



ENGAGEMENT OF STAKEHOLDERS IN THE IMPLEMENTATION OF OCCUPATIONAL SAFETY AND HEALTH PROGRAMS IN MICRO-BUSINESS ENTERPRISES

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Abstract

Occupational Safety and Health programs are essential to safeguarding worker well-being; however, their implementation within micro-business enterprises is often impeded by structural and operational constraints. This research explored how stakeholder collaboration contributes to overcoming systemic challenges and fostering more resilient and safer workplace environments in micro-business contexts. This study examined the collaborative engagement of stakeholders that affects the design, implementation, and effectiveness of occupational safety and health programs in micro-business enterprises. The research identified gaps in governance, limited awareness, and fragmented coordination as critical barriers and proposes targeted interventions to mitigate these issues. Utilizing a mixed-methods design, the study integrated document analysis and key informant interviews to ensure methodological triangulation. A stakeholder analysis was conducted to map the roles, interests, and interrelationships of key actors, shedding light on the institutional dynamics influencing program implementation. Findings highlight persistent gaps in awareness of occupational safety and health requirements among internal stakeholders, specifically employees and employers, alongside an unclear delineation of organizational roles and responsibilities, and limited capacity for regulatory enforcement. The study recommends fostering structured collaboration between internal and external stakeholders to reinforce program coherence and accountability. It further emphasizes the importance of institutionalizing participatory mechanisms that support inclusive decision-making, thereby improving safety outcomes and promoting enduring organizational resilience. In doing so, the research contributes to the development of responsive and doable occupational safety and health frameworks attuned to the specific needs of micro-business enterprises.

Keywords: Occupational safety and health, micro-business enterprises, stakeholder engagement, workplace resilience, collaborative governance

1 Introduction

Occupational Safety and Health (OSH) programs constitute essential frameworks that safeguard employee well-being while promoting a culture of compliance and preventive safety. In the context of micro-business enterprises, where financial, human, and technical resources are often constrained, effective stakeholder engagement emerges as a pivotal factor in the successful implementation of OSH initiatives. This study investigates the role of stakeholder involvement in advancing OSH programs within micro-business settings, emphasizing the collaborative interplay among enterprise owners, government bodies, and non-governmental organizations. By analyzing the mechanisms and dynamics of stakeholder engagement, the research seeks to identify actionable strategies that enhance program efficacy and support the long-term viability of micro-business enterprises.

The International Labor Organization defines OSH as "the discipline dealing with the prevention of work-related injuries and diseases as well as the protection and promotion of the health of workers." It encompasses a wide range of activities in enhancing work conditions and environments. It includes various actions to improve working conditions and settings (ILO, n.d.). The OSH programs across Asia reflect a complex and evolving landscape shaped by both persistent challenges and notable advancements.

Historically, the prioritization of economic development has frequently overshadowed workplace safety concerns, leading to considerable occupational health and safety risks, particularly within the informal sector, where regulatory oversight and resource allocation remain limited. Idris et al. (2023) examined the deeply concerning state of occupational conditions across Asia, reporting that approximately two million workers die, 65% of which occur within the region, from work-related illnesses annually. Their findings underscore a disproportionate emphasis on physical hazards in the workplace, with insufficient attention given to psychosocial risk factors. This imbalance is exacerbated by the absence of comprehensive policies, weak regulatory frameworks, and limited union influence, fostering a pervasive culture of silence that leaves many workers unaware of their rights and protective entitlements.

Lu et al. (2020) investigated the hazards associated with workplace accidents through both historical and geographical lenses, contributing to the development of more robust risk management strategies within the Chinese context. Their study revealed that effective mitigation of major occupational risks necessitates a dual focus on temporal and spatial dimensions, enabling a nuanced understanding of how risks evolve and vary across different work environments. Moreover, the findings underscore the importance of a comprehensive and multi-faceted approach that integrates diverse determinants of workplace safety to reduce the probability of catastrophic incidents.

Dabla-Norris (2020) noted that a significant portion of the labor force, especially within the informal sector, remains insufficiently informed about safety protocols and emergency procedures. The accelerated pace of industrial growth frequently outpaces the development of safety infrastructure and policy frameworks, leaving gaps in protection. Moreover, in many Asian economies, the informal sector comprises a substantial share of the workforce, where occupational safety regulations are routinely neglected. Moreover, many workers, particularly those in the informal sector, lack sufficient awareness of safety protocols and emergency response procedures. The rapid rate of industrialization may exceed the development of safety infrastructure and regulations. A considerable proportion of the workforce in many Asian countries works in the informal sector, where safety regulations are frequently ignored.

According to Harrison (2019), sustaining workforce productivity and well-being requires the implementation of preventive safety measures and innovative digital solutions in occupational health strategies. In many Asian countries, particularly those undergoing rapid industrialization, substantial challenges persist in ensuring worker safety. Occupational safety extends beyond the enactment of laws and regulations; it demands the cultivation of a proactive safety culture supported by technological interventions. Weak enforcement mechanisms and regulatory non-compliance lead to unsafe working conditions, exacerbating risks within both formal and informal sectors.

The history of OSH in the Philippines reveals a complex interaction of legislative, economic, and social influences. Early labor legislation, including the Workmen's Compensation Act of 1928, established basic safeguards for workers against work-related injuries and diseases. However, the Labor Code of 1974 considerably improved the country's OSH standards. The Philippines has recently strengthened its OSH system. A significant development is the passage of Republic Act No. 11058 (2018), which aims to enhance compliance with OSH standards and impose stricter penalties for infractions. This law has led to increased enforcement efforts and a heightened focus on workplace safety.

