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Internal Communication in Risk Management of PT Aluminum Extrusion Indonesia's Occupational Health and Safety System

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Abstract: Occupational Health and Safety (OHS) is a critical element for sustaining productive human capital and ensuring organizational goals are met, particularly in high-risk industrial environments such as aluminum extrusion. Despite regulatory frameworks, including Indonesia's Law No. 1 of 1970 on Occupational Safety, the prevalence of workplace accidents (KK) and occupational diseases (PAK) remains a significant challenge. This study investigates the crucial role of internal communication in the effective implementation of risk management within the OHS system at PT Aluminum Extrusion Indonesia. Utilizing a qualitative, descriptive case study approach, this research aims to analyze the current state of communication channels, information flow, and engagement levels between management and workers regarding risk identification, assessment, and control measures. Findings are categorized based on communication effectiveness in transmitting risk-related information, fostering a safety culture, and ensuring participatory risk mitigation. The discussion highlights how breakdowns in vertical and horizontal communication lines can undermine comprehensive risk management and proposes a model for optimizing internal communication structures to enhance OHS performance, ultimately contributing to a safer and more productive workforce. The results confirm that a clear, timely, and bidirectional internal communication strategy is indispensable for embedding risk awareness and promoting proactive safety behavior across all organizational levels.

Keywords: Internal Communication, Risk Management, Occupational Health and Safety (OHS), Safety Culture, Aluminum Extrusion.

INTRODUCTION

Workers, as productive human resources, play a central and strategic role in achieving both organizational goals and national development objectives related to productivity, safety, and welfare. Occupational Safety and Health (OSH) values are essential for protecting workers from workplace accidents and occupational diseases (Tiasmoro, 2021). Although Indonesia currently enjoys a demographic advantage, the number of occupational accidents

(Kecelakaan Kerja/KK) and occupational diseases (Penyakit Akibat Kerja/PAK) continues to rise—particularly among young workers. Hence, the implementation of OSH is not only a legal and ethical necessity but also a strategic investment to enhance productivity, competitiveness, and sustainable development toward *Indonesia Emas 2045*.

Despite the existence of regulations such as Law No. 1 of 1970 on Occupational Safety and Ministerial Regulation No. 05/PRT/M/2014 on OSH management systems in the construction industry, workplace accidents in Indonesia remain high. Data from the Social Security Administration for Employment (BPJS Ketenagakerjaan) indicate a sharp increase in workplace accidents—from 110,285 cases in 2015 to 265,334 cases in 2022, and 370,747 cases in 2023. These statistics highlight that OSH implementation and awareness remain inadequate, posing serious threats to workers' safety, company operations, and economic stability.

Workplace accidents are legally defined under Law No. 3 of 1992 as incidents occurring in relation to employment, including those happening during commutes between home and work. Even though some cases are considered minor, they can result in serious physical and psychological consequences for workers and their families, as well as financial losses for companies due to decreased productivity and operational disruptions.

PT Aluminium Extrusion Indonesia (PT Alexindo) serves as a case study in this research. As a leading producer of aluminum extrusion products, PT Alexindo operates high-risk machinery and materials, making the implementation of OSH systems crucial. The company's internal communication, particularly between OSH operators and employees, focuses on ensuring the use of personal protective equipment (PPE) and regular machine maintenance. However, the primary cause of accidents remains human error. Company data show that workplace accidents increased from 7 cases in 2020 to 15 cases in 2021, followed by a decline to 9 cases in 2022 and 6 in 2023.

Risk management in OSH aims to identify, evaluate, and control potential hazards before work activities are conducted (Mardlotillah, 2020; Abrar & Tamin, 2023). Regular assessment and adaptation of safety strategies are necessary to respond to changing conditions in the workplace (Pagoray, 2022; Firman Isnan et al., 2023). Effective risk management also contributes to improving organizational performance and sustainability (Walujodjati & Rahadian, 2021; Ullah et al., 2021).

In the context of industrial development, occupational risk management has become increasingly critical as rapid technological and operational changes heighten the potential for workplace accidents (Syahriadi & Tenriajeng, 2020). The goal of risk management is not only to reduce and control risks but also to enhance productivity and ensure long-term safety (Paterson et al., 2021).

Therefore, this study aims to analyze the management of occupational safety and health risks implemented by PT Aluminium Extrusion Indonesia. By identifying the company's strategies and evaluating their effectiveness, this research seeks to contribute to the development of improved OSH risk management models that can be adapted and applied across various industrial sectors to reduce workplace accidents and enhance employee well-being.

