EXPLORING THE ROLE OF SAFETY INCENTIVE PROGRAMS IN STRENGTHENING SAFETY CULTURE: A CASE STUDY OF PT PLN

[1]MAARIFAH DAHLAN, [2]AMRAN RAZAK, [3]YAHYA THAMRIN, [4]SYAMSIAR S. RUSSENG, [5]AGUS BINTARA BIRAWIDA, [6]ANWAR MALLONGI

[1] DOCTORAL PROGRAM, FACULTY OF PUBLIC HEALTH, HASANUDDIN UNIVERSITY – INDONESIA
[2] DEPARTMENT OF HEALTH ADMINISTRATION AND POLICY, HASANUDDIN UNIVERSITY, INDONESIA
[3] DEPARTMENT OF OCCUPATIONAL HEALTH AND SAFETY, FACULTY OF PUBLIC HEALTH, HASANUDDIN UNIVERSITY, INDONESIA
[4] DEPARTMENT OF ENVIRONMENTAL HEALTH, FACULTY OF PUBLIC HEALTH, HASANUDDIN UNIVERSITY, INDONESIA
[5] AL ASYARIAH MANDAR UNIVERSITY, POLEWALI MANDAR, WEST SULAWESI, INDONESIA
[6] DEPARTMENT OF ENVIRONMENTAL HEALTH, FACULTY OF PUBLIC HEALTH, HASANUDDIN UNIVERSITY, INDONESIA

Abstrak

Background: Safety incentive (SI) programs are increasingly adopted as strategic mechanisms to promote safe work behavior and embed a positive safety culture, especially in high-risk sectors such as the energy industry. Despite their importance, empirical insights into how SI programs are implemented and perceived within Indonesia's state-owned enterprises remain scarce. PT PLN (Persero), as the national electricity company, provides an ideal context to explore this issue due to its wide operational coverage and high safety standards.

Objective: This study aims to explore the role of safety incentive programs in strengthening safety culture within PT PLN by examining how such programs are understood, implemented, and evaluated by occupational safety experts (Ahli K3) across different regional units.

Methods: A qualitative case study design was employed. Data were collected through in-depth interviews with four safety experts from UP3 Sinjai, Bantaeng, Bulukumba, and Jeneponto. Thematic analysis was conducted using NVivo software to identify major themes, including policy context, implementation practices, motivational impact, and program evaluation.

Results: Findings reveal that safety incentive initiatives at PT PLN are not yet formalized as a distinct policy but are embedded within broader occupational safety and health (K3) programs. Recognition typically takes non-monetary forms—such as plaques, certificates, or appreciation events—linked to performance, compliance, and participation. Safety incentives act as both motivational and educational tools, encouraging proactive engagement and reinforcing collective safety responsibility. However, challenges persist in systematic evaluation, documentation, and ensuring long-term policy integration.

Conclusions: Safety incentive programs at PT PLN contribute significantly to cultivating a safety-oriented culture, primarily through intrinsic motivation and social recognition rather than material rewards. Strengthening formal policy frameworks, defining measurable success indicators, and enhancing documentation systems are recommended to optimize the long-term impact of SI initiatives.

Keywords: safety incentive; safety culture; qualitative research; occupational safety; PT PLN Indonesia

INTRODUCTION

Occupational safety remains a critical component of organizational sustainability, particularly in high-risk industries such as energy, construction, and manufacturing (1,2). Within this context, *safety incentive* (SI) programs have been recognized as strategic tools to motivate workers, reinforce safe behaviors, and reduce accident rates (3–5). These programs aim to create positive reinforcement mechanisms that encourage compliance and participation in safety activities. Previous studies have demonstrated that incentive-based approaches can enhance safety performance when

aligned with organizational safety culture and management. However, the success of such programs largely depends on contextual factors such as organizational commitment, management support, and worker engagement (6–8).

Safety culture is widely acknowledged as the foundation for sustainable safety performance. It encompasses the shared values, beliefs, and practices that shape safety-related behavior across all levels of an organization (9,10). Within this framework, safety incentives are not merely reward mechanisms but behavioral interventions that reinforce learning, accountability, and ownership of safety outcomes. In practice, integrating safety incentives with cultural transformation can encourage proactive participation and mutual responsibility among workers (11,12). Yet, despite extensive research in industrialized settings, limited attention has been given to how SI programs operate in developing-country contexts, where informal norms, limited resources, and hierarchical structures may influence their effectiveness (13,14).