Lu's (2022) study uses data from the Department of Health's Online National Electronic Injury Surveillance System (ONEISS) to examine work-related injuries and fatalities in the Philippines from 2010 to 2020. After analyzing 72,897 cases, it was determined that the incidence rate of occupational

injury is 4.27 percent. Before falling in 2020, the rate peaked in 2019. The study found strong correlations between several injury types and patient deaths, emphasizing the need for better occupational health and safety protocols. In particular, falls and transport/vehicular crashes were associated with higher odds of multiple injuries and fatal outcomes.

Micro-business enterprises play a significant role in employment generation in the Philippines. The 2023 List of Establishments (LE) of the Philippine Statistics Authority (PSA) recorded a total of 1,246,373 business enterprises operating in the country. Of these, 1,241,733 (99.63%) are MSMEs and 4,640 (0.37%) are large enterprises. Micro enterprises constitute 90.43% (1,127,058) of total establishments, followed by small enterprises at 8.82% (109,912) and medium enterprises at 0.38% (4,763). According to the Department of Trade and Industry (DTI), micro-enterprises constitute 90.43% of the total establishments in the country and contribute 33.95% to total employment (DTI, 2023).

In La Trinidad, Benguet, Micro-business enterprises contribute significantly to local employment. In the Philippines, micro, small, and medium enterprises (MSMEs) collectively generate a substantial portion of the country's employment, with micro-enterprises playing a major role. Almost all businesses are considered micro-enterprises, comprising more than 90% of the total micro, small, and medium enterprises (Garambas and Pinos-an, 2021)

Microbusinesses in Benguet Province have severe OSH concerns due to inadequate resources, informal practices, and knowledge gaps. Targeted training, ergonomic improvements, and policy creation are critical for improving OSH in these firms, given their specific socioeconomic environment. Microbusinesses in Benguet Province have severe OSH concerns due to inadequate resources, informal practices, and knowledge gaps. Due to their socioeconomic environment, these firms require targeted training, ergonomic improvements, and policy creation to improve OSH (Lopes et al., 2020).

A 2017 study by Lu of vegetable farmers in Benguet province indicated that frequent exposure to pesticides during farm work led to a high number of health issues, including muscle pain, weakness, and fatigue. The use of insecticides was associated with these symptoms, highlighting the need for better pesticide safety practices and health programs for farmers in the region.

To understand the broader context of health risks, Leung and Lu (2016) investigated the environmental and health risks of small-scale gold mining using cyanidation in the Philippines.

The study found that miners were exposed to various hazards, including exposure to toxic chemicals like cyanide and nitric acid, as well as physical hazards like dust and noise. Many miners suffered injuries and had elevated blood cyanide levels. The study highlighted the urgent need for improved safety practices and health interventions to protect the well-being of small-scale miners.

Although microbusinesses are the backbone of many economies, their limited resources and awareness often lead them to disregard OSH. This neglect can result in accidents, injuries, and diseases, compromising workers' well-being and the long-term viability of these firms. This study stemmed from the idea that effective OSH initiatives in micro-businesses necessitate the collaborative efforts of multiple stakeholders. By understanding the roles and responsibilities of key stakeholders, the researcher was able to build strategies for improving OSH practices and outcomes. The study contributed to existing knowledge by identifying these stakeholders, clarifying their roles, assessing the degree of implementation, identifying barriers, and developing recommendations.

This information has important implications for a wide range of stakeholders, including micro-enterprise employers, employees, community members, government institutions, non-governmental organizations, the academe, and researchers. A safe and healthy work environment is crucial for business productivity. While it is a shared responsibility of employers, employees, and external partners, it is especially critical for microbusinesses, which often have limited resources. When effective OSH programs are not implemented, businesses face higher costs from workplace accidents and illnesses. These expenses include direct costs, such as medical bills, and indirect costs. Hence, the study's findings can help micro-enterprise employers improve safety by implementing new measures and training programs, which would lead to fewer workplace injuries and higher employee

satisfaction. Furthermore, understanding stakeholder roles can help firms manage safety requirements more effectively, thereby avoiding legal consequences by fostering a safety culture in the establishments. Employees stand to gain from improved OSH programs as a consequence of stakeholder collaboration, which leads to safer working conditions and a lower chance of accidents. This research can help the government design better policies by understanding the roles of stakeholders in OSH. This can guide governments in creating effective OSH policies tailored to the unique challenges of microbusinesses. This research can also help governments better allocate resources for OSH programs in these firms.

Additionally, non-governmental organizations (NGOs) can find this study valuable for establishing OSH programs to create more targeted interventions that improve occupational health and safety in microbusinesses, which would increase both their outreach and effectiveness. The study also highlights potential opportunities for collaboration among these groups.

Moreover, this can also raise community awareness, empowering local communities to advocate for stronger safety standards in micro-businesses. This would lead to fewer workplace accidents and improved public health outcomes. Hence, the study's findings are valuable for several key stakeholders. It highlights potential collaborations between NGOs, enterprises, and the government to create a unified approach to workplace safety. For academic purposes, the research provides insights that can be integrated into the curriculum for occupational health, safety management, and small business administration, offering real-world applications for students. Furthermore, this research serves as a benchmark for future studies on stakeholder engagement in OSH. It provides a foundation for deeper analysis of effective safety methods across various sectors. Ultimately, the study enhances understanding of how different stakeholders impact OSH practices in microbusinesses, offering empirical data and frameworks that can be used to assess and improve OSH programs specifically for these enterprises.

