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The Effect of Safety Leadership on Safety Compliance: The Mediation Role of Safety Behaviors and Safety Motivation

Kevin Yosua Tahapary[1], Ali Ridho Laksono[2]

[1,2] Department of Management, Faculty of Economics and Business, Universitas Airlangga, Surabaya, East Java. Indonesia. Email: kevin.yosua.tahapary-2022@feb.unair.ac.id[1], aliridholaksono@gmail.com[2]

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ABSTRACT
This study identifies problems that arise due to neglect or reduction in the use of necessary personal protective equipment (PPE), as well as the lack of routine inspection of the condition of PPE at PT. PRIA. In this context, the study examines the effect of safety leadership on safety compliance by considering the mediating role of safety behaviors and safety motivation. The method used in this study is a quantitative approach with a causal design. Data were collected through an online questionnaire distributed to 250 respondents using a purposive sampling. The independent variable in this study is safety leadership, while the dependent variable is safety compliance. Safety behaviors and safety motivation function as mediating variables that are expected to explain the relationship between safety leadership and safety compliance. Using a quantitative explanatory methodology, the research utilized Structural Equation Modeling with Partial Least Squares (SEM-PLS), which was used in this work via SmartPLS software. A structured survey was used to gather information from 250 employees in PT. PRIA. The findings reveal a positive relationship between safety leadership and safety compliance, considering the mediating role of safety behaviors and safety motivation.

Keywords: Safety Leadership, Safety Behavior, Safety Motivation, Safety Compliance.
JEL Code: M54, J81, C38.

I. Introduction

PT. PRIA is a company engaged in the service sector, especially the management and transportation of Hazardous and Toxic Materials (B3) waste, hereinafter abbreviated as B3 waste, which operates on the island of Java, especially in East Java. According to Government Regulation Number 101 of 2014, this company has an official permit to collect, transport, utilize, and process B3 waste. PT. PRIA manages various types of B3 waste, such as medical (infectious), fly ash, bottom ash, IPAL sludge, and other B3 waste. The management carried out by this company is carried out using the electrocoagulation and incinerator methods, as well as the utilization of waste such as waste from fly ash or bottom ash, which can be products such as bricks, red bricks, lightweight bricks, and concrete. However, this is a significant concern because PT. PRIA's activities are not free from controversy in 2025, where PT carries out the loading and unloading activities of medical waste in open spaces. PRIA, where the workforce carrying out medical waste loading and unloading activities did not appear to use Personal Protective Equipment (PPE). It is also seen that the body condition of the workers

ISSN [Online]: 2776-6365

who carried out the activity was full of wounds, and workers were pricked by injection needles from the medical waste being transported. The use of PPE is one of the most crucial procedures in the management of B3 waste, especially at PT. PRIA. This is the main highlight of implementing safety compliance in periodic Occupational Safety and Health (OSH) practices to protect workers and maintain public trust in the company.

The implementation of this research was conducted at PT. PRIA is a B3 waste management company. Seeing the indifference of the use of PPE is an unfortunate phenomenon because there are still problems related to the relatively low level of compliance (safety compliance) of staff or employees with safety standards and procedures where not only looking at the safety policies and systems implemented, but also other factors that influence such as team member safety behavior and motivation itself. The study looked at the application of safety leadership and whether it could be a solution to improve team member safety compliance at PT. PRIA. The role of an effective leader in work safety is felt to be able to influence safety behaviors. These include compliance with safety procedures and the use of proper Personal Protective Equipment (PPE), which can have an impact on increasing overall compliance. According to Jiang et al. (2024), leaders who communicate safety tend to motivate employees to demonstrate appropriate safety behaviors. Safety behaviors, as they should be, include looking at safety procedures and using personal protective equipment properly, which is crucial to safety, especially in handling B3 waste. This study aims to investigate the influence of safety leadership on safety compliance by examining the mediating role of safety behaviors and safety motivation. Looking at the existing dynamics, it is hoped that a more effective strategy will be developed to improve work safety and minimize the risk of accidents and environmental pollution due to handling B3 waste at PT. PRIA.

Based on a more detailed discussion on safety compliance, this writing is expected to provide a deep and comprehensive understanding of the need for worker compliance with safety rules and procedures. In addition, it looks at various factors that can influence it. Therefore, this writing is expected to contribute to efforts to improve occupational safety and health in the company environment, especially at PT. PRIA is a company engaged in B3 waste management and transportation services.