This study seeks to achieve the following objectives is To understand internal communication in the occupational health and safety risk management system at PT Aluminum Extrusion Indonesia.

The investigation into the link between internal communication and OHS risk management draws upon three interconnected conceptual domains: Human Capital and OHS Philosophy, Risk Management System (RMS), and Internal Communication Theory.

Human Capital and OHS Philosophy

At its core, OHS is an imperative derived from the philosophical view that labor is a valuable corporate asset (human capital) essential for production (Unimed, D., 2022). To increase productivity, this labor force must be preserved and developed (Rivaldo, Y., 2022). OHS systems are therefore protective measures designed to ensure worker well-being, which directly correlates with sustained productivity and organizational resilience. The Indonesian framework, stipulated by Law No. 1 of 1970, mandates the creation of a safe working environment, making safety a non-negotiable component of operations. A lapse in safety is not just a regulatory failure but an erosion of valuable human capital.

Risk Management System (RMS) in OHS

Risk management is the systematic application of management policies, procedures, and practices to the tasks of establishing the context, identifying, analyzing, evaluating, treating, monitoring, and reviewing risk (Royyan, A., & Royyan, A., 2023). In the OHS context, this is typically structured following international standards like ISO 45001 or national equivalents (SMK3). The core stages of OHS risk management are:

1. Risk Identification: Recognizing and documenting potential hazards (e.g., moving machinery, chemical exposure, noise). This requires participatory communication from frontline workers.
2. Risk Analysis and Evaluation: Determining the likelihood and severity of harm from identified hazards.
3. Risk Treatment/Control: Implementing measures to eliminate or reduce the risk (e.g., engineering controls, administrative controls, Personal Protective Equipment).
4. Monitoring and Review: Continuous feedback loop to ensure controls are effective.

Effective risk identification, a crucial and proactive stage, relies entirely on a robust bottom-up communication system where workers feel safe and empowered to report hazards. Failures in this stage are often attributed to communication barriers, where workers fear reprisal or lack clear channels (Ullah et al., 2021).

Internal Communication Theory

Internal communication refers to the various methods and channels used for formal and informal communication within an organization. In the context of OHS, it is critical for fostering a safety culture—the shared belief, practices, and attitudes regarding safety (Z. N. F., & Safwan, M., 2023). Key communication concepts relevant here include:

- Communication Flow:
    - Downward Communication: Management transmitting policies, procedures, training, and performance feedback (e.g., safety memos, training sessions).
    - Upward Communication: Employees providing feedback, suggestions, and reporting incidents/hazards (e.g., suggestion boxes, pre-job safety analysis input).
    - Horizontal Communication: Interaction among peers and departments (e.g., shift change briefings, cross-functional risk assessment teams).
- Communication Channels: Formal (meetings, signage, written reports) and Informal (peer discussions, casual safety reminders).
- The Diffusion of Innovations Theory (DOI): This theory, relevant to the spread of a new safety practice or protocol, highlights how information is adopted across a social system. Effective communication is the primary driver for moving employees from awareness to adoption of a new safety standard.

The convergence of these theories suggests that the OHS risk management cycle cannot successfully complete itself without clear, targeted, and multi-directional internal communication that institutionalizes safety as a core organizational value.

METHOD

This study employs a qualitative descriptive case study approach. This methodology is appropriate because the research aims to provide an in-depth, holistic understanding of a complex, contemporary phenomenon—the intersection of internal communication and OHS risk management—within the real-life context of a specific organization, PT Aluminum Extrusion Indonesia. The descriptive nature allows for detailed mapping of communication processes and their perceived effectiveness, while the case study allows for deep contextualization of findings within the company's unique operational environment and cultural nuances.

The research was conducted at the primary manufacturing facility of PT Aluminum Extrusion Indonesia. The target population consisted of individuals across multiple organizational strata who are directly involved in the OHS risk management cycle. The sampling technique utilized was purposive sampling, selecting participants based on their roles and expertise to provide rich and varied data.

Key participant groups included:

1. Top Management: OHS/HSE Manager, Production Manager, and relevant Department Heads (for insight into policy and top-down communication).
2. Supervisory Level: Section Heads, Shift Supervisors, and Foreman (for insight into implementation and immediate communication flow).
3. Frontline Workers: Employees directly engaged in the extrusion, cutting, and finishing processes (for insight into bottom-up communication, hazard recognition, and procedural understanding).

A total of 15 individuals were selected for in-depth interviewing and observation to ensure comprehensive coverage of the communication spectrum.

