

Analysis of Work Accident Risk Factors Among Freight Transportation Employees in A Preventive Maqasid Sharia Approach

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Abstract. Workplace accidents are a serious issue in the freight transportation sector, causing losses for both employees and companies. This study analyzes risk factors such as age, tenure, and work behavior, while exploring an Islamic approach based on maqasid sharia to minimize accidents. Through a survey of 70 employees at PT Sinar Multi, the results indicate that unsafe behavior is the primary cause of accidents. The Islamic approach, through values such as the protection of life (*al-nafs*) and trustworthy work, is recommended to enhance safety awareness. This study proposes safety training based on spiritual values as part of a holistic solution.

Keywords: Workplace Accidents, Risk Factors, Workplace Safety, Maqasid Sharia, PT Sinar Multi

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INTRODUCTION

Work safety is a vital element in the industrial world, particularly in the freight transportation sector, which is fraught with risks. According to data from the Central Statistics Agency, Indonesia records thousands of workplace accidents annually, with most occurring in the logistics sector. PT Sinar Multi, a rail-based freight company, reported that 74.3% of employees experienced workplace accidents. These incidents are mainly attributed to unsafe work behaviors, inconsistent use of personal protective equipment (PPE), and inadequate work environments (An et al., 2023; Xiang et al., 2023; Lee et al., 2021; Rau et al., 2020; McFarland et al., 2020).

Islam, as a comprehensive life guide, emphasizes values that promote workplace safety (Sohaimi et al., 2020; Haque et al., 2024; Azmin Shompa et al., 2024; Muthoifin et al., 2024). Within the framework of maqasid shariah, the protection of life (*al-nafs*) is one of the primary objectives. Therefore, incorporating Islamic values into workplace safety management offers a sustainable solution to reducing workplace accidents.

METHODS

This research employed a quantitative survey method with a descriptive-analytic approach. Data were gathered through questionnaires distributed to 70 employees of PT Sinar Multi. Research variables included age, years of service, work behavior, as well as the frequency and types of workplace accidents. Statistical analysis was conducted using a chi-square test to examine the relationships between independent and dependent variables.

RESULTS AND DISCUSSION

Respondent Characteristics

Age

Table 1. Age

Category	N	%
>30	52	74,3
<30	18	25,7
Total	70	100

Based on the table above, it can be observed that workers are predominantly over 30 years old, with 52 workers (74.3%) in this age group, compared to 18 workers (25.7%) under 30 years old.

Education

Table 2. Education Level

Education Level	N	%
Junior High School	20	28,6
Senior High School	50	71,4
Total	70	100

Based on the table above, it can be observed that 20 workers (28.6%) have completed junior high school (SMP) as their highest level of education, while 50 workers (71.4%) have completed senior high school (SMA). The majority of workers have senior high school (SMA) as their highest level of education.

Bivariate Analysis

Behavior

Table 3. Behavior

Behavior	N	%
Safe	25	35,7
Unsafe	45	64,3
Total	70	100

Based on the table above, it can be seen that workers with safe behavior total 25 people (35.7%), while those with unsafe behavior total 45 people (64.3%). The majority of workers exhibit unsafe behavior.

Table 4. Workplace Accidents

Workplace Accidents	N	%
Experienced	52	74,3
Never Experienced	18	25,7
Total	70	100

Based on the table above, it can be observed that 18 workers (25.7%) have never experienced workplace accidents, while 52 workers (74.3%) have experienced workplace accidents. The majority of workers have experienced accidents while working.

Univariate Analysis

Table 5. Relationship Between Behavior and Workplace Accidents

Behavior	Workplace Accidents						p
	Experienced		Never Experienced		Total		
	N	%	N	%	N	%	
Safe	14	6,4	11	18,6	45	64,3	0,020
Unsafe	38	33,4	7	11,6	25	35,7	
Total	52	52,0	18	18,0	70	100	

Based on Table 5, it can be observed that 45 workers (64.3%) exhibit safe behavior, while 25 workers (35.7%) do not. Among workers who exhibit safe behavior, 14 workers (6.4%) have experienced workplace accidents, and 11 workers (18.6%) have not. Meanwhile, among workers who exhibit unsafe behavior, 38 workers (33.4%) have experienced workplace accidents, and 7 workers (11.6%) have not. The p-value of 0.020 indicates a statistically significant relationship between workers' behavior and workplace accidents at a 5% significance level ($p < 0.05$). This means there is a significant relationship.

