

INTEGRATING ORGANIZATIONAL AND INDIVIDUAL FACTORS TO EXPLAIN CITIZENSHIP BEHAVIOR IN THE FIELD OF SAFETY IN THE NICKEL MINING INDUSTRY

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Abstract

The mining industry is one of the sectors with the highest level of occupational safety risk. The high potential for work accidents causes occupational safety and health to become a priority strategy in company management. This study aims to analyze the role of organizational and individual factors in explaining Safety Citizenship Behavior among employees in the nickel mining industry by integrating Perceived Leadership Support, Emotional Intelligence, and Safety Satisfaction on Safety Citizenship Behavior into the research model. This study uses a quantitative method. Data were collected through a structured questionnaire administered to employees of PT. ABC, a nickel mining company in Southeast Sulawesi. The questionnaire consists of a measurement scale that has been validated and adapted from previous studies. The collected data will be analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with Smart PLS 3 to assess the measurement model and test the proposed structural relationships between constructs. The results show that perception, perceived leadership support, emotional intelligence, and safety satisfaction have a positive influence on safety citizenship behavior. Emotional intelligence moderates the relationship between perception, perceived leadership support and safety citizenship behavior.

Keywords: Perceived Leadership Support, Safety Satisfaction, Emotional Intelligence, safety citizenship behavior, Nickel Mining

Abstrak

Industri pertambangan merupakan salah satu sektor dengan tingkat risiko keselamatan kerja tertinggi. Tingginya potensi kecelakaan kerja menyebabkan keselamatan dan kesehatan kerja menjadi prioritas strategis dalam pengelolaan perusahaan. Penelitian ini bertujuan untuk menganalisis peran faktor organisasi dan individu dalam menjelaskan safety citizenship behavior karyawan di industri pertambangan nikel dengan mengintegrasikan perceived leadership support, safety satisfaction dan kecerdasan emosional terhadap safety citizenship behavior ke dalam model penelitian. Penelitian ini menggunakan metode kuantitatif. Data dikumpulkan melalui kuesioner terstruktur yang diberikan kepada karyawan PT. ABC, sebuah perusahaan pertambangan nikel di Sulawesi Tenggara. Kuesioner tersebut terdiri dari skala pengukuran yang telah divalidasi dan diadaptasi dari penelitian sebelumnya. Data yang dikumpulkan akan dianalisis menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM) dengan Smart PLS 3 untuk menilai model pengukuran dan menguji hubungan struktural yang diusulkan antar konstruk. Hasil penelitian menunjukkan bahwa perceived leadership support, kecerdasan emosional, dan safety satisfaction memiliki pengaruh positif terhadap safety citizenship behavior. dan kecerdasan emosional memoderasi hubungan antara perceived leadership support yang dirasakan dan safety citizenship behavior.

Kata kunci: persepsi dukungan kepemimpinan, kepuasan terhadap keselamatan, kecerdasan emosional, perilaku kewarganegaraan keselamatan, pertambangan nikel

Introduction

The mining industry is among the occupational sectors characterized by exceptionally high levels of safety risk due to complex operational processes, heavy equipment utilization, hazardous materials, and dynamic working environments (Sun et al., 2025; Wang et al., 2022). In such contexts, occupational safety and health (OSH) is not merely a regulatory obligation but a strategic organizational priority that determines operational continuity, employee well-being, and organizational sustainability. Despite advances in safety management systems, workplace accidents in mining continue to be substantially associated with human factors, including inadequate safety awareness, insufficient supervision, unsafe decision-making, and workers' inability to recognize and respond appropriately to potential hazards (Sun et al., 2025). These conditions demonstrate that effective safety management cannot rely exclusively on technical controls, standard operating procedures, and regulatory compliance. Rather, safety outcomes are also shaped by workers' behavioral willingness to actively contribute to the development and maintenance of a safe work environment.

Traditional safety management approaches have largely emphasized safety compliance, whereby employees are expected to adhere to established rules, procedures, and standards (Ning et al., 2024). Although safety compliance remains an essential component of accident prevention, compliance-oriented approaches may be insufficient for high-risk work environments in which hazards are dynamic and cannot always be anticipated through standardized procedures. Accordingly, contemporary safety research has increasingly emphasized employee behavior as a critical mechanism through which organizational safety systems become operationalized in everyday work practices (Huang et al., 2024). In this perspective, employees are not simply passive recipients of safety policies but active safety agents who can identify emerging hazards, support colleagues, communicate safety concerns, and voluntarily participate in safety improvement initiatives.