II. Literature Review and Hypothesis Development

Safety is a very crucial aspect in a company. A leader has an important role in distributing safety practices to all workers. Safety leadership is an active and sustainable leadership behavior prioritizes safety through various actions. The actions that can be taken are through effective communication, providing good examples, empowering employees, and ongoing suggestions (Bautista et al., 2023). Safety leadership plays an important role in shaping and influencing safety behaviors in the workplace. Safety leadership refers to the behavior of a leader who demonstrates a commitment to work safety through effective communication, providing examples of safe behavior, and strengthening a safety culture. Leaders who consistently apply safety leadership encourage workers to engage in safety behaviors, such as complying with established work procedures, using personal protective equipment (PPE) correctly, and reporting potential hazards in the workplace. For example, research by Atikasari et al. (2022) in the context of PT Pelindo Terminal Petikemas (SPTP) showed that effective safety leadership significantly improved safety behavior among workers.

H1 : Safety leadership has a significant and positive effect on safety behaviors

Safety leadership plays an important role in increasing employee safety motivation. Leaders who demonstrate a commitment to occupational safety, pay attention to employee needs, and are actively involved in creating a safe work environment can encourage employees' intrinsic motivation to behave safely. This type of leadership involves providing positive feedback, recognizing safe behavior, and providing consistent employee support. This creates a sense of shared responsibility for workplace safety. Ta et al (2022) stated that safety leadership can increase safety motivation through mediation mechanisms such as effective communication and employee empowerment. Meanwhile, research by Bautista et al. (2023) shows that strong leadership in the safety field can strengthen the safety climate and encourage employees to be more vocal in

ISSN [Online]: 2776-6365

expressing suggestions or concerns about occupational safety. In addition, Lu et al. (2017) found that safety leadership is closely related to organizational citizenship behaviors that support a safety culture in the company.

H2 : Safety leadership has a significant and positive effect on safety motivation

Safety leadership plays a significant role in increasing safety compliance. Leaders who consistently demonstrate a commitment to safety, enforce rules fairly, and communicate the importance of compliance to all employees can create a strong safety culture. In this context, effective leadership ensures that safety regulations are followed and encourages workers to actively participate in maintaining a safe work environment. Setiadi et al. (2022) emphasize that strong safety leadership directly relates to worker compliance with safety regulations, especially in high-risk industries. Leaders who can provide clear direction, provide constructive feedback, and set realistic expectations for safety tend to increase worker compliance significantly. Another study by Barling et al (2020) revealed that procedural justice or fairness in implementing safety rules by leaders is key in mediating the relationship between safety leadership and safety compliance. Workers are more likely to comply when they feel treated fairly regarding safety rules and policies. In addition, Basahel (2021) highlighted that safety leadership not only contributes to compliance with safety regulations but also encourages active worker participation in safety initiatives. In an industrial setting, leaders who set a positive example and show concern for workers' well-being can create intrinsic motivation to comply with safety regulations.

H3 : Safety leadership has a significant and positive effect on safety compliance

Safety behaviors, or safe behaviors, are a series of actions taken by workers to ensure their safety and that of their coworkers. These behaviors include compliance with safety procedures, use of personal protective equipment (PPE), and being proactive in identifying and reporting potential hazards. Safety behaviors are important in creating a safe work environment and minimizing the risk of accidents. Research shows that safety behaviors positively correlate with safety compliance, which is worker compliance with the organization's safety regulations and standards. According to Probst and Estrada (2010), workers who consistently practice safe behaviors are more likely to demonstrate compliance with safety policies. They follow instructions and maintain the integrity of safety procedures as part of their work routine.

H4 : Safety behaviors have a significant and positive effect on safety compliance.

Safety motivation is an internal or external drive that encourages individuals to behave safely and comply with established safety standards. In occupational safety, motivation can come from intrinsic factors, such as the desire to protect oneself and others, as well as extrinsic factors, such as rewards from the company or avoidance of punishment. Previous research has shown that safety motivation has a positive relationship with safety compliance, which is worker compliance with occupational safety rules and procedures. Christian et al. (2022) stated that workers with high safety motivation tend to comply more consistently with safety protocols, especially in high-risk work environments.