Work Behavior

Humans as a factor causing accidents are often referred to as "Human Error" and are frequently misunderstood, as they are always blamed for causing accidents. In fact, accidents often occur due to design flaws in machinery and work equipment that are not suitable (Tarwaka, 2017). Regarding the high number of workplace accidents in the construction sector, it is expected that company leadership will commit to proactively taking steps to conduct risk assessments and implement control measures to prevent workplace accidents. (Azzahra et al., 2023) stated that behavior is often predominantly unsafe. This indicates that factors such as work pressure, fatigue, and weak safety culture are direct causes of accidents.

Based on research findings on the behavior variable, it can be concluded that the dominant behavior of workers is unsafe. Unsafe behavior in the goods delivery workplace can pose serious risks to both employee safety and the quality of the goods being delivered. One common unsafe behavior is neglecting to use personal protective equipment (PPE) such as gloves, helmets, or safety shoes when handling heavy items. Some employees may feel that wearing PPE slows down their work, leading them to choose to work without adequate protection (Wong et al., 2020; Ahyana et al., 2024). However, this increases the risk of accidents such as being struck by sharp objects, falling, or slipping, which can result in serious injuries. Additionally, improper lifting methods, such as lifting excessively heavy items directly without the assistance of tools like trolleys or forklifts, are another example of unsafe behavior. Lifting heavy items with incorrect body posture can lead to back injuries and muscle pain. Some employees may ignore proper lifting procedures due to being in a hurry or feeling overconfident, but such actions can have detrimental long-term effects on their health. Other unsafe behaviors include using equipment inappropriately or neglecting to inspect equipment conditions before use. For instance, some workers may use damaged or suboptimal tools without prior inspection, increasing the risk of workplace accidents. Similarly, operating transportation equipment like forklifts without adequate training can lead to accidents or damage to goods and facilities.

Workplace Accidents

According to Suma'mur (1981), 80–85% of workplace accidents are caused by negligence (unsafe human acts) and human error. These accidents and errors are influenced by factors such as age, gender, work experience, and education. Errors tend to increase when workers experience stress from abnormal workloads or reduced work capacity due to fatigue. Green mentions that behavior is shaped by three main factors: predisposing factors, enabling factors, and reinforcing factors. Predisposing factors include knowledge and public attitudes.

This study found that the majority of workers had experienced workplace accidents. In terms of the types of accidents, the most common involved exposure to hazardous materials, such as chemical-based packages like spilled thinner, caused by worker negligence. Regarding the nature of injuries, fractures in the hands, legs, and internal organs were the most common. Injuries to internal organs, such as the chest often hit by falling boxes, were prevalent. Accidents were frequently caused by lifting or transporting equipment due to workers not following standard regulations, leading to workplace accidents.

Work standards for goods transportation are crucial to ensure efficiency, safety, and speed in the delivery process. Every stage of transportation, from preparation to delivery, must adhere to established procedures to ensure goods arrive safely at their destination. These stages include preparation, packaging, transportation, and receipt of goods. Every member of the transportation team must understand the applicable standard operating procedures, from preparing goods to handing them over to the recipient.

Preventive Measures: Maqasid Shariah, Behavior, and Workplace Accidents in Risk Factor Analysis

The Islamic approach to workplace safety emphasizes the importance of safeguarding life (al-nafs) as one of the primary objectives of maqasid shariah. Islam teaches that work is a form of worship, and employees must perform their duties with itqan (diligence) and amanah (trustworthiness) within the framework of workplace safety. Protecting life involves providing a safe work environment, safety training, and the use of personal protective equipment (PPE). Al-nafs refers to the internal aspects of a person, including will, motivation, and awareness. The integration of behavior and the human soul is critical in understanding why unsafe behavior often occurs and how a safer work environment can be created.