One behavioral construct that captures this proactive dimension is Safety Citizenship Behavior (SCB). SCB refers to discretionary, voluntary, and role-exceeding behaviors through which employees contribute to individual and organizational safety beyond their formally prescribed job responsibilities (Curcuruto et al., 2019; Dodoo et al., 2023; Meng et al., 2026). Such behaviors include assisting coworkers in maintaining safe work practices, providing safety-related suggestions, reporting potential hazards, participating in safety initiatives, and voluntarily supporting organizational safety programs. Unlike mandatory safety compliance, SCB reflects employees' discretionary contributions to the collective safety climate and therefore represents an important behavioral resource for sustaining safety in high-risk industries. This distinction is particularly relevant in mining because workers frequently encounter changing operational conditions in which proactive safety actions may prevent incidents before they escalate. Nevertheless, compared with

research on unsafe behavior, safety compliance, safety participation, and safety performance, empirical research specifically addressing SCB in mining remains comparatively limited (Adra et al., 2026; Qin & Li, 2026; Qu et al., 2025; Zhang et al., 2022).

The emergence of SCB is unlikely to be explained by a single organizational or individual determinant. Rather, it can be conceptualized as the product of an interaction between the social-organizational environment in which employees work and their individual psychological resources for responding to safety demands. From an organizational perspective, Perceived Leadership Support (PLS) represents a potentially important antecedent of SCB because it reflects employees' perceptions that leaders genuinely care about their safety, well-being, and working conditions. Social Exchange Theory provides a relevant theoretical explanation for this relationship. When leaders demonstrate concern, provide assistance, communicate safety expectations, and allocate resources to protect employees, workers may perceive the relationship as supportive and reciprocate through positive discretionary behaviors that benefit the organization (Addo & Dartey-Baah, 2020; Quansah et al., 2021). Supportive leadership may therefore foster psychological ownership, engagement, trust, and shared responsibility for workplace safety, creating conditions in which employees are more willing to engage in SCB (Mohammed et al., 2026; Pilar et al., 2021). Conversely, insufficient leadership support may weaken employees' willingness to invest additional discretionary effort in safety-related activities (Kadher et al., 2024; Quansah et al., 2021).

In addition to leadership support, Safety Satisfaction constitutes another organizational factor that may shape employees' willingness to engage in voluntary safety behavior. Safety Satisfaction represents employees' positive evaluations of the organization's safety policies, training, communication, protective equipment, safety procedures, and demonstrated commitment to worker protection. When employees perceive that the safety system is reliable, responsive, adequately resourced, and genuinely concerned with their welfare, they may develop more positive attitudes toward organizational safety and become more willing to contribute beyond formal requirements (Milosevic et al., 2025). Thus, safety satisfaction may constitute an important psychological pathway through which organizational safety systems are translated into discretionary safety behavior. However, existing research has not sufficiently clarified whether satisfaction with the safety system operates independently of leadership support or whether both organizational factors jointly contribute to the emergence of SCB.

The organizational context alone, however, may not adequately explain why employees exposed to similar leadership and safety systems demonstrate different levels of proactive safety behavior. Individual psychological characteristics may influence how employees interpret, regulate, and respond to safety-related demands. One particularly relevant individual factor is Emotional Intelligence (EI), defined as the capacity to recognize, understand, regulate, and effectively utilize

emotional information in interpersonal and work-related situations (Huc et al., 2025). Emotional intelligence may be particularly important in mining environments because workers operate under conditions involving time pressure, physical hazards, interpersonal coordination, fatigue, and potentially stressful operational demands. Employees with stronger emotional regulation capabilities may be better able to manage stress, maintain attention, regulate impulsive responses, communicate effectively, and make safety-oriented decisions under pressure. Previous research suggests that higher emotional intelligence may reduce cognitive and emotional lapses associated with unsafe outcomes (Moserle et al., 2024), while emerging evidence also identifies EI as a potential determinant of organizational citizenship behavior (Al-madadha & Al-adwan, 2025).