H5 : Safety motivation has a significant and positive effect on safety compliance

Safety Leadership is important in creating a safe work environment and compliance with safety procedures (Safety Compliance). However, the relationship between Safety Leadership and Safety Compliance is not only direct. Research shows that this relationship can be mediated by Safety Behaviors, namely individual behavior that reflects efforts to maintain the safety of themselves and others in the workplace. Effective leaders can encourage safe behavior through clear communication, positive examples,

ISSN [Online]: 2776-6365

and constructive feedback. In this case, safety leadership influences safety behaviors, such as using personal protective equipment, reporting potential hazards, and compliance with safety procedures. Furthermore, these safety behaviors are important in increasing safety compliance, namely compliance with established work safety regulations and procedures. Atikasari et al. (2022) found that safety behaviors significantly mediate the relationship between safety leadership and safety compliance. Leaders who demonstrate a high commitment to safety can create a culture that encourages safe behavior, thereby increasing compliance with safety. Another study by Barbosa (2020) also confirmed that workers' safe behavior, which is influenced by a safety-supportive leadership style, significantly contributes to safety compliance in the manufacturing industry.

H6 : Safety behaviors significantly mediate the effect of safety leadership on safety compliance

Safety leadership has a significant influence on safety compliance in the workplace. Leaders who demonstrate a high commitment to safety can influence employee behavior in various ways, including creating a supportive work environment and providing clear direction regarding safety. However, this influence is often indirect, but instead mediated by internal factors within employees, one of which is safety motivation. Safety motivation refers to internal or external drives that encourage employees to comply with occupational safety standards. Employee beliefs about safety's importance, leaders' incentives, or personal experiences can motivate this motivation. Research by Nahrgang et al. (2020) shows that safety motivation is a mediator that strengthens the relationship between safety leadership and safety compliance. Leaders who pay attention to safety tend to increase employee motivation to behave safely, ultimately increasing compliance with safety protocols. Neal and Griffin (2006) also found that safety motivation is an important mechanism that bridges the influence of safety leadership on safety compliance. They emphasize that effective leadership, such as providing positive feedback on safe behavior, can increase employee motivation to prioritize safety in their daily work. This is in line with the findings of Christian et al. (2022), who emphasized that in high-risk work environments, safety motivation plays a key role in ensuring workers remain compliant with safety regulations.

H7 : Safety motivation significantly mediates the influence of safety leadership on safety compliance.