Engagement

Active involvement and participation from stakeholders, including employees, employers, regulators, and community members, is crucial for the planning, execution, and evaluation of OSH programs, especially within micro-businesses that have limited resources. Engaging these diverse groups allows micro-businesses to leverage different perspectives and expertise, ensuring that OSH programs are comprehensive, effective, and tailored to the organization's specific needs. Engaging stakeholders fosters a culture of safety, leading to greater advocacy for and compliance with safety measures, which ultimately contributes to a business's success and sustainability (Delmas & Toffel, 2017).

Stakeholders

Stakeholders may include employees, microbusiness establishments, and communities who care about the research, but they are usually not academic researchers. Other key stakeholders include industry leaders who can guide the innovation or connect it to key decisions; researchers from advocacy groups; community partners focused on innovation, education, and workforce development; and beneficiaries of the research outcomes, such as community members, industry representatives, Indigenous groups, and policymakers. Relevant stakeholders may be diverse and may disagree with each other (Palmer et al., 2023).

Occupational Safety and Health (OSH)

According to the International Labor Organization (ILO, 2023), occupational safety and health (OSH) involves the scientific and practical methods for protecting and promoting workers' safety, health, and welfare. The Department of Labor and Employment (DOLE) defines occupational safety and health (OSH) as the conditions and practices that are safe, healthful, and conducive to worker well-being. It encompasses a wide range of issues, including workplace hazards, injury prevention, and health promotion (DOLE, 2023). The OSH aims to promote and maintain the physical, mental, and social well-being of workers, prevent health issues caused by working conditions, protect workers from risks

that could harm their health, and provide access to social insurance and related benefits (DSWD, 2021).

Occupational Safety and Health (OSH) Act. Republic Act 11058, also known as the Occupational Safety and Health (OSH) Act, is a landmark legislation in the Philippines that aims to strengthen compliance with OSH standards and provide penalties for violations (DOLE, 2018). This act outlines the responsibilities of employers and employees in ensuring a safe and healthy work environment. Employers are primarily responsible for ensuring a safe and healthy work environment for their employees. This includes providing a workplace free from hazards, conducting risk assessments to identify and mitigate potential dangers, and providing necessary safety training and information to workers. Employers are also obligated to provide personal protective equipment (PPE) at no cost to employees and ensure its proper use. Moreover, they must implement a comprehensive Occupational Safety and Health (OSH) program, which includes developing safety policies, emergency preparedness plans, and provisions for PPE and safety signage. Employers are also responsible for ensuring workers participate in safety and health committees and for complying with all occupational safety and health (OSH) standards and regulations. Employees, on the other hand, have the responsibility to comply with OSH standards and safe work practices. They must properly use the PPE provided by the employer and report any workplace hazards to their supervisor or the appropriate authorities. Employees are also encouraged to participate in OSH activities, such as training and committee meetings, to contribute to a safer work environment. While employers are ultimately responsible for workplace safety, employees play a crucial role in upholding these standards by adhering to safety protocols, reporting hazards, and actively participating in safety initiatives. Based on these concepts, the study developed effective strategies to improve OSH practices in micro-businesses by providing a comprehensive understanding of the factors that influence stakeholder involvement in OSH. This understanding made it possible to create interventions that can enhance OSH outcomes.

Certification of First Aiders and Accreditation of First Aid Training in the Philippines. DOLE No. 235 series of 2022 outlines the rules on the certification of first aiders and the accreditation of first aid training providers in the Philippines (Department of Labor and Employment [DOLE], 2022). This order aims to standardize and improve the quality of first aid training, ensuring that individuals are equipped to respond effectively to workplace emergencies.

Micro-Small and Medium Enterprises. The Department of Trade and Industry categorizes Micro, Small, and Medium Enterprises (MSMEs) based on their asset size and number of employees. Enterprises are classified as micro-business firms with PHP 3,000,000 or less in assets and one to nine employees; small firms with 10 to 99 employees with PHP 300,000,001.00 to PHP 15,000,001.00 in assets; and medium enterprises with PHP 15,000,001 to PHP 100,000,000 in assets and 100 to 199 employees. Large enterprises have over PHP 100,000,001 or more in assets and 200 or more employees (DTI, n.d.). For this study, the size of the business is only focused on micro-enterprises. Section 2A.02, Article 3A, Chapter III of the La Trinidad Revised Revenue Code of 2017 defines micro-business enterprises as those with less than 10 employees and a capitalization of at least PHP 3 million (Municipal Ordinance No. 24-207).

Stakeholder Theory. This theory of capitalism emphasizes the interconnected relationships between a company and all parties with an interest in its operations. The theory argues that a company should create value for all its stakeholders, not just its shareholders. In 1984, R. Edward Freeman developed the Stakeholder Theory of Organizational Management and Business Ethics, which tackles morals and values in organizational management. In his award-winning book, *Strategic Management: A Stakeholder Approach*, Freeman (1984) outlines and models the various groups that make up a corporation's stakeholders. He also provides managers with techniques for considering the group's

interests. This theory emphasizes that organizations are part of a network of relationships with various stakeholders, benefiting both internal and external parties. Freeman defines a stakeholder as any group or individual who can influence or is impacted by an organization's actions. This can include employers, employees, government agencies, industry associations, and community members. This approach highlights the importance of managing these connections to achieve a company's goals. The stakeholder concept has a long tradition of disciplines (Richter and Dow, 2017). They elaborate on the historical development of stakeholder theory, tracing its origins to early management thought and its evolution through various theoretical frameworks. They highlight the increasing recognition of stakeholders' diverse interests and the need for organizations to adopt a more inclusive and sustainable approach to business. In the context of OSH, this theory suggests that involving and engaging all relevant stakeholders can lead to more effective OSH programs.