Despite these theoretical arguments, the role of EI in explaining Safety Citizenship Behavior remains insufficiently developed. Existing research has frequently examined emotional intelligence in relation to general organizational citizenship, psychological well-being, or work performance, while its specific contribution to discretionary safety behavior remains comparatively underexplored (Al-madadha & Al-adwan, 2025; Huang et al., 2024; Moserle et al., 2024). This represents an important theoretical issue because SCB is inherently social and discretionary: employees must not only understand safety requirements but also regulate their emotions, interpret social cues, communicate concerns, and voluntarily intervene when safety risks emerge. EI may therefore provide an individual-level mechanism that helps explain why employees respond differently to the same organizational safety environment.

Taken together, the literature reveals three interconnected research gaps. First, the empirical literature on safety behavior in mining remains disproportionately focused on unsafe behavior, safety compliance, safety participation, and safety performance, while SCB has received comparatively less attention despite its relevance to proactive safety management (Adra et al., 2026; Qin & Li, 2026; Qu et al., 2025; Zhang et al., 2022). Second, previous studies have generally examined organizational determinants such as leadership support and safety satisfaction, and individual determinants such as emotional intelligence, as relatively separate explanatory factors. This fragmented approach provides limited insight into how organizational conditions and individual psychological resources jointly shape discretionary safety behavior. Third, although leadership is widely recognized as an important predictor of employee safety behavior, the psychological mechanisms explaining why supportive leadership translates into voluntary safety contributions remain insufficiently understood (Bui et al., 2026). In particular, the potential role of EI in explaining employees' differential responses to leadership support and safety-system conditions requires further investigation.

Against these gaps, the novelty of this study lies in the integration of organizational and individual explanatory perspectives within a single conceptual model of Safety Citizenship Behavior in the nickel mining industry. Rather than treating leadership support, safety satisfaction, and

emotional intelligence as isolated predictors, this study brings them together to examine SCB as a multidimensional behavioral outcome emerging from the interaction between employees' organizational environment and individual psychological capacity. Specifically, Perceived Leadership Support and Safety Satisfaction represent organizational-level conditions, whereas Emotional Intelligence represents an individual-level psychological resource. This integration provides a more comprehensive framework for understanding why employees voluntarily engage in safety-enhancing behaviors beyond formal compliance.

More specifically, this study advances the existing literature in three ways. First, it extends safety behavior research by shifting analytical attention from compliance-based behavior toward Safety Citizenship Behavior as a proactive and discretionary form of employee safety contribution, particularly within the underexplored context of nickel mining. Second, it bridges organizational and individual perspectives by simultaneously incorporating leadership support, satisfaction with the safety system, and emotional intelligence into one explanatory framework. This approach responds directly to the limitation of fragmented models that examine organizational and individual antecedents separately. Third, the study introduces a theoretically meaningful explanation of how the organizational safety environment and employees' emotional capabilities may jointly contribute to proactive safety behavior, thereby moving beyond a simple direct-effect model of leadership and safety behavior.

The novelty is particularly relevant to the nickel mining industry, where operational hazards are complex, safety decisions are often time-sensitive, and effective risk management requires active cooperation among workers rather than mere procedural compliance. In this setting, supportive leadership may create the organizational conditions necessary for proactive safety participation, safety satisfaction may strengthen employees' positive orientation toward the organizational safety system, and emotional intelligence may provide the psychological capacity necessary to translate these favorable conditions into discretionary safety actions. Accordingly, SCB is conceptualized not simply as an individual behavioral outcome but as an emergent safety resource shaped by the convergence of organizational support, safety-system evaluation, and emotional capability.

This integrated perspective also contributes to Social Exchange Theory by extending the conventional reciprocity argument. Rather than assuming that organizational support automatically produces positive employee behavior, the proposed framework recognizes that employees' individual emotional capabilities may influence how organizational support is interpreted and translated into voluntary safety contributions. In other words, supportive leadership and a satisfactory safety system may establish the social and organizational conditions for reciprocity, while emotional intelligence may help employees regulate the emotional and interpersonal processes required to enact that reciprocity through proactive safety behavior. This theoretical positioning provides a stronger

explanation of why the same organizational safety conditions may generate different behavioral responses among employees.