First, it is important to note that the human soul has multiple layers that interact with each other. When work pressure increases, employees may feel stressed and anxious, affecting their decisions. Such anxiety can tempt employees to ignore safety procedures to meet targets or job demands. In these situations, the soul, which should prioritize safety, can be distracted by the need to impress superiors or achieve quick results.

Second, intrinsic motivation plays a significant role in workplace behavior. Employees with high motivation to maintain their own safety and that of their coworkers are more likely to adhere to safety procedures. Conversely, if their motivation focuses on quick results without regard to safety, they are more likely to take risks. In this context, companies need to foster a safety-oriented culture where employees feel valued and recognized for adhering to safety procedures. Recognizing safe behavior can enhance intrinsic motivation and cultivate a sense of responsibility.

Self-awareness is another aspect that influences unsafe behavior. Employees who lack awareness of potential risks in their work environment are more likely to engage in risky behavior. Enhancing self-awareness can be achieved through training and socialization about workplace safety. By understanding the importance and impact of safety, employees can better identify unsafe behavior and correct it. This also includes understanding the psychological effects of workplace injuries on themselves and their coworkers.

Moreover, team solidarity also affects workplace behavior. Employees are often influenced by the norms in their work environment. If coworkers tend to ignore safety procedures, others may feel pressured to follow suit, even if they personally recognize the risks. Therefore, it is crucial to create an environment where workplace safety is widely accepted as the norm. By fostering a positive work climate where safety is prioritized, unsafe behavior can be minimized.

Understanding unsafe behavior through the lens of al-nafs enables companies to develop more comprehensive strategies to improve workplace safety. This involves enhancing awareness, motivation, and a strong safety culture among employees. When the soul and workplace behavior

align with safety principles, the work environment becomes safer, improving employee well-being and the quality of goods delivery services.

In the context of al-nafs, the human soul is inclined toward goodness. However, in high-pressure situations, such as in goods delivery, the soul can be influenced by external factors. The human soul relies heavily on social interaction and support from others to cope with trauma. When employees feel supported by colleagues and management, they are better able to manage negative emotions and recover. Conversely, a lack of social support can worsen emotional conditions, leading to isolation and despair. The importance of education and training on workplace safety in the context of al-nafs cannot be overstated. When workers do not adhere to safety regulations, the risk of accidents increases, leading to serious injuries or even fatalities. This clearly undermines the shariah objective of protecting life. Islam teaches that humans must act cautiously and responsibly in all aspects of life, including at work, to ensure the safety of themselves and others. Unsafe behavior also poses risks to coworkers, meaning such actions threaten not only the individual worker's life but also the lives of others involved in the work.

Life protection is not only an individual responsibility but also a collective one. Employers or company leaders are responsible for ensuring that workers have the knowledge and resources to work safely. This includes providing workplace safety training, regular supervision, and strict sanctions for violations of safety regulations. In Islamic teachings, the obligation to protect employee safety falls under broader social responsibilities, and employers will be held accountable for their workers' safety in the Hereafter.

CONCLUSION

Unsafe behavior, with a work behavior score above 63, indicates that there is still low compliance with workplace safety, which results in high accident risks. The majority of workers in this study exhibited unsafe behavior. Actions such as not using personal protective equipment and working without adhering to safety standards are key factors that increase the risk of accidents. This unsafe behavior reflects a lack of awareness and discipline in following the safety procedures established by the company. Enhancing knowledge and awareness of the importance of workplace safety can be the first step in reducing risky behaviors. Islamic values such as amanah (trust) and ihsan (excellence) can help increase workers' awareness of safety as part of their responsibility and concern for themselves and others. Unsafe behavior is the dominant factor contributing to workplace accidents at PT Sinar Multi. Age and years of service also contribute to the level of accident risk. The Islamic approach, especially through the values of protecting life (al-nafs) and responsibility, offers a holistic solution to reduce workplace accident risks.

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