In developing economies, the implementation of safety incentive programs faces unique challenges, including inconsistent policy frameworks, limited monitoring systems, and varying levels of worker awareness. State-owned enterprises (SOEs), such as those in the energy sector, often operate under complex bureaucratic systems that can hinder adaptive and participatory safety management (15). In Indonesia, PT PLN (Persero)—the national electricity company—manages thousands of employees across dispersed operational units with diverse occupational risks (16). Although the company maintains an established Occupational Health and Safety (K3) framework, the specific role of safety incentives within its safety culture remains underexplored, both academically and in practice (17,18).

Previous studies on safety incentives have primarily focused on quantitative evaluations of performance metrics, such as incident rates or productivity improvements. Few have examined the *perceptual and cultural dimensions* of how safety incentives are interpreted and internalized by employees and safety professionals (14). Moreover, most existing research originates from Western contexts, with minimal empirical attention to Southeast Asia, particularly within state-owned or public-sector environments (19). This creates a significant knowledge gap regarding how safety incentives contribute to cultural change and intrinsic motivation within organizational systems that prioritize compliance over engagement. There is also a lack of qualitative evidence that captures local perspectives on the design, implementation, and perceived impact of SI initiatives (20,21).

To address these gaps, this study explores how safety incentive programs function as instruments for strengthening safety culture in PT PLN. By employing a qualitative case study design, it captures the experiences and interpretations of *Ahli K3* (occupational safety experts) from four regional units—Sinjai, Bantaeng, Bulukumba, and Jeneponto. The study investigates key themes including policy understanding, implementation practices, motivational mechanisms, stakeholder involvement, and program effectiveness. Through this lens, it seeks to understand how non-monetary rewards, recognition, and intrinsic motivators shape employee participation and reinforce organizational safety values. The novelty of this research lies in its focus on the *cultural and behavioral roles* of safety incentives within a state-owned enterprise in a developing country. Unlike previous studies emphasizing financial or quantitative performance outcomes, this study reveals how SI programs act as *cultural reinforcements*—embedding shared responsibility, recognition, and motivation into daily work practices. The findings contribute to advancing theoretical discussions on *behavior-based safety* and *non-monetary motivation* while offering practical implications for integrating SI into broader safety management systems. By situating the analysis within PT PLN, this research provides valuable insights into how safety incentives can evolve from mere compliance mechanisms into sustainable drivers of safety culture transformation in public-sector organizations.

METHOD

Research Design
This study employed a qualitative case study design to explore the role of safety incentive programs in strengthening safety culture within PT PLN. This approach was selected because it enables in-depth and contextual understanding of organizational practices and lived experiences of key actors involved in safety management. The study emphasizes interpretive meaning-making rather than generalization, allowing for nuanced insights into motivational and cultural dynamics of safety programs.

Research Setting and Context
The study was conducted across four regional operational units of PT PLN, namely the Sinjai, Bantaeng, Bulukumba, and Jeneponto Customer Service Implementation Units (UP3). These sites were selected to represent variations in operational conditions, workforce characteristics, and safety management practices within the organizational framework of a national electricity provider

Participants
The participants consisted of four certified Occupational Safety and Health (OSH) Experts (Ahli K3) assigned to each UP3 unit. Participants were selected through purposive sampling based on the following criteria:
1. Holding an active OSH Expert certification.

2. Direct involvement in the planning and implementation of safety and health programs.
3. A minimum of three years of professional experience in operational safety management.

The sample size was determined using the principle of information power, whereby data collection continues until informational depth, thematic clarity, and conceptual saturation are achieved.

Data Collection

Data were collected using multiple qualitative techniques:

1. Semi-structured in-depth interviews (45–75 minutes), guided by an interview protocol informed by safety culture and behavioral safety frameworks.
2. Document review, including internal safety reports, Standard Operating Procedures (SOPs), incident records, and recognition or appreciation archives.
3. Field memos and reflective notes to capture contextual nuances and researcher interpretation during engagement.