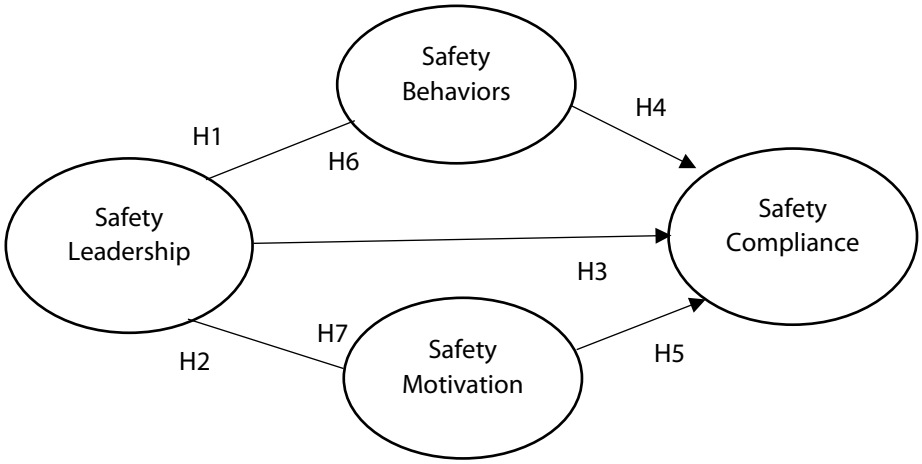

Figure 1. Conceptual Framework

III. Research Method

GOLDEN RATIO
ISSN [Online]: 2776-6365

This study uses the Total Population Sampling (TPS) technique, which is used if the population is small, where the entire population that meets the criteria can participate in the research being carried out. Respondents included in this study are permanent employees of PT. PRIA. Partial least squares (PLS) with structural equation modeling (SEM) using the SmartPLS software is appropriate for this research for several reasons. Firstly, SEM-PLS allows for the simultaneous analysis of many dependent and independent variables, making it a good choice for complicated model analysis incorporating multiple constructs and indicators. Second, SEM-PLS is robust even with small to medium sample sizes, making it suitable for this research given the purposive sampling method and specific respondent criteria. This characteristic ensures reliable results despite potential deviations from normality. SEM-PLS is perfect for both exploratory and predictive research since it is prediction-oriented and maximizes the explained variance of dependent variables. In this study, SEM-PLS helps predict the relationships between these constructs. The method also offers flexibility in specifying the measurement and structural models, allowing for accurate modeling of the constructs involved. Using bootstrapping techniques in SEM-PLS for hypothesis testing enhances the robustness of the results. Bootstrapping assesses the significance of path coefficients without relying on parametric assumptions, thus rigorously testing hypotheses. Furthermore, a thorough assessment of the model's explanatory and predictive capacity is made possible by SEM-PLS's extensive model evaluation metrics, which include R^2 (coefficient of determination), path coefficients, effect sizes (f^2), and predictive relevance (Q^2). The role of mediation in this study, as an indirect influence through a p-value <0.05, indicates that the indirect influence has a significant effect. A p-value> 0.05 indicates that the indirect influence has an insignificant effect. Partial mediation on indirect influence is described as a condition where the indirect influence is smaller than the direct influence. Conversely, complete mediation on indirect influence is described as a condition where the indirect influence is greater than the direct influence (Hair et al., 2020).

IV. Results and Discussion

4.1. Analysis Result

Table 1. Sample Criteria (N = 250)

Measurement	N	%
Gender		
Male	223	89.2%
Female	27	10.8%
Age (years)		
17–25	69	27.6%
26–34	83	33.2%
> 35	98	39.2%
Length of Work (years)		
< 5	191	76.4%
5–10	30	12.0%
> 10	29	11.6%
Education Level		
Elementary School	11	4.4%
Junior High School	20	8.0%
Senior High School	118	47.2%
Bachelor's Degree	101	40.4%

Table 1 shows that most respondents were male, 223 people (89.2%), and female respondents were 27 people (10.8%). The majority of respondents were aged >35 years or older, 98 people (39.2%), 17-25 years old, 69 people (27.6%), and 26-34 years old, 83 people (33.3%). The majority of respondents worked for <5

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years, 191 people (76.4%), 30 respondents worked for 5-10 years (12%), and 29 respondents worked for >10 years (11.6%). The majority of respondents had a high school/vocational high school education, 118 people (47.2%), 101 respondents had a bachelor's degree (40.4%), 11 respondents had an elementary school education (4.4%), and 20 respondents had a junior high school education (8%).

4.1.1. Outer Model

The following is an illustration of the SEM diagram used in this research:

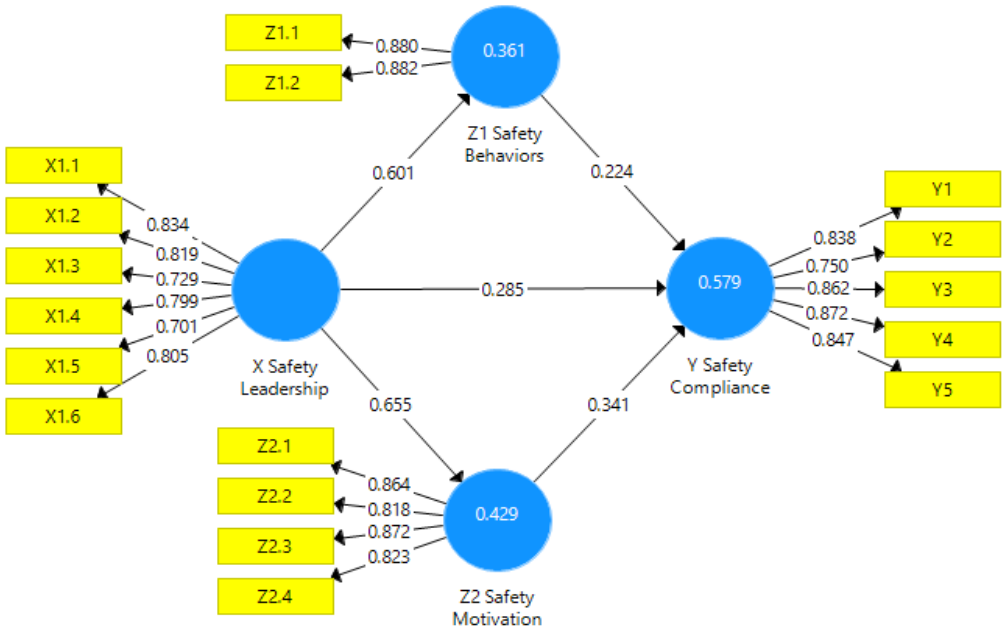

Figure 2. Loading Factor

The loading factor of each indicator on the variable has a minimum value of 0.6, and the Average Variance Extract (AVE) analysis has a minimum value of 0.5, but it does not meet the requirements. Based on the table below, it can be seen that the results of convergent validity testing show that all variables have indicators with loading factor values of more than 0.6 or 0.5, meaning that all indicators have met the convergent validity criteria.

