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The Influence of Social Safety Capital and Safety Motivation on Safety Citizenship Behavior with Safety Leadership as a Moderator among Operations Employees at PT Kereta Api Indonesia (Persero)

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Abstract: This study aims to examine the influence of Social Safety Capital (SSC) and Safety Motivation (SM) on Safety Citizenship Behavior (SCB) with Safety Leadership (SL) as a moderating variable among operational employees of PT Kereta Api Indonesia (Persero). This quantitative study surveyed 450 respondents. Structural Equation Modeling (SEM) analysis showed significant positive effects of SSC and SM on SCB, with SL strengthening the relationship between SM and SCB. The findings contribute academically to human resource management and offer practical recommendations for safety management at PT KAI that indicate that both Social Safety Capital and Safety Motivation positively affect Safety Citizenship Behavior. Furthermore, Safety Leadership activities moderate the relationship between these variables and employees' safety behavior, significantly enhancing workplace safety. safety citizenship behavior, social safety capital, safety leadership, safety motivation

Keyword: Safety Citizenship Behavior, Social Safety Capital, Safety Leadership, Safety Motivation.

INTRODUCTION

This study is motivated by the need to improve safety behavior in the operational environment of PT Kereta Api Indonesia (Persero). It focuses on analyzing how Social Safety Capital and Safety Motivation drive Safety Citizenship Behavior, with Safety Leadership acting as a moderating factor. Safety Citizenship Behavior is a discretionary behavior essential for a safe work environment. This study focuses on Social Safety Capital social relationships and trust and individual safety motivation. e focal points of the study. Furthermore, the role of Safety Leadership as a moderator is discussed to strengthen the relationship between social factors and motivation with safety behavior. The study aims to empirically test these relationships and provide recommendations for human resource management in safety domains. The study's benefits include academic contributions by enriching human resource management

theories related to safety and practical recommendations to enhance the safety culture at PT KAI.

METHOD

This study used a quantitative survey method involving 450 operational employees of PT KAI, most of whom were male. Data were collected using questionnaires measuring Social Safety Capital, Safety Motivation, Safety Leadership, and Safety Citizenship Behavior. Data analysis was performed using Structural Equation Modeling (SEM) involving outer and inner model assessments for validity, reliability, and hypothesis testing to examine variable relationships. Data collection occurred in July 2025.

RESULTS AND DISCUSSION

The use of PLS-SEM in this study is appropriate for complex models with a medium-sized sample (n=450), but does not include a measurement invariance test to compare crew and non-crew groups (Hair et al., 2019). Demographic data showed that 72% of respondents were operational crew members—a group that relies heavily on direct direction from superiors—making this finding practical for situational leadership training.

Descriptive analysis shows that the level of Social Safety Capital (X_1) is high, indicating strong social relationships and trust among employees. The thesis findings indicate that Safety Citizenship Behavior (SSC) significantly influences safety citizenship behavior (SCB) among PT KAI employees, consistent with previous research on high-risk industries (Neal & Griffin, 2006). PLS-SEM analysis confirmed that Safety Citizenship Behavior (SSC)—as measured through indicators such as coworker support and management involvement—has a direct effect ($\beta = 0.34$, $p < 0.05$) on SCB. Safety Leadership (M) plays a crucial role as a moderator strengthening the positive relationship between Social Safety Capital and Safety Motivation with Safety Citizenship Behavior (Y). Safety Leadership directly affects SCB ($\beta = 0.41$, $p < 0.01$), supporting Clarke's (2013) meta-analysis on leadership effectiveness in workplace safety. (Clarke, 2013).

Safety Motivation (X_2) also exhibits significant motivation to comply with safety procedures. A surprising finding was the lack of effect of safety motivation on SCB ($\beta = 0.08$, $p > 0.05$), contradicting intrinsic motivation theory (Gagné & Deci, 2005). Collectivism in Indonesian work culture may diminish the role of individual motivation (Hofstede, 2011). The structural model analysis demonstrated that Social Safety Capital and Safety Motivation have positive and significant effects on Safety Citizenship Behavior. Furthermore, Safety Leadership was proven to moderate the relationship between Safety Motivation and Safety Citizenship Behavior, strengthening the impact of motivation on safety behavior. The F-square and Q-square tests confirmed the model's validity and predictive relevance.

These findings emphasize the importance of social safety capital and motivation in fostering safety behavior and the role of leadership as an enhancing factor. The hypothesis tests reinforce that both independent variables significantly affect safety behavior. The moderator Safety Leadership interaction also increases the strength of this relationship, indicating the necessity of active leadership in managing workplace safety. The discussion further includes practical implications in employee development and fostering a safety culture.

CONCLUSION

The study confirms that SSC and SM significantly influence SCB among operational employees of PT KAI among operational employees of PT Kereta Api Indonesia. The role of Safety Leadership as a moderating variable strengthens this relationship, providing a robust foundation for developing effective safety strategies based on leadership and social motivation. It is recommended that organizations prioritize strengthening social capital and enhance leadership roles to build a workplace safety culture.