Sample guiding interview questions included:

1. How are safety incentives designed and delivered within your unit?
2. What specific safety-related values and behaviors are expected to be reinforced through these incentives?
3. What challenges are encountered in sustaining the effectiveness of the program?

Data Analysis

Data were analyzed using Thematic Analysis following the six-stage procedure proposed (22):

1. Familiarization with the data (transcription and iterative reading).
2. Generating initial codes.
3. Collating codes into conceptual categories.
4. Constructing preliminary themes.
5. Reviewing and refining themes across participants and data sources.
6. Producing a coherent, synthesized thematic interpretation.

The analysis was supported by NVivo software to ensure systematic data organization and to maintain an auditable analytical process
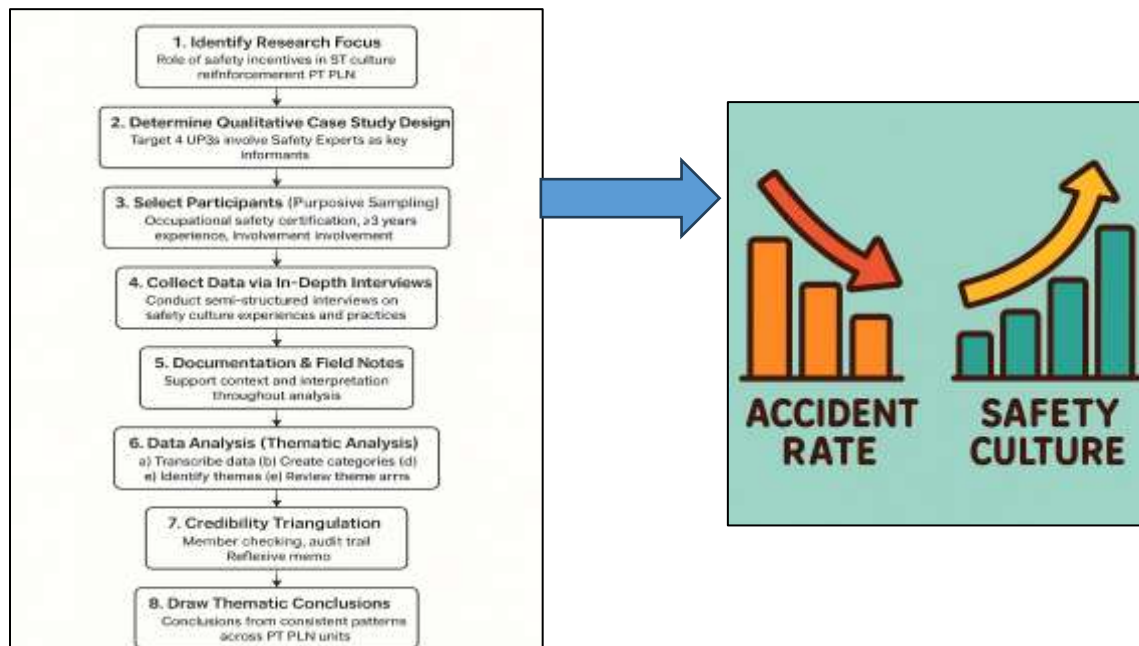
Trustworthiness of the Study

Rigor was established using Lincoln and Guba's trustworthiness criteria:

Criterion	Strategy Applied
Credibility	Member checking, prolonged engagement
Transferability	Thick contextual descriptions
Dependability	Documented audit trail detailing analytical decisions
Confirmability	Reflexive journaling to minimize researcher bias

Ethical Considerations

Ethical procedures included informed consent, voluntary participation, and strict confidentiality of participant identities and unit-specific operational information. Organizational access was granted through communication with unit management authorities, ensuring compliance with institutional ethical expectations.