Table 2. Results of Loading Factor

Variable	Item	Loading Factor	Information
(X) Safety Leadership	X1.1	0,834	Valid
	X1.2	0,819	
	X1.3	0,729	
	X1.4	0,799	
	X1.5	0,701	
	X1.6	0,805	
(Y) Safety Compliance	Y1	0,838	
	Y2	0,750	
	Y3	0,862	
	Y4	0,872	
	Y5	0,847	
(Z1) Safety Behaviors	Z1.1	0,880	
	Z1.2	0,882	
(Z2) Safety Motivation	Z2.1	0,864	

ISSN [Online]: 2776-6365

Variable	Item	Loading Factor	Information
	Z2.2	0,818	
	Z2.3	0,872	
	Z2.4	0,823	

Next, the AVE Method is used to assess the convergent validity of each construct and latent variable. The minimum value that is considered to be met is at least 0.5. The average variance extracted by AVE based on these SEM results is as follows:

Table 3. Average Variance Extracted Value

Variable	Average Variance Extracted (AVE)	Information
(X) Safety Leadership	0,613	Valid
(Y) Safety Compliance	0,697	
(Z1) Safety Behaviors	0,776	
(Z2) Safety Motivation	0,713	

In Table 3, the AVE values for the latent variables are Safety Leadership (0,613), Safety Compliance (0,697), Safety Behaviors (0,776), and Safety Motivation (0,713). Thus, it can be said that the measurement model is valid and meets the validity test requirements. The cross-loading values based on the results in this SEM are as follows:

Table 4. Cross-Loading Value

Item	X – Safety Leadership	Y – Safety Compliance	Z1 – Safety Behaviors	Z2 – Safety Motivation	Information
X1.1	0,834	0,601	0,516	0,583	Valid
X1.2	0,819	0,526	0,565	0,537	
X1.3	0,729	0,472	0,443	0,491	
X1.4	0,799	0,474	0,485	0,506	
X1.5	0,701	0,405	0,387	0,430	
X1.6	0,805	0,523	0,405	0,514	
Y1	0,578	0,838	0,632	0,615	
Y2	0,551	0,750	0,530	0,574	
Y3	0,538	0,862	0,563	0,588	
Y4	0,521	0,872	0,543	0,569	
Y5	0,493	0,847	0,548	0,624	
Z1.1	0,517	0,603	0,880	0,784	
Z1.2	0,542	0,589	0,882	0,666	
Z2.1	0,612	0,566	0,672	0,864	
Z2.2	0,512	0,675	0,650	0,818	
Z2.3	0,569	0,598	0,771	0,872	
Z2.4	0,519	0,567	0,688	0,823	

The cross-loading table 4 shows that the value for each latent variable is greater than the values of the other latent variables. This reliability test also examines the composite reliability value as an indicator of reliability, where both values should exceed 0.70. The Cronbach's alpha and composite reliability values obtained in this SEM are as follows:

Table 5. Construct Reliability

Variable	Cronbach's Alpha	Composite Reliability	Information
(X) Safety Leadership	0,873	0,904	Reliable

ISSN [Online]: 2776-6365

Variable	Cronbach's Alpha	Composite Reliability	Information
(Y) Safety Compliance	0,890	0,920	
(Z1) Safety Behaviors	0,711	0,874	
(Z2) Safety Motivation	0,866	0,909	

Based on Table 5, the results of the reliability test analysis show that the composite reliability score is greater than 0.7, which means that all variables are reliable and have passed the test requirements.