Social Exchange Theory (SET). This theory posits that organizations are embedded within a network of relationships with various stakeholders, emphasizing the importance of managing relationships to achieve organizational goals. Homans (1958), a prominent sociologist who developed the "Social Exchange Theory (SET)," views it as an exchange of rewards and costs. He argued that individuals participate in social interactions to maximize rewards and minimize costs. This process is guided by three principles: reinforcement, stimulus generalization, and value. While particular studies on the application of SET to occupational safety and health in micro-businesses in the Philippines may be scarce, various studies have investigated the role of social exchange in workplace safety in general. Trincherro et al. (2019) examined the relationship between supervisor-employee interactions, employee engagement, and safety culture within healthcare. They found that strong social exchange bonds between managers and employees were linked to a more robust safety culture. This insight can be applied to occupational safety and health (OSH) by helping us understand how stakeholders, like employers and employees, weigh the costs and benefits of implementing safety measures. By understanding these perceived costs and benefits, the researcher designed interventions that encourage stakeholders to prioritize OSH.

Diffusion of Innovation (DOI) Theory. Rogers' Diffusion of Innovation (DOI) theory, one of the oldest social science theories developed in 1962 to explain how innovations spread through a social system over time. It developed in communication to describe how an idea or product gains traction over time and diffuses (or spreads) among a certain demographic or social system. As a result of this diffusion, individuals within a social system accept a new concept, habit, or product. Adoption refers to a person doing something different from what they did previously. The key to adoption is for the user to regard the concept, behavior, or product as novel or inventive. According to Rogers (1962), the adoption of a new concept, activity, or product does not happen all at once within a social system. Instead, it is a process where some individuals are more likely to accept the innovation earlier than others. This theory has been widely applied to several occupational safety and health studies, particularly in healthcare settings. This provides a valuable framework for examining the adoption patterns of safety protocols, technologies, or practices across distinct population groups. For example, researchers have used it to understand the factors influencing healthcare professionals' adoption of hand hygiene practices, the diffusion of safety interventions in small businesses, and the implementation of electronic health record alerts to prevent medication errors. Liu et al. (2021) used this theory to examine the factors that influence healthcare professionals' adoption of proper hand hygiene practices. They discovered that perceived relative advantage, compatibility, and observability were important variables in driving adoption. By understanding these factors, researchers can identify strategies to promote the adoption of OSH practices among micro-businesses.

2 Methodology

The study employed a descriptive mixed-methods approach, utilizing both quantitative and qualitative designs for data collection and analysis. The quantitative approach generated numerical data that were statistically analyzed to assess: (1) the level of employer and employee engagement in implementing OSH programs, (2) the extent of OSH program implementation, and (3) the problems and challenges encountered during implementation. Employing mixed-methods research enhances understanding through comprehensive data integration, improves validity via triangulation, provides methodological flexibility, addresses inherent limitations of individual methods, optimizes resource use, and supports practical applications in the topic under study.

The study covered various microbusiness entities in La Trinidad, Benguet. La Trinidad serves as the capital town of Benguet Province. The municipality has a land area of 70.04 square kilometers and a population of 137,404 as of the 2020 Census, with a density of 1,962 inhabitants per square kilometer. Economically, La Trinidad thrives on agriculture, particularly strawberry farming, which has earned it the title "Strawberry Capital of the Philippines". The municipality also benefits from trade and commerce, with its urban core serving as a hub for socio-economic activities (Municipal Planning & Development Office. (2016).

The study involved a total of 152 respondents, representing a range of business types, organizational positions, and years of experience within their respective entities. The largest group (N=53, 35%) was engaged in retail micro-enterprises, followed by service-based entities (N=50, 33%), food processing (N=23, 15%), and agriculture (N=18, 12%). The smallest segment came from handicrafts and arts (N=8, 5%). Participants held various positions within their organizations, with the majority being rank-and-file employees (N=108, 70%). Others included business owners (N=25, 16%), supervisors (N=9, 6%), managers (N=7, 5%), and individuals in other roles (N=5, 3%). In terms of tenure, nearly half of the respondents (N=65, 43%) had been with their establishments for six to ten years, while one-third (N=48, 32%) had less than five years of experience. A smaller proportion (N=28, 18%) had served for 11 to 15 years, and the remaining respondents (N=11, 7%) had more than 15 years of experience. Purposive sampling was employed to ensure that participants had relevant exposure to occupational safety and health (OSH) programs, allowing for a comprehensive analysis of engagement, implementation, and challenges across different organizational contexts. The study employed a purposive sampling method, targeting key stakeholder groups including micro-business owners, managers, supervisors, and rank-and-file employees. These primary respondents were identified from the current registry of micro-business establishments maintained by the Department of Trade and Industry, Benguet Field Office.