Research Process Flowchart of the Qualitative Case Study Design
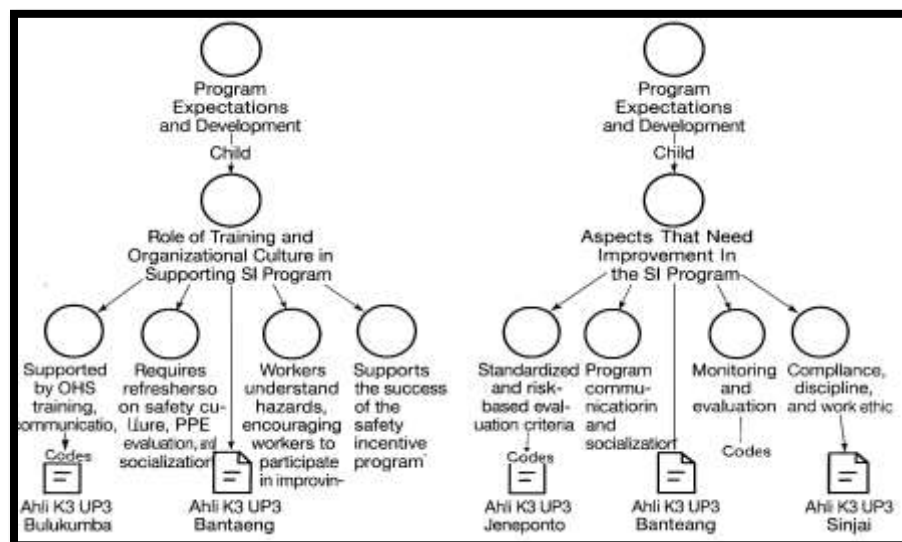
RESULT

Figure 1 Organizational Support and Areas for Program Improvement

The thematic mapping in Figure 1 shows that the effectiveness of the Safety Incentive (SI) Program is closely influenced by organizational support, particularly through training, safety briefings, and reinforcement of safety-related values in daily operations. Participants emphasized that continuous training builds hazard awareness and strengthens internal motivation to comply with safety procedures. However, the analysis also reveals the need for structural improvements in the program, particularly in developing standardized evaluation criteria and consistent documentation mechanisms across units. This indicates that while the program is supported at the cultural level, its operational execution still varies depending on managerial involvement and local implementation practices.
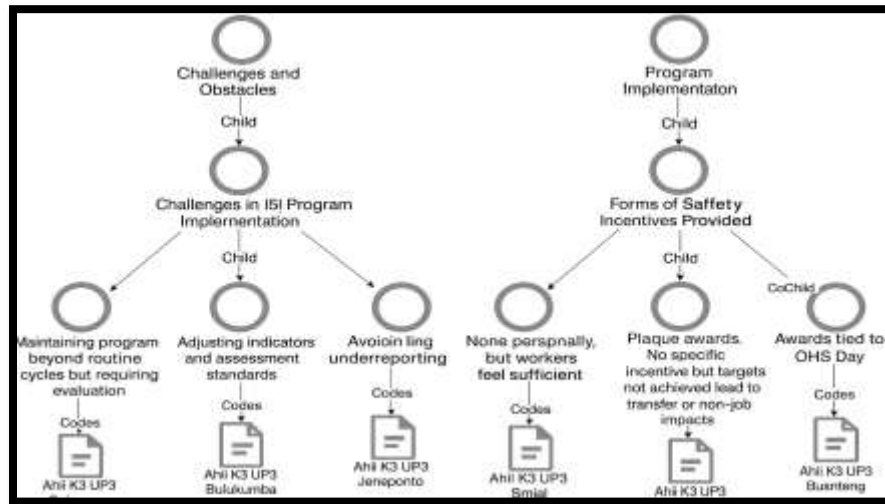
Figure 2 Implementation Challenges and Forms of Safety Incentives