4.1.2. Inner Model

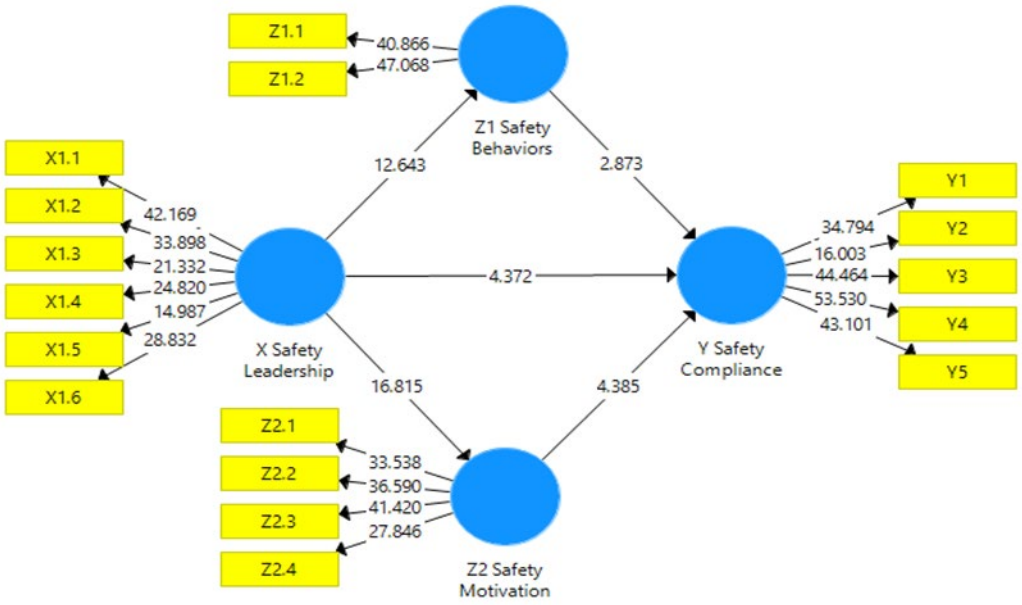

Figure 3. Inner Model

The model's feasibility test examines the R-squared value, which ranges from 0 to 1. An R-squared value of 0.75 is considered good, 0.50 is moderate, and 0.25 is considered poor. The following R-squared values are based on the SEM results, as shown in the table and figure:

Table 6. R-Square Values

Variable	R Square	Adjusted R Square
(Y) Safety Compliance	0.579	0.574
(Z1) Safety Behaviors	0.361	0.359
(Z2) Safety Motivation	0.429	0.427

From Table 6, the model's suitability can be assessed by the R-squared result for safety compliance, which is 0,579 (57,9%), the R-squared result for safety behaviors, which is 0,361 (36,1%), and the R-squared result for safety motivation, which is 0,429 (42,9%). To determine whether a relationship is significant, the p-value should be compared to the 5% error rate, as outlined in the research hypothesis testing:

Table 7. Path Coefficient SEM-PLS

ISSN [Online]: 2776-6365

Path	Original Sample	T Statistics	P-Values Values	Information
(X) Safety Leadership → (Z1) Safety Behaviors	0,601	12,643	0,000	H1 Accepted
(X) Safety Leadership → (Z2) Safety Motivation	0,655	16,815	0,000	H2 Accepted
(X) Safety Leadership → (Y) Safety Compliance	0,285	4,372	0,000	H3 Accepted
(Z1) Safety Behaviors → (Y) Safety Compliance	0,224	2,873	0,004	H4 Accepted
(Z2) Safety Motivation → (Y) Safety Compliance	0,341	4,385	0,000	H5 Accepted
(X) Safety Leadership → (Z1) Safety Behaviors → (Y) Safety Compliance	0,135	2,762	0,006	H6 Accepted
(X) Safety Leadership → (Z2) Safety Motivation → (Y) Safety Compliance	0,224	4,214	0,000	H7 Accepted

Based on Table 7, the results of the hypothesis test show the following results and conclusions:

a. Safety leadership has a positive effect of 0.601 on safety behaviors with a t-statistic value of 12.643 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety behaviors "(H1) is accepted.
b. Safety leadership has a positive effect of 0.655 on safety motivation with a t-statistic value of 16.815 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety motivation"(H2) is accepted.
c. Safety leadership has a positive effect of 0.285 on safety compliance with a t-statistic value of 4.372 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety compliance"(H3) is accepted.
d. Safety behaviors have a positive effect of 0.224 on safety compliance with a t-statistic value of 2.873 and a p-value of 0.004 < 0.05. Therefore, the hypothesis "Safety behaviors have a positive and significant effect on safety compliance"(H4) is accepted.
e. Safety motivation has a positive effect of 0.341 on safety compliance with a t-statistic value of 4.385 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety motivation has a positive and significant effect on safety compliance"(H5) is accepted.
f. Safety leadership has a positive effect of 0.135 on safety compliance mediated by safety behaviors with a t-statistic value of 4.372 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety compliance mediated by safety behaviors "(H6) is accepted.
g. Safety leadership has a positive effect of 0.224 on safety compliance mediated by safety motivation with a t-statistic value of 4.214 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety compliance mediated by safety motivation"(H7) is accepted.