In addition to purposive sampling, the study employed convenience sampling to include respondents from government and non-government organizations with relevant experience in OSH. This approach was highly effective, providing direct access to agencies and NGOs that work closely with microbusinesses. Through in-depth interviews with key personnel, the researcher gained valuable insights into existing OSH programs, identified challenges, and documented best practices. Convenience sampling helped identify innovative practices and service gaps in institutional support for microbusinesses. By combining purposive sampling of micro-business participants with convenience sampling for government and NGO representatives, the study provided a well-rounded view of the OSH landscape, capturing both frontline experiences and broader organizational strategies.

The primary data collection tools used in this study included a checklist questionnaire, a survey questionnaire, and formal interviews. The indicators used in this study were based on various studies, articles, and information materials with emphasis on the contents of Republic Act 11058, also known as the Occupational Safety and Health (OSH) Act. The questionnaire was used to collect data from business establishments. The questionnaire also collected respondent profiles from personnel at government and non-government organizations through a separate survey and in-depth interviews with structured questions.

The researcher pilot-tested the instrument on 52 respondents in Baguio City, a location adjacent to the primary study area. This was done to prevent bias, test for generalizability, and identify unforeseen logistical issues without contaminating the main sample. The pilot test also helped ensure the instrument's validity and reliability, with Cronbach's Alpha (α) and McDonald's Omega (ω) to assess how well the indicators in each scale measure their respective constructs. Both Cronbach's Alpha and McDonald's Omega are 0.97, indicating excellent internal consistency. This means the indicators in this scale were highly consistent in measuring engagement.

Before administering the instruments, the researcher secured a "Letter of Introduction" for the head of the La Trinidad Licensing Office. This letter helped determine the number of micro-businesses in the area, which formed the basis for selecting the study's respondents. With approval from the ethics committee, another "Letter of Introduction" was prepared for the chosen businesses. This letter detailed the study's academic purpose, emphasized confidentiality, and invited them to participate voluntarily. Once management gave its approval, a "Waiver of Agreement" was provided for respondents to confirm their engagement. Similar letters were also sent to the heads of government and non-government organizations to secure their participation.

To analyze the quantitative data, the researcher used percentages, frequencies, and weighted means. Each suggested response was given a numerical value to facilitate analysis. The ANOVA test was used, utilizing a four-point Likert scale with the following evaluation scales for each indicator:

- *Indicator 1 (Engagement)*: Very Low Engagement (VLE), Low Engagement (LE), High Engagement (HE), and Very High Engagement (VHE).
- *Indicator 2 (Implementation)*: Very Low Implementation (VLI), Low Implementation (LI), High Implementation (HI), and Very High Implementation (VHI).
- *Indicator 3 (Challenges)*: Minimal Challenge (MiC), Moderate Challenge (MoC), Strong Challenge (SoC), and Very Strong Challenge (VsC).

For the qualitative data from the questionnaire, the researcher used thematic analysis. This involved systematically identifying, analyzing, and reporting recurring patterns or themes within the data. This study adhered to ethical standards for research involving human participants. A letter of introduction was provided to all respondents, emphasizing the non-disclosure of any personally identifiable information or organizational affiliations. The purpose of the study was communicated as being solely for academic purposes, and confidentiality was strictly observed throughout the research process. The final output was published on a research website with the endorsement of Benguet State University–Open University (BSU-OU), in fulfillment of course requirements.

3 Results and Discussion

3.1 Engagement of the Employer and Employees in the Implementation of the OSH Program

Micro-business firms showed relatively high engagement overall, but their involvement hovered near the minimum threshold for OSH program implementation, indicating limited participation in key areas critical to growth and development. The data showed some OSH areas indicated strong compliance and effective implementation of basic safety measures such as safe workplace management, compliance with safety equipment standards, hazard identification, OSH compliance, and job safety orientation. These implied a significant area of focus and strength within the studied establishments. Moreover, the very high engagement of microbusiness enterprises can be attributed to a strong safety culture, active management involvement in OSH implementation, high worker awareness and participation, and a systematic approach to safety compliance. These factors collectively foster a workplace environment where employees are informed, proactive, and consistently engaged in maintaining occupational health and safety standards.

A strong commitment from management is essential for creating a safe workplace. When leaders prioritize health and safety, it reduces hazards, improves employee morale, and ultimately leads to fewer injuries (Pandey, 2024). Proactive management not only lowers injury rates but also encourages workers to participate in safety initiatives, fostering a culture of open communication and collaboration (Nayak & Raghatate, 2024). By identifying risks early and implementing protective measures, companies can maintain a hazard-free environment and promote a sense of shared responsibility for safety (Sarankarthik & Chitra, 2024). However, microbusinesses often face significant challenges in meeting safety regulations. Many small-scale companies struggle with a lack of resources and inadequate infrastructure, which results in only moderate compliance (Ayeni & Olagoke-Komolafe, 2024).