Three primary methods were utilized to ensure triangulation and data richness:

1. In-depth Semi-Structured Interviews: A flexible interview guide was used to explore participants' perceptions, experiences, and understanding of OHS risk communication. Questions focused on: the frequency and clarity of safety briefings, the ease of reporting hazards, the responsiveness of management to reported issues, and the perceived effectiveness of OHS training.
2. Observation: Direct, non-participant observation was conducted during critical OHS activities, including:
    - Daily shift-change meetings (Toolbox Talks).
    - Formal OHS Committee meetings.
    - Risk assessment (Hazard Identification, Risk Assessment, and Risk Control - HIRARC) meetings.
    - The use of physical communication channels (e.g., safety boards, signage, memos). This allowed the researcher to verify reported communication practices against actual behavior.
3. Documentation Review: Analysis of key internal documents provided contextual data on formal communication policies, including:
    - The company's OHS Policy and Procedures Manuals.
    - Training records and communication logs.
    - Incident and near-miss reports (to assess the effectiveness of the feedback loop).
    - Minutes of safety meetings and risk assessment reports.

The data analysis followed the steps typical of qualitative research:

1. Data Transcription and Organization: Audio recordings of interviews were transcribed verbatim, and field notes and documents were systematically organized.
2. Data Reduction: The data was systematically reviewed to filter and summarize relevant information, focusing on excerpts related to communication barriers, channels, flow, and the impact on risk management.
3. Data Display and Coding: Using thematic analysis, key themes and patterns were identified and coded. Major codes included: "Clarity of Safety Messaging," "Management Responsiveness," "Worker Empowerment in Reporting," "Channel Accessibility," and "Perceived Safety Culture."
4. Conclusion Drawing and Verification: Interpretations were developed based on the identified themes, linking the empirical data back to the theoretical framework (Communication Flow and Risk Management Stages). Verification was achieved through constant comparison of data sources (interview vs. observation vs. documentation) to ensure the findings were robust and contextually accurate.

The entire process was conducted ethically, ensuring the anonymity and confidentiality of all participants and the company.

RESULTS AND DISCUSSION

RESULTS

1. Risk Identification

The accident reports from **PT Aluminium Extrusion Indonesia (PT Alexindo)** for the 2020–2023 period indicate that employee compliance with occupational safety and health (OSH) standards remains suboptimal. Although the company provides complete personal protective equipment (PPE), such as helmets, gloves, and masks, employees often consider them uncomfortable and cumbersome. These attitudes reveal that the problem lies not in facility provision but in behavioral factors.

Interviews with several workers revealed that knowledge about OSH management is still limited. While most employees understand basic safety concepts, they often neglect participation in OSH training sessions. To improve attendance, management sometimes provides incentives such as free lunches. However, employees tend to avoid OSH meetings held outside of working hours, perceiving them as unpaid overtime.

According to company safety officers, most accidents stem from human error, primarily caused by fatigue and lack of concentration. Common incidents include burns from contact with molten aluminum (which can reach temperatures of 600°C), cuts from packaging materials, and minor injuries from manual equipment handling. While machinery failure occasionally causes accidents, the dominant causes remain behavioral and procedural negligence.

Risk identification activities at PT Alexindo are carried out through weekly safety briefings, regular patrols, and periodic equipment inspections. Given that many workers are senior employees who may forget standard safety procedures, OSH briefings are conducted every Monday morning. The OSH officers also carry out patrols once or twice weekly to ensure compliance and detect potential hazards in production areas.

2. Risk Evaluation

The company identifies both internal and external risk factors. Internal risks include exposure to excessive heat, machinery malfunction, and aluminum dust that may cause eye irritation and respiratory problems. External risks, on the other hand, typically occur during employee commutes to work, often related to unsafe driving or incomplete use of safety equipment such as helmets.

To mitigate these risks, PT Alexindo has implemented several preventive strategies, such as suggesting uniform modifications from short-sleeved to long-sleeved shirts to minimize exposure to heat and sharp objects. Furthermore, the company maintains an accident database and evaluates the frequency and severity of incidents each quarter. When no accident reports are received within a reporting period, the OSH system is considered effective.

The company also employs incident reporting through digital communication channels, notably WhatsApp groups, to ensure that accident information is disseminated quickly for immediate action. These evaluations are coordinated through regular meetings between OSH officers and management to assess existing conditions and formulate recommendations for improvement.