Figure 2 illustrates that the SI Program is primarily implemented through non-monetary recognition, such as certificates, plaques, acknowledgment in meetings, or symbolic rewards. These forms of incentives were perceived as meaningful, especially in a collective work environment where social appreciation holds motivational value. However, several challenges emerged, including inconsistency in program continuation, varying levels of leadership commitment, and the risk of underreporting incidents due to incentive-linked performance indicators. These challenges highlight that the motivational value of incentives is contingent upon a balanced and transparent monitoring system.
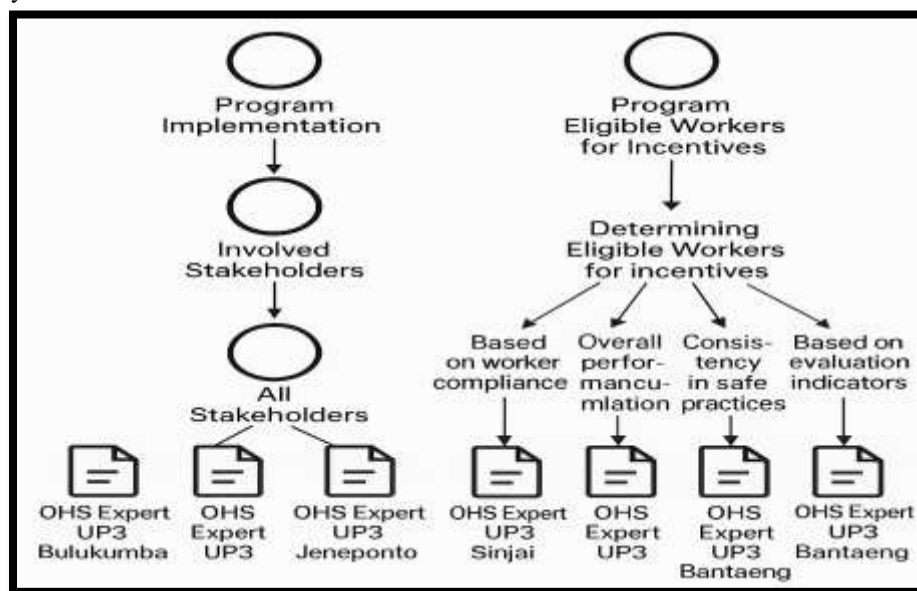

Figure 3 Stakeholder Involvement and Criteria for Incentive Eligibility

As shown in Figure 3, multiple stakeholders are involved in the implementation of the SI Program, including safety officers (Ahli K3), supervisors, unit managers, and workers. The involvement of diverse actors strengthens collective responsibility and reinforces safety norms. The criteria for receiving incentives are based on compliance consistency, performance indicators, attendance in safety activities, and demonstration of safe procedures. This reflects a **merit-based and behavior-oriented reward structure**, which encourages sustained rather than situational safety behavior. However, participants noted that clarity and fairness in eligibility criteria must be improved to avoid bias and misinterpretation.
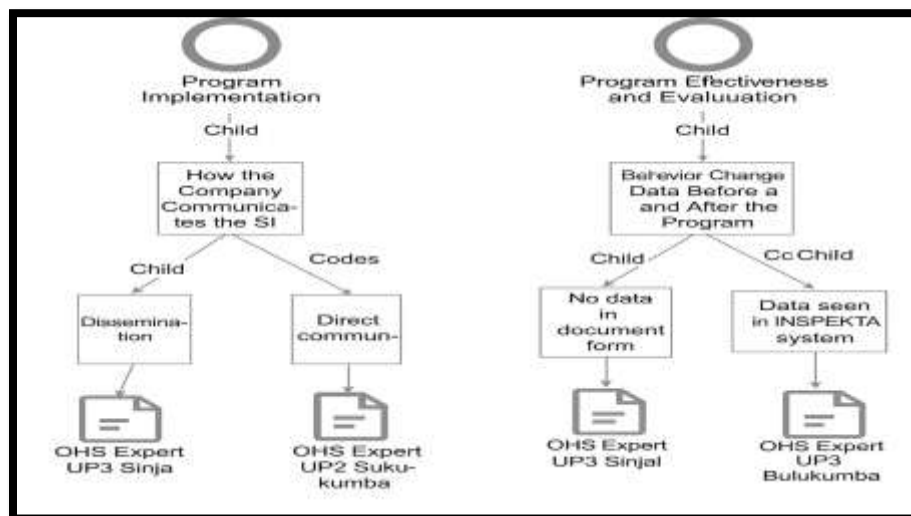
Figure 4 Impact of Safety Incentives on Safety Culture and Performance Outcomes

