and motivation on occupational safety in the manufacturing industry. The results showed that high motivation increased compliance with safety procedures. Anderson et al. (2019) Examined the relationship between work motivation and risk perception in the mining sector. It was found that more motivated employees had a higher awareness of potential hazards. Brown & Taylor (2020) researched the relationship between technical skills training and work motivation on work accidents in the construction sector. Garcia & Lopez (2021) Analyzed the effect of intrinsic and extrinsic motivation on the use of PPE in the healthcare sector.

Method

The method used is quantitative descriptive, according to Sugiyono (2019), quantitative descriptive method is a research method based on the post-positivism philosophy, commonly used to examine natural object conditions, where the researcher acts as the key instrument and explains a situation objectively or based on theories and visible facts, where data collection related to independent variables and dependent variables is carried out simultaneously. This research is used to see whether there is a relationship between independent variables (motivation, knowledge, and skills) and the dependent variable (occupational safety) in the studied sample.

Result

1. The Effect of Motivation on Occupational Safety in the Fiber Line Unit of PT. RAPP Pangkalan Kerinci

The research results show that motivation has a positive and significant effect on the occupational safety of employees in the Fiber Line Unit of PT. Riau Andalan Pulp and Paper. Based on the results of the multiple linear regression test in Table 4.11, it is known that the motivation variable (X1) has a coefficient value of 0.226 and a significance value of 0.012. This means that every one-unit increase in motivation will increase occupational safety by 0.226 units, assuming other variables are considered constant. These results indicate that motivation is one of the important factors that play a role in maintaining occupational safety, although it is not the most dominant compared to other variables. This research was conducted at the Fiber Line Unit of PT. Riau Andalan Pulp and Paper (PT. RAPP), located in Pangkalan Kerinci, Pelalawan Regency, Riau Province. This location was chosen due to its industry characteristics, which are high-risk and have high productivity demands. The Fiber Line Unit is one of the main operational lines that

processes wood fiber into pulp, the raw material for paper production. The work process in this unit involves high-pressure machines, chemicals, and mechanical tools that require high vigilance and compliance with occupational safety procedures. In such a highly technical work environment, work motivation becomes one of the determining factors in how a worker behaves towards occupational safety. The research results show that work motivation has a positive and significant effect on employee occupational safety. Based on the results of multiple linear regression analysis, motivation has a coefficient value of 0.226 with a significance value of 0.012, which means its effect on occupational safety is quite strong. In the context of the Fiber Line Unit, this is very important given the high work pressure and the constant potential for accidents.

2. The Effect of Knowledge on Occupational Safety in the Fiber Line Unit of PT.RAPP Pangkalan Kerinci

Knowledge plays a very important role in determining the extent to which employees are able to work safely and according to procedures. This research was conducted at the Fiber Line Unit of PT. Riau Andalan Pulp and Paper (PT. RAPP) located in Pangkalan Kerinci, Riau. This unit is a vital part of the company's production process as it is responsible for converting wood fibers into pulp, the basic material in the paper industry. The process in this unit not only requires speed and precision, but also direct involvement with chemicals, heavy equipment, high temperatures, and pressurized machinery. Such a work environment naturally has a high potential for danger, so employees' knowledge of occupational safety is crucial in determining whether the process runs safely or not. Based on the research results, knowledge is proven to have a significant influence and is the most dominant variable on employee occupational safety in this unit. Bivariate analysis results (Table 4.9) show that 57 out of 64 respondents have good knowledge, and 51 of them also have good occupational safety. A p-value of 0.000 and an Odds Ratio of 20.800 indicate that workers with good knowledge are 20 times more likely to work safely compared to those with less knowledge. This finding is reinforced by the multiple linear regression test (Table 4.11), where the knowledge variable has a regression coefficient of 0.978 and a Beta of 0.758, the highest figure compared to motivation and skills. This confirms that knowledge is the strongest variable influencing occupational safety at this research location. Not just supportive, knowledge is the main foundation of all safe work behavior.

3. The Influence of Skills on Occupational Safety in the Fiber Line Unit of PT. RAPP Pangkalan Kerinci

This research was conducted at the Fiber Line Unit of PT. Riau Andalan Pulp and Paper (PT. RAPP) located in Pangkalan Kerinci, Riau. This unit is an important part of the pulp and paper industry process because it is responsible for processing wood into fiber through complex chemical and mechanical processes. Here, workers face high-temperature pressure, chemicals such as white liquor and black liquor, as well as heavy equipment and pressurized piping systems. With such high work risks, work skills are crucial to prevent accidents and ensure the production process runs smoothly and safely. In this work context, the research results show that skills have a significant influence on occupational safety. The bivariate test results in Table 4.10 show that out of 64 respondents, 55 people (85.9%) have good work skills. Of this number, 48 people (75%) are categorized as having good occupational safety. Meanwhile, of the 9 people with low skills, only 3 people (4.7%) have good occupational safety. A significance value of $p = 0.011$ and an Odds Ratio of 10.800 indicate that skilled workers are almost 11 times more likely to work safely compared to unskilled workers. These results are reinforced by the multiple linear regression test, where skills have a coefficient value of 0.168 and a Beta value of 0.155, with a significance of 0.011. Although not the most dominant variable, skills are proven to be one of the main factors shaping occupational safety behavior, especially in locations such as the Fiber Line Unit which requires speed, accuracy, and readiness to face technical hazards every day.

4. The Most Influential Variables on Occupational Safety

This research was conducted at the Fiber Line Unit of PT. Riau Andalan Pulp and Paper (PT. RAPP) located in Pangkalan Kerinci, Riau. This unit is a very crucial and complex work area, as it handles the process of cooking wood into pulp, using pressurized machinery, high temperatures, and chemicals such as white liquor and black liquor. High work risks demand all employees to work not only carefully, but also with a sufficient understanding and skill base. In such an environment, It is important to know which variables are most determining for work safety, so that training can be effectively directed. The multiple linear regression results in this study show that of the three variables tested, namely motivation, knowledge, and skills, the knowledge variable is the most dominant factor affecting work safety. This is proven by the highest Beta value, which is 0.758, and a regression coefficient value of 0.978, with a significance of 0.000. This means that an increase in knowledge has a greater impact compared to the other two variables on changes in the level of work safety in the Fiber Line Unit of PT. RAPP. Work safety knowledge at this location includes mastery of Standard Operating Procedures (SOP), understanding chemical risks, proper use of PPE, and how to handle incidents such as hot steam leaks or pressure explosions. When a worker understands all of this thoroughly, they are not only better prepared to face dangers, but also able to prevent them before they occur. This is where the power of knowledge lies: it acts as a protector from the way of thinking.

Conclusion

Based on the research results regarding the influence of motivation, knowledge, and skills on employee work safety in the Fiber Line Unit of PT. Riau Andalan Pulp and Paper (PT. RAPP), it can be concluded that all three variables significantly influence work safety. However, among the three, the knowledge variable has the most dominant influence. This is proven by the highest regression coefficient value and Beta value for the knowledge variable, which are 0.978 and 0.758, with a significance level of 0.000. This means that the higher an employee's knowledge of work safety, the greater the likelihood they will work safely and according to procedures. Knowledge becomes the most influential factor because it provides a basis for workers to understand risks, correctly implement SOPs, and make appropriate decisions while working, especially in high-risk work environments like PT. RAPP. Without sufficient knowledge, motivation and skills alone are not enough to guarantee work safety. Thus, the company needs to focus its efforts on improving work safety through strengthening employee knowledge, such as regular training, understanding evaluations, and periodic refreshers on OHS material.

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