4.2. Discussion

4.2.1. Safety leadership on safety behaviors

Safety leadership has a positive effect of 0.601 on safety behaviors with a t-statistic value of 12.643 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety behaviors "(H1) is accepted. Safety is a very crucial aspect in a company. A leader has an important role in distributing safety practices to all workers. Safety leadership is an active and sustainable leadership behavior prioritizes safety through various actions. The actions that can be taken are through effective communication, providing good examples, empowering employees, and ongoing suggestions (Bautista et al., 2023). Safety leadership plays an important role in shaping and influencing safety behaviors in the workplace.

ISSN [Online]: 2776-6365

Safety leadership refers to the behavior of a leader who demonstrates a commitment to work safety through effective communication, providing examples of safe behavior, and strengthening a safety culture. Leaders who are proactive in prioritizing safety can create a work environment that supports and motivates employees to prioritize safety in all their activities. Leaders who consistently apply safety leadership encourage workers to engage in safety behaviors, such as complying with established work procedures, using personal protective equipment (PPE) correctly, and reporting potential hazards in the workplace. For example, research by Atikasari et al. (2022) in the context of PT Pelindo Terminal Petikemas (SPTP) showed that effective safety leadership significantly improved safety behavior among workers.

4.2.2. Safety leadership on safety motivation

Safety leadership has a positive effect of 0.655 on safety motivation with a t-statistic value of 16.815 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety motivation"(H2) is accepted. Safety leadership plays an important role in increasing employee safety motivation. Leaders who demonstrate a commitment to occupational safety, pay attention to employee needs, and are actively involved in creating a safe work environment can encourage employees' intrinsic motivation to behave safely. This type of leadership involves providing positive feedback, recognizing safe behavior, and providing consistent employee support. This creates a sense of shared responsibility for workplace safety. Ta et al. (2022) stated that safety leadership can increase safety motivation through mediation mechanisms such as effective communication and employee empowerment. Meanwhile, research by Bautista et al. (2023) shows that strong leadership in the safety field can strengthen the safety climate and encourage employees to be more vocal in expressing suggestions or concerns about occupational safety. In addition, Lu et al. (2017) found that safety leadership is closely related to organizational citizenship behaviors that support a safety culture in the company.

4.2.3. Safety leadership on safety compliance

Safety leadership has a positive effect of 0.285 on safety compliance with a t-statistic value of 4.372 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety compliance"(H3) is accepted. According to Barbosa and Andrea (2023), safety compliance is the level of employee compliance with established work safety procedures, in this case, such as the use of PPE, following safety instructions, and complying with safe work regulations and referring back to Neal and Griffin (2006), where safety compliance is the behavior needed to maintain safety, in this case, such as following safety procedures and using PPE. The five dimensions of safety compliance include compliance with regulations and procedures, use of PPE, compliance with reporting, participation in accident prevention, and consistency in implementing safety procedures. Leaders who prioritize, support, and become role models in safety regulations, follow and always use PPE in the plant environment, and are active in implementing prevention efforts will improve the implementation of work safety for all workers. Effective safety leadership is a crucial factor in improving safety compliance. Leaders who create a work environment that values safety will encourage workers to comply with regulations consistently, reducing the risk of work accidents.

4.2.4. Safety behaviors on safety compliance

Safety behaviors have a positive effect of 0.224 on safety compliance with a t-statistic value of 2.873 and a p-value of 0.004 < 0.05. Therefore, the hypothesis "Safety behaviors have a positive and significant effect on safety compliance"(H4) is accepted. Basahel's (2021) research underlines the importance of safe behaviors in increasing compliance in the healthcare sector. They found that when workers internalize the importance of safety behaviors, they are more likely to comply with safety procedures. Neal and Griffin's (2006) study also supports this finding, confirming that safe behaviors serve as the basis for safety compliance, as these

ISSN [Online]: 2776-6365

behaviors reflect worker awareness of the importance of safety in daily work activities. Safety behaviors act as a catalyst in creating consistent safety compliance. Workers who practice safe behaviors improve personal safety and contribute to a stronger safety culture. This shows the importance of training and management support to encourage safe behaviors as a strategic effort to increase safety compliance in the workplace.