Figure 4 illustrates the mechanisms used by the organization to communicate the Safety Incentive (SI) program to workers, as well as the evaluation process used to assess changes in safety-related behaviors. The left branch shows the communication channels, including structured dissemination and direct communication approaches. The right branch presents the evaluation process, documenting variations in behavioral change assessment, ranging from direct observations and informal feedback to system-based monitoring through INSPEKTA. The involvement of Occupational Health and Safety (OHS) experts at the UP3 units ensures program continuity and contextual adaptation.
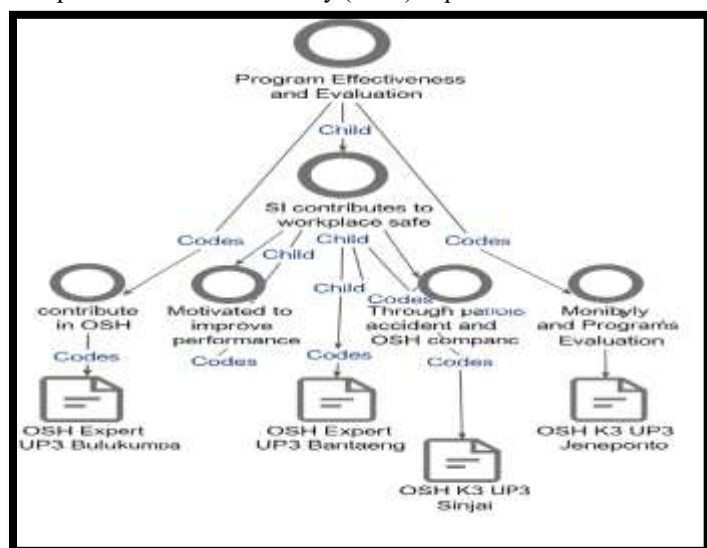

Figure 5. Contribution and Evaluation Framework of the Safety Incentive Program

Figure 5 illustrates how the Safety Incentive (SI) program contributes to safety performance and how its effectiveness is evaluated within the organization. The left component highlights that the SI program encourages employees to actively engage in safe work practices, enhance performance, and reinforce commitment to building a positive safety culture. This suggests that incentives function not only as external rewards but also as motivational drivers that support internalization of safety values. The right component demonstrates the evaluation mechanisms used to assess SI program outcomes, which include monitoring key performance indicators, conducting periodic safety compliance reviews, observing behavioral changes in the field, and maintaining program oversight. These evaluation activities align with continuous improvement principles in safety management systems. Overall, the integrated findings indicate that the SI program can influence both behavioral and organizational dimensions when supported by consistent monitoring, feedback, and reinforcement practices.

DISCUSSION

The findings of this study indicate that the Safety Incentive (SI) Program at PT PLN contributes meaningfully to reinforcing a proactive safety culture, particularly through non-monetary recognition, stakeholder collaboration, and continuous training. The thematic patterns presented in Figures 1 to 5 demonstrate that organizational culture and leadership engagement are critical determinants of the program's effectiveness.

Organizational Support and Structural Improvement Needs

Figure 1 highlights that the presence of organizational support—especially through training, safety briefings, and leadership reinforcement—plays a foundational role in shaping the success of the SI Program. This aligns with Cooper (2022), who argues that safety culture emerges from the interaction between organizational norms, managerial commitment, and employee behavior (23). However, the identification of non-uniform implementation practices across units suggests that while the cultural foundation is present, operational consistency remains variable. This finding is consistent with Nielsen et al. (2022), who reported that the uneven application of safety procedures across distributed organizational units can reduce overall program effectiveness (24).

Implementation Challenges and Incentive Modalities

Figure 2 shows that the SI Program relies primarily on non-monetary incentives, such as certificates, praise, and symbolic recognition. This is consistent with research in collectivist labor cultures, where social appreciation is often more motivating than financial rewards (25). However, participants also recognized challenges such as sustaining engagement and preventing underreporting of incidents. Similar concerns have been highlighted by Naveh and Katz-Navon (2020), who note that when incentives are tied to injury rates, workers may be discouraged from reporting near-miss events (26). The present study therefore reinforces the importance of **transparent reporting systems** to accompany incentive programs.