Accordingly, this study proposes a novel integrated model in which Perceived Leadership Support, Safety Satisfaction, and Emotional Intelligence jointly explain Safety Citizenship Behavior among employees in the nickel mining industry. The model is intended to provide both theoretical and practical contributions. Theoretically, it expands the safety behavior literature by connecting social-organizational conditions with individual emotional resources in explaining discretionary safety behavior. Practically, it can inform nickel mining companies in developing leadership strategies, strengthening employee safety satisfaction, investing in emotional competency development, and designing safety management systems that encourage employees to move beyond minimum compliance toward proactive safety citizenship.

Therefore, this study aims to analyze the role of organizational and individual factors in explaining Safety Citizenship Behavior among employees in the nickel mining industry by integrating Perceived Leadership Support, Safety Satisfaction, and Emotional Intelligence into a unified research model. By examining these variables simultaneously, the study seeks to provide a more comprehensive explanation of the mechanisms underlying proactive safety behavior and to contribute empirical evidence for developing a sustainable safety culture in high-risk mining environments.

Research Method

This study employs a quantitative approach with an explanatory research design to analyze the causal relationships among the research variables: perceived leadership support, safety satisfaction, emotional intelligence, and safety citizenship behavior. A quantitative approach was chosen because this study aims to test hypotheses and empirically explain the direct, mediating, and moderating effects among the variables through statistical analysis. The population in this study consists of all employees working at PT. ABC, a nickel mining company in Southeast Sulawesi. The nickel mining industry was selected as the research setting because it is one of the occupations with a high risk of workplace accidents; thus, employee safety behavior is a crucial factor in supporting the company's operational sustainability and minimizing the potential for workplace accidents.

The population in this study consists of all 154 company employees. This study used a census or total sampling technique because all members of the population were included as research respondents. The census method was used because the population size was relatively small, allowing the researcher to obtain comprehensive data. Data collection was conducted by distributing questionnaires to the entire population. Of the total 154 questionnaires distributed, 123 were successfully returned and deemed valid for processing, resulting in a response rate of 80%. Consequently, the research analysis was based on 123 respondents.

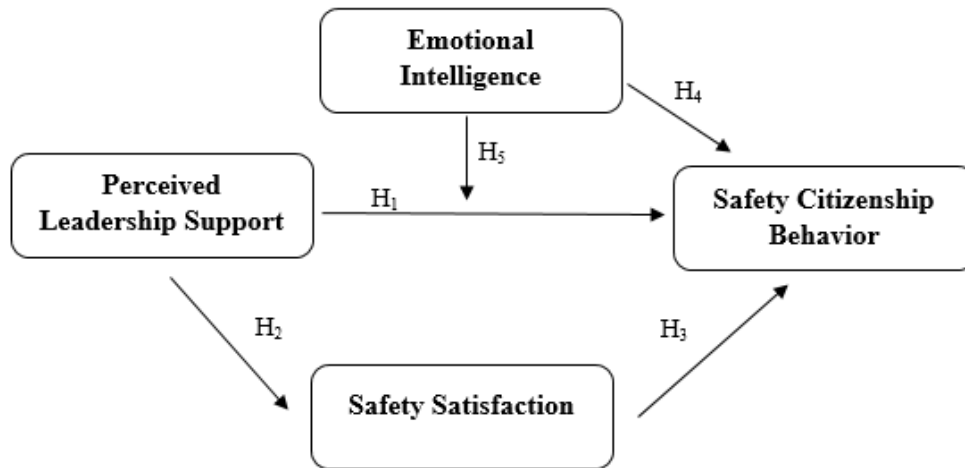
Table 1. Demographic of Respondents

	CATEGORY	Frequency	Percentage
GENDER	Male	104	84.55
	Female	19	15.45
EMPLOYEE STATUS	Permanent	42	34.15
	Contract	81	65.85
AGE	21-30 Years	58	47.15
	31- 40 Years	53	43.09
	> 41 Years	12	9.76
EDUCATION	Junior High School	11	8.94
	High School	55	44.72
	DIII	4	3.25
	S1	53	43.09
WORK EXPERIENCE POSITION	< 1 Year	13	10.57
	2-5 Years	110	89.43
	Foreman	22	17.89
	Staff	43	34.96
	Helper	51	41.46
	Supervisor	7	5.69