Table 1. The level of engagement of the employer and employees in the implementation of the OSH program

Level of Engagement Indicators	Mean	Rank	Description
1. Management furnishes the workers with a place of employment free from hazardous conditions that cause or are likely to cause death, illness, or physical harm to them.	3.64	.51	Very High Engagement
2. The management gives complete job safety instructions or orientation to all the workers, especially those entering the job for the first time, including those familiarizing themselves with their work environment.	3.34	.55	Very High Engagement
3. The management informs the workers of the hazards associated with their work health risks to which they are exposed.	3.36	.54	Very High Engagement
4. The management informs the workers of the preventive measures to eliminate or minimize the risks and steps to be taken in cases of emergency	3.24	.54	High Engagement
5. The establishment uses only approved devices and equipment for the workplace. Gumagamit lamang ang establisyemento ng mga aprubadong kagamitan at kagamitan para sa lugar ng trabaho.	3.42	.58	Very High Engagement
6. The establishment complies with OSH standards, including training in medical examination and, where necessary, provision of protective and safety devices (personal protective equipment)	3.35	.59	Very High Engagement
7. The management allows workers and their safety and health representatives to participate actively in the process of organizing and planning the safety and health program to improve safety and health	2.74	.68	High Engagement
8. The management allows workers and their safety and health representatives to participate actively in the process of implementing the safety and health program to improve safety and health in the workplace.	2.74	.67	High Engagement
9. The management allows workers and their safety and health representatives to participate actively in the process of evaluating the safety and health program to improve safety and health in the workplace.	2.73	.65	High Engagement
10. The management provides workers to deal with emergencies and accidents such as:			
a. Workers to engage in first-aid arrangements.	2.44	.84	Low Engagement
b. Every worker participates in ensuring compliance with OSH standards in the workplace.	2.72	.69	High Engagement
c. Every worker makes proper use of all safeguards and safety devices Furnished for the workers' protection.	3.09	.57	High Engagement

d. A worker observes safety instructions to prevent accidents or imminent dangerous situations in the workplace.	3.03	.53	High Engagement
e. Every worker observed all prescribed steps to be taken in case of emergency	2.93	.50	High Engagement
11. The establishment has safety signage to warn the workers and the public of the hazards in the area.	2.20	1.09	Low Engagement
11. The establishment has safety devices to warn the workers and the public of the hazards in the area.	2.09	1.07	Low Engagement
13. The management provides workers with adequate and suitable information on safety and health hazards.	2.81	.69	High Engagement
14. Management provides workers with appropriate measures to prevent, control, and protect against those hazards.	3.01	.53	High Engagement
OVERALL	2.94	.43	High Engagement

While some have successfully implemented safety practices through leadership and training, resource limitations and a lack of awareness remain major obstacles to achieving optimal safety. Additionally, training programs and regulatory frameworks, such as those from the Occupational Safety and Health Administration (OSHA), are crucial. They inform employees about workplace dangers and their rights to a safe environment, which helps to reduce accidents and injuries (Oyeshola & Hussain, 2023). Although workers have a basic understanding of emergency procedures, this knowledge needs to be reinforced through further training. While worker compliance with safety measures and information was inconsistent, it's clear there is a need for better communication strategies and greater employee participation. This suggests that while some employees are highly engaged in safety programs and show initiative, there's significant room for improvement in overall OSH practices. Specifically, areas like accident prevention, consistent worker compliance, and the delivery of safety information require substantial attention. This highlights the need for stronger emergency preparedness and stricter adherence to safety protocols among all workers. In essence, while employee engagement reflects their current awareness of OSH practices, sustained participation requires intentional behavioral shifts—supported by structured training, consistent reinforcement, and clear communication. To ensure safety in the workplace, industries could focus on accident prevention and disaster preparedness. Effective strategies involve systematic planning, risk assessment, and using technology to reduce hazards (Pandey, 2024). Simulation-based training has been shown to significantly improve emergency response skills, making it a valuable tool for enhancing preparedness (Salas et al., 2018). A successful emergency response also relies on strong team collaboration and cognitive ability. By prioritizing the development of team cognition, industries can ensure their staff is ready to respond to crises in a timely and effective manner. Recognizing the importance of these relationships supports informed decision-making and enables the development of targeted training programs that enhance team communication and maturity (Esmaeili et al., 2025). Enhancing worker compliance with safety measures is also critical for employee well-being and operational efficiency. Effective compliance programs, which go beyond legal requirements can be improved through clear communication, comprehensive safety training, and changes to the work environment (Al-Ibyari, 2017; Mujtaba, 2023). In construction, for instance, stricter enforcement of safety measures, clear communication of protocols, and motivating workers to report incidents have been shown to improve compliance (Zakariyyah et al., 2023). Finally, effective safety communication is important for micro-businesses, which often lack the resources of larger companies (Schulte et al., 2018). Tailored communication strategies that address unique settings and constraints are essential for improving OHS practices (Yazdani et al., 2018).

The findings revealed low worker engagement with the OSH program, indicating minimal involvement. In particular, emergency preparedness measures, such as first-aid arrangements, safety signage, and warning devices, received notably poor scores. These results highlighted significant deficiencies in worker participation in OSH processes and the adequacy of safety infrastructure. Low

engagement in the OSH program among workers can be attributed to several interrelated factors observed in the findings. While some indicators reflect strong compliance and high engagement, other areas—such as emergency preparedness, worker compliance with safety measures, and the effectiveness of safety information—show notable deficiencies, suggesting that engagement is inconsistent and requires reinforcement. These deficiencies indicated awareness and some level of participation but lacked comprehensive involvement due to limited reinforcement, inconsistent adherence, and inadequate dissemination of safety protocols. Overall, partial engagement is likely driven by a combination of insufficient training, weak reinforcement of OSH practices, inconsistent compliance, and gaps in safety communication. Addressing these factors through enhanced training, stricter implementation of safety measures, and improved communication strategies would be crucial in transforming partial engagement into full commitment to OSH standards.