Stakeholder Engagement and Eligibility Fairness

The thematic patterns in Figure 3 emphasize that the program functions effectively when multiple stakeholders—including managers, supervisors, and safety officers—share responsibility for implementation. Clarke (2021) has similarly shown that **safety leadership and shared accountability** are predictors of positive safety climate outcomes (27). However, variations in perceived fairness and clarity of eligibility criteria suggest the need for standardized assessment frameworks. This reflects prior findings by Geller (2019), who argued that unclear reward criteria can reduce intrinsic motivation and trust in safety programs (28).

Cultural and Behavioral Impact on Workplace Safety

Figure 4 demonstrates that the SI Program does not only encourage compliance but also shapes **internalized safety values**, leading to observable improvements in hazard awareness and teamwork. This supports McSween's (2018) behavior-based safety theory, which posits that reinforcement through recognition builds long-term safety habits (29). The reported reduction in incident frequency in some units further suggests positive performance outcomes. However, such improvements are influenced by the degree of leadership involvement, mirroring findings by Burke et al. (2019), who highlight the importance of managerial modeling in sustaining behavior change (30).

Communication as a Driver of Cultural Continuity

As illustrated in Figure 5, communication through daily briefings, group messaging channels, and peer discussions helps reinforce shared norms and expectations. Effective communication has been widely recognized as a core mechanism for sustaining safety culture (31). In this study, communication did not only convey information but also strengthened a sense of shared responsibility. Behavioral changes—such as increased use of PPE and more active hazard reporting—indicate that employees are transitioning from compliance based on obligation to compliance rooted in shared cultural meaning.

This study has several limitations that should be acknowledged. First, the participant group consisted solely of certified safety professionals (Ahli K3), which may not fully capture the perceptions, challenges, and lived experiences of frontline workers or supervisors who directly engage in operational safety routines. This homogeneity of respondents may lead to a perspective that is more aligned with managerial or regulatory viewpoints. Second, the study was conducted within a single state-owned enterprise and across units located in the same regional division, which may limit the transferability of the findings to private-sector organizations or other industrial contexts with different operational dynamics. Third, the documentation and monitoring systems varied between units, resulting in differences in the availability and quality of supporting records related to behavioral change and incident outcomes. This makes it difficult to verify improvements using standardized quantitative indicators. Finally, the use of interviews introduces the potential for social desirability bias, where participants may emphasize program successes while minimizing challenges in order to maintain a positive organizational image. These limitations do not diminish the value of the study but suggest areas where future research may expand, such as including diverse participant groups, incorporating multi-site comparisons, and employing longitudinal evaluation to examine sustained behavioral impacts.

Future research should expand the scope of participant representation by including supervisors and frontline technical personnel to capture a broader range of perspectives on safety incentive practices and behavioral responses. This would enable a more comprehensive understanding of how incentives are experienced and interpreted across organizational hierarchies. Additionally, studies conducted across different regions or involving private-sector energy companies could offer comparative insights into how organizational culture and management structure influence the effectiveness of safety incentive programs. Longitudinal research is also recommended to examine how changes in safety behavior and incident rates evolve over time, allowing scholars to assess the sustainability of cultural improvements beyond initial program implementation. Furthermore, integrating quantitative safety performance metrics, such as near-miss reports and risk exposure frequency, would support stronger empirical validation of program outcomes. Finally, future studies may explore the role of digital monitoring and reporting systems in enhancing transparency, accountability, and fairness in incentive distribution.

CONCLUSION

This study shows that the Safety Incentive Program at PT PLN contributes to strengthening a proactive safety culture by encouraging consistent safe behavior, reinforcing collective responsibility, and promoting intrinsic motivation. The findings indicate that the program is most effective when supported by continuous safety training, leadership commitment, and clear communication practices. Non-monetary recognition, such as appreciation and symbolic awards, was found to be particularly meaningful in motivating employees within a collectivist work environment. However, variations in implementation across units and limited standardization of eligibility and evaluation criteria demonstrate the need for more consistent administrative and monitoring mechanisms. Additionally, the potential risk of incident underreporting highlights the importance of transparent reporting systems. Despite these challenges, improvements in safety awareness, behavioral compliance, and reduced incident rates suggest that the program fosters not only compliance but also long-term internalization of safety values. Strengthening alignment between policy, implementation, and evaluation will enhance program sustainability.

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