Scale statements were prepared according to a 5-point Likert scale. Scale options are Strongly Disagree (1) and Strongly Agree (5). A group of 5 experts was consulted to test the clarity of the statements and to determine the understandable structure of the questions. The scale, consisting of 3 variables, which was created by a literature review, was sent to the participants. This scale consists of Perceived Leadership Support (PLS), Safety satisfaction (SS), Emotional Intelligence (EI) and Safety Citizenship Behavior (SCB) variables. The Perceived Leadership Support Scale was developed by (Kadher et al., 2024) with 5 items. The Emotional Intelligence scale was developed by (Alsulami et al., 2023).with 5 items. The safety satisfaction scale was developed by (Milosevic et al., 2025) with 4 items, and the Safety Citizenship Behavior (SCB) variable scale was developed by (Hofmann et al., 2003) with 6 items.

This study used the partial least squares-structural equation model (PLS-SEM) to test the study hypotheses. We used PLS-SEM to avoid distributional assumptions and model complexity due to this study's prediction-oriented and exploratory nature (Hair et al., 2021; Sarstedt et al., 2021). This approach comprises two phases: the evaluation of the measures and the structural model. The PLS-SEM provides an analytical technique for assessing the model's direct, mediation, and moderation relationships (Franke & Sarstedt, 2019; Sarstedt et al., 2021).

Figure 1. Conceptual Framework



Results and Discussions

Measurement Model

Before conducting hypothesis testing, the measurement model was first assessed to establish validity and reliability. Convergent validity measures the extent to which an item correlates with other items within the same construct (Hair et al., 2021). According to Hair et al. (2021), factor loadings and average variance extracted (AVE) must be determined to measure convergent validity. Factor loading thresholds were examined to determine item reliability. Most items had loadings above the acceptable threshold of 0.70 (see Table 2). Furthermore, the average variance extracted (AVE) values also met the recommended criteria of 0.50 or higher (Hair et al., 2021), with values ranging from 0.650 to 0.804. This indicates adequate convergent validity, meaning that the items explaining each latent construct have sufficient variance.

Table 2. Measurement Model

VARIABLE	INDICATOR	OUTER LOADINGS	CRONBACH'S ALPHA	COMPOSITE RELIABILITY	AVE
PERCEIVED LEADERSHIP SUPPORT	PLS1	0,809	0,857	0,895	0,632
	PLS2	0,826			
	PLS3	0,729			
	PLS4	0,877			
	PLS5	0,725			
SAFETY SATISFACTION	SS1	0,868	0,918	0,942	0,804
	SS2	0,920			
	SS3	0,927			
	SS4	0,869			
EMOTIONAL INTELLIGENCE	EI	0,767	0,899	0,926	0,714
	E2	0,852			
	E3	0,866			
	E4	0,886			
	E5	0,850			
SAFETY CITIZENSHIP BEHAVIOR	SCB1	0,867	0,891	0,917	0,650
	SCB2	0,701			
	SCB3	0,854			
	SCB4	0,761			

	SCB5	0,880	
	SCB6	0,759	

The results in Table 2 indicate that all constructs meet the recommended reliability threshold. Cronbach's Alpha values ranged from 0.857 to 0.918, while Composite Reliability (CR) values ranged from 0.895 to 0.942. These values exceed the generally accepted threshold of 0.70 (Hair et al., 2021), confirming that the measurement items consistently capture their respective constructs.

Discriminant validity was assessed using the HTMT. Following established guidelines, an HTMT value below 0.90 indicates acceptable discriminant validity in variance-based SEM.