Emergency preparedness, particularly first aid, is crucial for micro-businesses, which often struggle with limited resources and insufficient knowledge (Egbelakin et al., 2018). Having a solid plan ensures legal compliance, protects employees, reduces panic during emergencies, and enhances overall business resilience (Fischer et al., 2019; Tharshanth et al., 2020). This proactive approach enables timely incident response, minimizes harm, supports smoother recovery, and aligns with stakeholder expectations while reducing liability risks (Norman, 2018). Additionally, safety posters and signs are a simple yet effective way to improve workplace safety. They act as continuous reminders, encouraging employees to follow safety protocols and promoting a strong safety culture (Harianto et al., 2019). Research even shows that these visual cues can positively influence safety behaviors and hazard awareness, even when workers are not consciously focused on them (Reis et al., 2023). Ultimately, maintaining a safe workplace is crucial for success, as it leads to fewer accidents, happier employees, and better business results. In contrast, unsafe environments can lead to significant financial costs and negatively impact employee health (Tedone et al., 2022).

ANOVA results revealed significant differences in employee engagement with the OSH program based on job position, with managers demonstrating the highest levels of involvement, underscoring the pivotal role of leadership for effective implementation. However, a significant gap was found with rank-and-file employees, who showed much lower engagement. This indicates a key area for improvement, as active worker participation is essential for an effective safety system. The findings suggest that to build a more inclusive safety culture, it's important to address this gap and create strategies that encourage greater involvement from all employees, particularly those in non-managerial roles. Effective leadership is crucial for fostering a positive safety climate and enhancing overall safety performance. Leaders who apply effective influence strategies enhance safety outcomes and substantially reduce injury rates. To achieve this, companies should establish a dedicated safety team and implement robust OSH management systems. A strong safety policy is considered one of the most effective ways to boost employee safety, and investments in safety often lead to better financial performance and a stronger corporate reputation (Bautista-Bernal et al., 2024). There is also a strong link between employee satisfaction and safety performance. When management shows a clear commitment to safety, employee happiness improves, which in turn reduces workplace incidents (Bayram, 2018). Furthermore, effective safety leadership (SL) and a positive safety climate (SC) are intrinsically linked to greater safety participation (SP) from employees (Zhao et al., 2022). Leaders who use strategies like coaching and role modeling are particularly effective in driving compliance and encouraging active participation in safety (Kim & Gausdal, 2020). This is supported by research showing that management's commitment to OHS has a direct and positive relationship with employee satisfaction (Puspitarini & Martiana, 2024). Proactive hazard identification and risk assessment are also considered fundamental components of a strong safety management system (Reason, 2016). In micro-businesses, however, a significant safety culture gap often exists between management and rank-and-file employees. This is often due to a lack of systematic safety operations and insufficient engagement from senior management, which hinders the development of a strong safety culture (Argüello-López et al., 2019). Top management in these smaller companies may lack maturity in safety culture, affecting their willingness to support safety measures and collaboration

(Lal, 2022). These businesses also often lack specialized safety personnel, leading to reactive rather than proactive safety management (Al-Bayati et al., 2023). Although regular safety briefings could increase employee engagement, they are often underutilized in micro-businesses (Juarsa et al., 2023). However, the informal structure of these businesses can allow for faster decision-making, which may lead to innovative safety solutions that larger organizations might miss.

Significant differences were found in engagement with OSH programs across different types of businesses. Food processing and retail businesses showed the highest engagement, likely due to stricter regulations. In contrast, general merchandise and handicraft/arts businesses had significantly lower engagement, which suggests gaps in their safety protocols despite the inherent risks. The findings also indicated that OSH engagement varies significantly based on the number of years a business has been operating. The food industry faces a high risk of occupational injuries due to the strenuous and repetitive nature of the work (Koushika & Nandita, 2021). As a result, this sector, particularly food processing and retail, shows high engagement with OSH programs. This commitment is largely driven by strict regulatory oversight and the need to mitigate risks, which has led to a significant reduction in workplace incidents (Szczyrba & Szataniak, 2024). Many food businesses have also implemented written health rules to prevent foodborne illnesses, with a near-unanimous agreement on the necessity of these regulations among employees (Arendt et al., 2024). In contrast, sectors like general merchandise and handicraft/arts businesses show much lower OSH engagement, indicating significant gaps in their safety protocols despite inherent risks. This lack of engagement in micro-enterprises is often due to limited resources and informal business networks, which can lead to inadequate safety training and a higher risk of workplace violence (Bruening et al., 2015). A key factor in improving safety is employee engagement. When employees feel a sense of ownership over safety, shifting from a "they own safety" to a "we own safety" mindset, it creates a more proactive safety culture (Knode, 2020). However, many employees feel disconnected from safety programs, which limits their participation. Research indicates that low engagement is often a result of insufficient management commitment and resources (Bayram et al., 2023). By focusing on employee involvement through safety culture assessments, companies can identify and overcome these barriers to participation (Knode, 2024).