4.2.5. Safety motivation on safety compliance

Safety motivation has a positive effect of 0.341 on safety compliance with a t-statistic value of 4.385 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety motivation has a positive and significant effect on safety compliance"(H5) is accepted. This is supported by Bergman et al. (2023), who found that increased safety motivation through effective leadership can increase worker compliance with safety standards, even in stressful work environments. Furthermore, Bautista et al. (2023) revealed that safety motivation affects individual and collective workplace behavior. They showed that compliance with safety rules increases significantly when safety motivation is strengthened at the individual and team levels. This motivation triggers awareness of the importance of safety, so workers feel more responsible for following safety protocols. Safety motivation plays an important role in increasing safety compliance. This motivation can be increased through various means, such as relevant training, providing incentives, and effective communication from management. This supports the hypothesis that safety motivation positively affects safety compliance because workers motivated to maintain safety tend to be more disciplined in implementing work safety rules and procedures.

4.2.6. Safety behaviors on safety compliance mediated by safety behaviors

Safety leadership has a positive effect of 0.135 on safety compliance mediated by safety behaviors with a t-statistic value of 4.372 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety compliance mediated by safety behaviors "(H6) is accepted. Probst and Estrada (2010) added that leaders who emphasize the importance of safety not only encourage safe behavior directly but motivate workers to prioritize safety in their daily activities. This safe behavior ultimately mediates the relationship between effective leadership in safety and the level of compliance with work safety. The effectiveness of safety leadership can support safety behaviors in this case, related to compliance indicators, use of PPE, incident reporting, involvement in safety activities, initiatives in improving safety, and collaboration in accident prevention efforts. In other words, safety behaviors mediate safety leadership with worker or employee safety compliance. Safety behaviors are important mediators between safety leadership and safety compliance. This understanding provides practical implications that organizations must invest in developing leadership skills that support safety to encourage safe behavior and improve safety compliance in the workplace.

4.2.7. Safety leadership on safety compliance mediated by safety motivation

Safety leadership has a positive effect of 0.224 on safety compliance mediated by safety motivation with a t-statistic value of 4.214 and a p-value of 0.000 < 0.05. Therefore, the hypothesis "Safety leadership has a positive and significant effect on safety compliance mediated by safety motivation"(H7) is accepted. Judging from the indicators of safety leadership, including commitment to safety, employee empowerment, role models in safety, support for safety, consistency, accountability, and procedural justice. Then, the safety compliance indicators are examined, namely compliance with safety regulations and procedures, use of personal protective equipment (PPE), compliance with safety reporting, participation in safety precautions, and consistency in implementing safety procedures. So that effective safety leadership can develop employee safety compliance through the application of these indicators. However, looking also at the role of safety motivation indicators consisting of intrinsic motivation, extrinsic motivation, risk-focused motivation, and

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social motivation for safety, the influence of safety leadership can increase employee safety compliance, with safety motivation mediating. Safety motivation is important due to safety leadership and as a factor that mediates its influence on safety compliance. In the context of this study, it is important to understand that the influence of safety leadership on worker safety compliance becomes stronger when workers are highly motivated to maintain their safety. This emphasizes the need for companies to rely on strong leadership and ensure that worker safety motivation continues to be improved through training, rewards, and a work culture that supports safety.

V. Conclusion

The study results indicate that Safety Leadership positively and significantly influences Safety Compliance directly and indirectly through Safety Behaviors and Motivation. This means that proactive leadership that cares about safety can create a work culture that encourages compliance with safety procedures in the workplace. First, safety leadership is important in fostering employee safety motivation and an internal drive to prioritize workplace safety. Leaders who provide examples, support, and clear communication regarding the importance of safety will increase workers' awareness and commitment to safe work behavior. Second, increased motivation encourages the emergence of Safety Behaviors, tangible actions representing compliance with safety standards, such as using personal protective equipment and reporting hazardous conditions. With the increase in this safety behavior, the level of Safety Compliance will also increase. Thus, it can be concluded that Safety Behaviors and Safety Motivation are important mediators that bridge the influence of Safety Leadership on Safety Compliance. Organizations need to strengthen safety leadership practices to encourage employee safety motivation and behavior, which ultimately positively impacts the fulfillment of safety.

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