Table 3. Heterotrait-Monotrait Ratio (HTMT)

	PERCEIVED LEADERSHIP SUPPORT	SAFETY SATISFACTION	EMOTIONAL INTELLIGENCE
PERCEIVED LEADERSHIP SUPPORT			
SAFETY SATISFACTION	0,867		
EMOTIONAL INTELLIGENCE	0,661	0,346	
SAFETY CITIZENSHIP BEHAVIOR	0,767	0,659	0,656

Structural Model Assessment

Hypothesis testing was conducted using the bootstrapping method in SmartPLS. The significance of the relationships in the structural model was examined by analyzing path coefficients and T-statistics, as recommended by Hair et al. (2021). The results of the structural equation model estimation in Table 3, considering a 5% significance level, show that all path coefficients associated with the variables in the structural model are significant ($p \leq 0.05$). This finding indicates that our six hypotheses are accepted.

Table 4. Nilai Path Coefficient

	ORIGINAL SAMPLE	T STATISTICS (O/STDV)	P- VALUES	CONCLUSION
PERCEIVED LEADERSHIP SUPPORT - > SAFETY CITIZENSHIP BEHAVIOR	0,268	2,285	0,023	Accepted
PERCEIVED LEADERSHIP SUPPORT - > SAFETY SATISFACTION	0,817	19,578	0,000	Accepted

SAFETY SATISFACTION - > SAFETY CITIZENSHIP BEHAVIOR	0,273	3,204	0,001	Accepted
EMOTIONAL INTELLIGENCE - > SAFETY CITIZENSHIP BEHAVIOR	0,300	3,565	0,000	Accepted
EMOTIONAL INTELLIGENCE X PERCEIVED LEADERSHIP SUPPORT - > SAFETY CITIZENSHIP BEHAVIOR	0,149	2,304	0,022	Accepted

The findings indicate that perceived leadership support has a positive and significant influence on safety citizenship behavior. This is evidenced by a P-value of 0.023, which is less than 0.05, and a T-statistic of 2.285, which is greater than 1.96. Therefore, hypothesis H1 is accepted, meaning that the higher the perceived support from the leader, the higher the employee's safety citizenship behavior. The results of the H2 hypothesis test indicate that perceived leadership support has a positive and significant influence on safety satisfaction. This is evidenced by a P-value of 0.000, which is less than 0.05, and a T-statistic of 19.578, which is greater than 1.96. Therefore, hypothesis H2 is accepted, meaning that the higher the perceived support from the leader, the higher the employee's level of satisfaction with safety aspects.

The results of the H3 hypothesis test indicate that safety satisfaction has a positive and significant influence on safety citizenship behavior. This is indicated by the P-Value of 0.001, which is smaller than 0.05, and the t-statistics value of 3.204, which is greater than 1.96. Thus, the hypothesis H3 is accepted, which means that the higher the level of satisfaction with the work safety aspect, the higher the employee's safety citizenship behavior.

The results of the H4 hypothesis test indicate that emotional intelligence has a positive and significant influence on safety citizenship behavior. This is evidenced by the P-value of 0.000, which is smaller than 0.05, and the t-statistic value of 3.565, which is greater than 1.96. Thus, the H4 hypothesis is accepted, which means the higher the employee's emotional intelligence, the higher the safety citizenship behavior shown in the work environment. The H5 hypothesis proposes the idea that Emotional Intelligence acts as a moderating factor in the relationship between perceived leadership support and safety citizenship behavior. The results of our study provide empirical support for Hypothesis 6, as indicated by the P-value of 0.022, which is below 0.05, and the t-statistic value of 2.304, which exceeds 1.96. Thus, the H5 hypothesis is accepted, which means emotional intelligence strengthens the relationship between perceived leadership support and safety citizenship behavior.

The higher the employee's emotional intelligence, the stronger the influence of perceived leadership support on safety citizenship behavior.

Table 5. R Square (R^2) Value

	R SQUARE	R SQUARE ADJUSTED
SAFETY SATISFACTION	0,668	0,665
SAFETY CITIZENSHIP BEHAVIOR	0,555	0,541

The adjusted R-squared and R-squared values shown in Table 4 illustrate the extent to which the exogenous variables in this model can explain the endogenous variable. Based on the interpretation by Hair et al. (2021), R-squared values are categorized as substantial (≥ 0.75), moderate (0.50–0.74), weak (0.25–0.49), and very weak (< 0.25). The analysis results show that Safety Citizenship Behavior has an R^2 value of 0.555, indicating that the exogenous variables in this model can significantly explain this variable and are categorized as moderate.