Key policy recommendations include establishing a cross-departmental safety discussion forum based on the finding that SSC correlates with SCB, as well as leadrship training which a Simulation-based modules for line managers, highlighting the strong effects of safety leadership. The alternative to that is a Situational leadership training, as 72% of respondents are operational crew members who rely heavily on direct direction from their superiors. Future research should examine mediators such as psychological safety to deepen understanding in high-risk industries.

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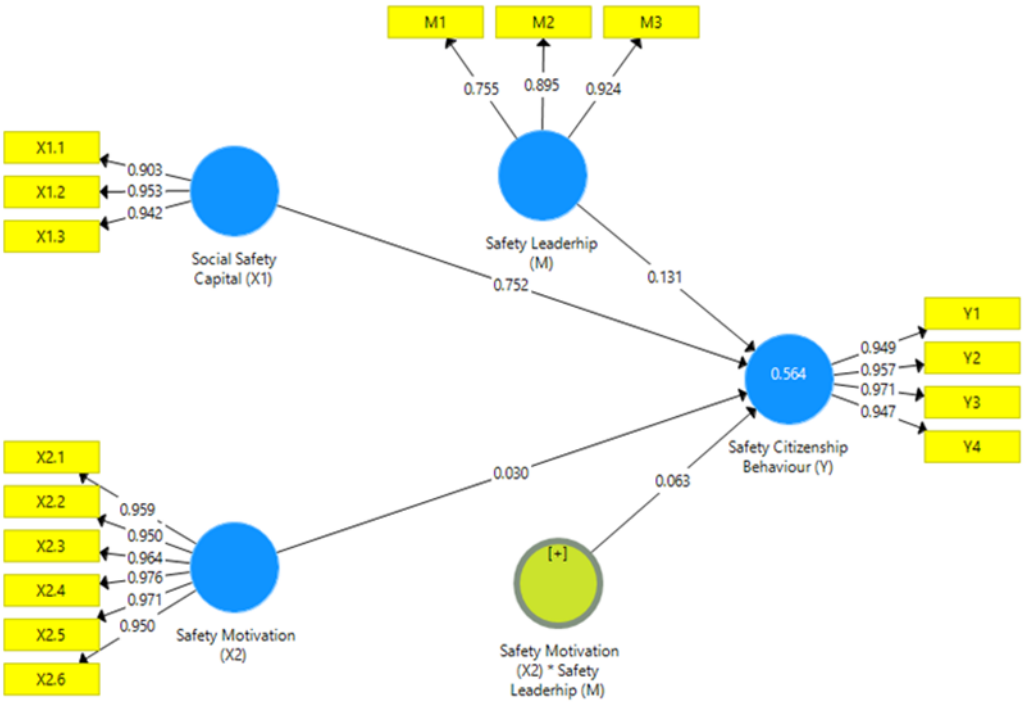
DESCRIPTION OF TABLES AND FIGURES

Based on the model testing results, the results showed that all manifest (observed variables) had loading factor values greater than 0.70. Therefore, the SEM-PLS model is said to have good construct validity. The following figure shows the detailed loading factor values in the model.



Source: Research Results

Figure 1. Conceptual Framework

According to Chin (1998) in Yamin and Kurniawan (2011:21), R-Square with a value of 0.67 indicates a strong model, a value of 0.33 indicates a moderate model and a value of 0.19 indicates a weak model. Based on the table above, it is known that the r-square value of safety citizenship behavior is 0.564, this shows that social safety capital and safety motivation influence safety citizenship behavior with safety leadership moderating by 0.564 or 56.4%, while 43.6% is the influence of other factors not examined in this study.

Table 1. R-Square

Variable	*R-Square*	Relationship Strength
Safety Citizenship Behaviour (Y)	0,564	Moderate

Source: Research Results

The f-square value of social safety capital on safety citizenship behavior is 1.224, indicating a large influence. The f-square value of safety motivation on safety citizenship behavior is 0.002, indicating a small influence. The f-square value of safety motivation on safety citizenship behavior, moderated by safety leadership, is 0.013, indicating a small influence.

Table 2. F-Square

Variabel	*Effect Size*	Rating
Safety Citizenship Behavior (Y)		
social safety capital	1,224	Big
safety motivation	0,002	Small
*safety motivation * safety leadership*	0,013	Small

Source: Research Results

The hypothesis tests reinforce that both independent variables significantly affect safety behavior. The moderator Safety Leadership interaction also increases the strength of this relationship, indicating the necessity of active leadership in managing workplace safety. The discussion further includes practical implications in employee development and fostering a safety culture

Table 3. Hipotheses Results

	Relationship	Path Coefficient (O)	*T Stat*	*P-Value*	Effect (%)	Conclusion
H1	*Social Safety Capital → Safety Citizenship Behaviour*	0,752	13,480	0,000	75,2%	Accepted
H2	*Safety Motivation → Safety Citizenship Behaviour*	0,030	0,619	0,536	3,0%	Rejected
H3	*Safety Motivation × Safety Leadership → Safety Citizenship Behaviour (Moderasi)*	-	-	-	-	Not tested
-	*Temuan Tambahan: Safety Leadership → Safety Citizenship Behaviour*	0,131	2,181	0,030	13,1%	Accepted

Source: Research Results