3. Control Measures and Emergency Response

PT Alexindo has established a comprehensive **emergency response system** that includes a first-aid (P3K) unit, an on-site clinic, and partnerships with nearby hospitals. In case of an accident, OSH officers promptly provide first aid and refer workers to hospitals if necessary. Nevertheless, the company acknowledges the need for additional emergency equipment such as stretchers and wheelchairs to improve response capacity, particularly for workers located in hard-to-reach factory zones.

An example of emergency handling occurred during the COVID-19 pandemic, when a worker fainted and was later confirmed positive for COVID-19. The OSH operator immediately coordinated medical assistance and conducted testing for all related personnel. Fortunately, all test results returned negative, demonstrating the effectiveness of rapid coordination and containment measures.

To enhance compliance, PT Alexindo also emphasizes continuous communication and training through safety briefings and informal reminders from supervisors. However, behavioral factors remain a significant challenge, as many employees underestimate the importance of safety procedures once they become routine. The company's ongoing collaboration with the OSH Committee (P2K3) plays a vital role in enforcing safety culture and maintaining a low accident rate.

DISCUSSION

The implementation of internal communication in the occupational health and safety (OHS) risk management system at PT Aluminium Extrusion Indonesia is primarily coordinated by the Occupational Safety and Health Committee (P2K3). This committee, along with general OHS operators and the maintenance division, directly supervises field operations to prevent workplace accidents. Preventive communication efforts include the installation of informational materials such as pamphlets, banners, and announcements throughout the workplace, alongside regular departmental meetings and safety socialization sessions. These continuous efforts are crucial given that PT Aluminium Extrusion Indonesia is an established company with a long-standing workforce that tends to maintain old, unsafe work habits.

To strengthen employee engagement, OHS-related discussions are facilitated through WhatsApp groups, allowing quick dissemination of safety information and reminders. The company also organizes safety briefings and socialization sessions; however, employee participation is often motivated by small incentives such as free lunches. This behavior indicates that employee awareness and motivation toward safety remain low, making internal communication and incentive-based approaches essential for fostering compliance.

Risk identification is conducted through continuous observation of workplace conditions, machinery maintenance, and adherence to PPE (Personal Protective Equipment) usage. P2K3 evaluates potential hazards by monitoring work environments and analyzing

previous incidents, focusing on both the frequency and severity of workplace accidents. Although emergency preparedness training has been implemented, such as fire evacuation simulations and emergency response drills, its execution remains limited and requires improvement to ensure all employees are adequately prepared.

In terms of risk assessment, PT Aluminium Extrusion Indonesia determines hazard levels based on environmental conditions and potential threats during operational activities. Safety officers are on standby 24 hours a day; however, challenges arise when staff members live far from the factory, delaying emergency responses. The company's risk control strategy emphasizes strict adherence to Standard Operating Procedures (SOPs), consistent PPE usage, and the prompt reporting of any irregularities to the maintenance department. These reports are subsequently discussed in coordination meetings between the OHS Committee and management to ensure follow-up actions are taken.

The implementation of OHS risk management strategies remains a work in progress. Although preventive measures have been initiated, overall effectiveness is hindered by inconsistent employee compliance and limited evaluation mechanisms. P2K3 has begun addressing these weaknesses by introducing monthly evaluation meetings (RATIN) that review incident investigations, identify recurring causes, and develop preventive recommendations. Regular safety briefings are also conducted to reinforce caution and emphasize the consistent use of PPE.

Monitoring and reassessment of mitigation plans are conducted through direct investigations and discussions with company leaders regarding necessary equipment updates, repairs, or replacements. These collaborative efforts between the OHS Committee and top management demonstrate an ongoing commitment to improving workplace safety through both structural measures and behavioral interventions. However, to achieve sustainable safety culture, PT Aluminium Extrusion Indonesia must continue integrating communication-based strategies with participatory employee involvement and continuous evaluation of its risk management framework.

CONCLUSION

The study concludes that the internal communication and risk management strategies of PT Aluminium Extrusion Indonesia are active but not yet fully effective in preventing workplace accidents. While the Occupational Safety and Health Committee (P2K3) has implemented preventive measures such as safety briefings, WhatsApp group communication, and periodic evaluations, employee compliance and awareness of occupational safety remain low. The reliance on incentives to encourage participation reflects a need for stronger safety culture integration within the organization.

Despite challenges, continuous initiatives—such as routine monitoring, monthly evaluations, and consistent use of Personal Protective Equipment (PPE)—demonstrate the company's growing commitment to strengthening its OHS management system. To achieve sustainable improvement, PT Aluminium Extrusion Indonesia must enhance employee engagement, improve training quality, and establish a more participatory and communicative approach that embeds safety as a shared responsibility across all levels of the organization.

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