Discussion

This study aims to analyze the role of organizational and individual factors in explaining Safety Citizenship Behavior among employees in the nickel mining industry by integrating Perceived Leadership Support, Emotional Intelligence, and Safety Satisfaction into the research model. The overall results of the statistical analysis support the hypotheses regarding the direct effects of Perceived Leadership Support, Safety Satisfaction, and Emotional Intelligence on Safety Citizenship Behavior. Emotional Intelligence also has a moderating effect on the relationship between Perceived Leadership Support and Safety Citizenship Behavior. These results provide a deeper understanding of the roles of Perceived Leadership Support, Safety Satisfaction, and Emotional Intelligence in shaping safety citizenship behavior in high-risk work environments.

The research findings indicate that Perceived Leadership Support has a positive and significant effect on Safety Citizenship Behavior among employees of a nickel mining company. These findings indicate that the higher the support employees perceive from their leaders, the greater their tendency to exhibit voluntary safety behaviors that go beyond formal job requirements. This support is reflected through concern for employee well-being, effective safety communication, feedback, and leadership commitment to creating a safe work environment. This aligns with the findings of Yang et al. (2026) that organizational factors, such as leadership, play a significant role in influencing safety behavior. These findings are also consistent with Blau's (1964) Social Exchange Theory (SET), which emphasizes that the relationship between individuals and organizations is built on the principle of reciprocity. When employees feel that the organization, through its leaders, cares about their safety, they are motivated to reciprocate this treatment through positive behaviors that support the organization's goals (Kadher et al., 2024; Ratcharak, 2025). As explained by Quansah et al. (2021),

safety citizenship behavior is highly dependent on the exchange that occurs between employees and their supervisors or managers, who act as the organization's primary representatives.

The results of this study indicate that Perceived Leadership Support has a positive influence on Safety Satisfaction. These findings suggest that the support provided by leaders is a key determinant in shaping employees' positive perceptions of and satisfaction with the organization's safety system. This is because Perceived Leadership Support reflects employees' perceptions of the extent to which leaders demonstrate concern, support, and commitment to their well-being and safety in the workplace (Kadher et al., 2024). When leaders consistently demonstrate concern for safety through open communication, the provision of adequate safety resources, constructive feedback, and recognition of safe work behaviors, employees develop the perception that the organization has a strong commitment to worker protection. Thus, the higher the level of Perceived Leadership Support experienced by employees, the higher their level of Safety Satisfaction. Employees with high levels of Safety Satisfaction tend to exhibit positive attitudes toward the organization's safety system (Bennouna et al., 2025; Cheah et al., 2012).

The results of this study also found that Safety Satisfaction positively influences Safety Citizenship Behavior. This finding reinforces the view that safety behavior is influenced not only by the existence of a safety system but also by how workers evaluate the quality of that system. When workers have positive experiences with the organization's safety practices, they are more motivated to contribute beyond their formal obligations. These results are consistent with the findings of Milosevic et al. (2025), which show that satisfaction with workplace safety contributes to an increase in various forms of positive work behavior, including safety citizenship behavior (Meng et al., 2026).

The study results indicate that Emotional Intelligence has a positive effect on Safety Citizenship Behavior. These findings suggest that workers who are able to recognize, understand, and control their emotions are better able to maintain safety behaviors even under high work pressure. The ability to manage emotions helps workers reduce impulsive behavior, improve decision-making skills, and strengthen the interpersonal relationships necessary to maintain team safety. In the nickel mining industry, workers face various pressures stemming from production targets, environmental conditions, and potential operational hazards. Therefore, emotional intelligence is an individual resource that enables workers to consistently demonstrate safety-oriented behavior. This aligns with the statement by Samu et al. (2025): emotional intelligence is the ability to recognize, understand, regulate, and manage emotions in oneself and others. Furthermore, emotional intelligence is a critical factor in understanding how individuals process, interpret, and respond to various forms of risk, particularly in high-risk environments where decision-making can have far-reaching consequences (Samu et al., 2025). These findings are also consistent with previous research showing that emotional

intelligence (EI) is a key driver of organizational citizenship behavior (OCB), which enhances organizational effectiveness (Al-madadha & Al-adwan, 2025).

This study also shows that emotional intelligence strengthens the influence of perceived leadership support on safety-related organizational citizenship behavior. These results indicate that the positive influence of leadership support on voluntary safety behavior is stronger among workers with high levels of emotional intelligence. Conversely, workers with low emotional intelligence tend to be less able to maximize the benefits of the support provided by leaders. These findings align with what Biswas (2025) stated: leaders are no longer viewed merely as decision-makers; they are the architects of the emotional climate in which employees work. Furthermore, leaders' relational consistency and emotional availability are crucial factors in shaping the quality of effective work interactions. Leaders who are approachable, empathetic, and responsive to individual concerns have been shown to create a sense of psychological safety for employees, thereby fostering more open, mutually supportive, and trusting work relationships (Konecna et al., 2026). Emotional intelligence is a form of relational intelligence because it is the skill required to guide employees in making the right decisions.

There is a strong relationship between high emotional intelligence and effective leadership, which influences an organization's ability to promote organizational citizenship behavior (Putri, 2025; Santa et al., 2023). These findings indicate an interaction between organizational and individual factors in shaping Safety Citizenship Behavior. Leadership support does indeed create a conducive environment, but its effectiveness depends on individuals' ability to manage emotions, understand safety messages, and respond adaptively to work-related stress. Thus, emotional intelligence serves as a psychological resource that strengthens leadership effectiveness in fostering proactive safety behavior. Overall, this study demonstrates that Safety Citizenship Behavior is the result of the interaction between organizational and individual factors. Perceived Leadership Support and Safety Satisfaction represent organizational factors that create a positive safety environment, while Emotional Intelligence represents an individual resource that enables workers to respond effectively to that environment. The integration of these three variables provides a more comprehensive understanding of the mechanisms that shape voluntary safety behavior in the nickel mining industry and expands the literature on safety behavior in high-risk industries. From a practical perspective, mining companies need to develop supportive leadership, improve the quality of safety systems, and strengthen workers' emotional competencies as an integrated strategy for building a sustainable safety culture.

Conclusion

The results indicate that Perceived Leadership Support is an important antecedent of Safety Citizenship Behavior, highlighting that supportive leadership practices encourage employees to

voluntarily engage in safety-related activities beyond their formal job requirements. Furthermore, Safety Satisfaction was found to play a significant role in promoting Safety Citizenship Behavior, indicating that employees who perceive organizational policies, practices, and commitments positively are more likely to exhibit proactive safety behavior. The findings also confirm the important contribution of Emotional Intelligence in shaping Safety Citizenship Behavior, indicating that employees with stronger emotional capabilities are better able to manage workplace stress and respond constructively to safety demands. Furthermore, this study reveals the moderating role of Emotional Intelligence, suggesting that individual emotional capabilities can strengthen the influence of leadership support on Safety Citizenship Behavior.

Despite providing important theoretical and practical implications, this study has several limitations. First, it used a cross-sectional design, which limits the ability to establish causal relationships between variables. Although the proposed model explains the relationships between leadership support, safety satisfaction, emotional intelligence, and safety citizenship behavior, changes in employee perceptions and behaviors over time cannot be fully captured. Second, this study relies on self-reported questionnaire data, which may introduce potential common method bias and social desirability bias, especially since safety-related behaviors are sensitive issues in organizational contexts. Employees may provide responses that reflect organizational expectations rather than their actual safety behaviors. Third, this study focuses specifically on employees in a nickel mining company, which may limit the generalizability of the findings to other industries with different operational characteristics and safety challenges.

Future research should consider using a longitudinal research design to examine how changes in leadership practices, safety perceptions, and individual psychological resources influence Safety Citizenship Behavior over time. A longitudinal approach would provide stronger evidence regarding the causal relationships and development of safety behavior within organizations. Further studies could also expand the research context to include various sectors, such as oil and gas, construction, manufacturing, and other high-risk industries, to examine whether the proposed model remains consistent across different work environments. Furthermore, future research could explore additional variables that may influence Safety Citizenship Behavior, including safety climate, psychological safety, safety motivation, work engagement, organizational commitment, and safety culture. Examining these factors could provide a more comprehensive understanding of how the organizational environment and individual characteristics interact to foster sustainable safety behavior.

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