The findings further revealed that OSH engagement significantly differs based on years of experience, suggesting important implications for occupational safety and health practices. Specifically, long-tenured employees (more than 15 years) exhibit the highest engagement, potentially due to their accumulated knowledge and experience with OSH protocols. Mid-career employees (11-15 years) exhibit the lowest engagement, suggesting potential disengagement or lack of incentives. Studies consistently show a strong link between work experience and safety engagement. Experienced workers generally have fewer accidents, higher compliance with safety rules, and a better understanding of safety protocols (Hoebbel et al., 2022). This experience positively influences both routine safety performance and emergency response skills. According to Ghofur et al. (2024), experienced employees' involvement in safety decisions can improve the overall safety culture. A study by Bilim (2025) found that the likelihood of occupational accidents decreases as a worker's experience increases. The research suggests that targeted interventions and training programs, especially for younger and less experienced workers, are crucial for preventing accidents. Additionally, workplace safety and employee training are key factors that directly impact overall work performance, as they help prevent accidents and increase employee productivity (Irawan et al., 2023). Despite the clear benefits of experience, data from a specific OSH program shows that it is only partially implemented, which is considered "low implementation." This indicates significant gaps in the program and suggests a heightened risk of workplace incidents due to inconsistent safety measures.

3.2 Implementation of the OSH Program

Partially implemented OSH programs consistently heighten workplace risk, indicating that businesses have adopted only a few essential safety practices and have low overall program implementation. Recent literature highlights that organizations with weak OSH management systems are more prone to accidents, injuries, and fatalities (Lay et al., 2017), while robust OSH practices are linked to lower rates of work-related incidents (Pratiwi & Ivanovic, 2022). Research on safety management practices indicated a strong link between safety training, worker involvement, management commitment, and the reduction of occupational accidents through improved compliance (Ajmal et al., 2022). Conversely, inadequate implementation of safety programs significantly increases the risk of workplace injuries and fatalities. The absence of safety regulations, clear guidelines, and designated safety personnel presents a major barrier to effective OSH program implementation, which could elevate accident risk (Al-Otaibi & Kineber, 2023). Economic evidence also supports OSH investment, with safer workplaces yielding returns that exceed the costs of accidents and injuries (ASEAN, 2023). Classification of an OSH program as "Partially Implemented" strongly indicates a failure to consistently apply necessary safety measures, thereby creating an environment where the risk of workplace incidents is demonstrably higher, a conclusion well-supported by contemporary research. One of the findings showed a very high implementation level, highlighting positive aspects of the OSH program. This suggests that the business establishment has fully implemented the OSH program, and all employees are aware of and comply with the safety procedures.

Notably, the availability of fire extinguishers received the highest compliance, indicating a strong commitment to emergency equipment preparedness. In the Philippines, the Fire Code of the Philippines of 2008 mandates that all establishments maintain the availability of fire extinguishers as part of their fire safety measures. This law is enforced by the Bureau of Fire Protection (BFP) and outlines specific requirements for fire prevention, suppression, and safety compliance (BFP, 2009). The availability and maintenance of fire extinguishers are key components of emergency preparedness, demonstrating a commitment to safety with current standards and regulatory requirements. Keeping fire extinguishers properly maintained is not only a matter of compliance but also a factor in improving the safety of individuals and property in various environments, such as healthcare facilities and factories. Fire extinguishers must be provided in appropriate quantities based on building size and risk factors, as required by fire safety laws. They should be located near potential fire sources to provide visibility and easy access during an emergency (Garcia-Martin et al., 2019). When stress impairs perception and cognitive function, the visibility of fire extinguishers is crucial. In the Philippines, fire codes ensure that extinguishers are accessible by specifying requirements for display methods, height standards, and visibility (Capistrano et al., 2016). Meanwhile, some indicators showed a high level of implementation, such as the foundational safety efforts in the regular conduct of risk assessments and hazard identification, which reflect established foundational efforts in proactively managing workplace risks.

Table 2. The level of implementation of the OSH program by the establishment

	Mean	SD	Description
1. The establishment has a formal, written OSH policy that outlines its commitment to safety and health.	2.28	.75	Low Implementation
2. The OSH policies are readily accessible to all employees	2.05	.82	Low Implementation
3. The OSH policies and procedures are regularly reviewed and updated to reflect changes in regulations.	2.30	.72	Low Implementation
4. The OSH procedures are readily accessible to all employees.	1.98	.82	Low Implementation
5. The establishment conducts regular risk assessments to maintain a safe and healthy work environment.	2.75	.67	Implemented

6. Potential hazards are identified and assessed regularly in the workplace.	2.80	.58	High Implementation
7. Regular workplace inspections are conducted to identify and address hazards.	2.85	.56	High Implementation
8a. The establishment provides mandatory OSH training to all employees, such as First Aid	2.08	.97	Low Implementation
8 b The establishment provides mandatory OSH training, like Basic Occupational Safety and Health (BOSH) Training.	1.97	.90	Low Implementation
9. The OSH-related training programs are tailored to the specific needs and roles of employees.	2.29	.86	Low Implementation
10. The OSH records of undertakings are maintained to document training activities and employee participation.	2.13	.71	Low Implementation
11. The establishment has a written emergency plan that outlines procedures for responding to emergencies.	2.22	.67	Low Implementation
12. Regular emergency drills are conducted to test the effectiveness of the emergency plan.	1.85	.93	Low Implementation
13.a.Emergency equipment, such as any of the following, is/are readily available and maintained.	3.66	.65	Very High Implementation
Fire Extinguishers			
13.b.Emergency equipment, such as any of the following, is/are readily available and maintained.	2.05	1.15	Low Implementation
First-Aid Kits			
13.c.Emergency equipment, such as any of the following, is/are readily available and maintained.	2.90	1.36	High Implementation
CCTV			
14. The establishment maintains a system for reporting accidents and injuries.	2.82	.58	High Implementation
15. The accident and injury record is submitted to the Department of Labor and Employment (DOLE)	1.53	.77	Very Low Implementation
16. When any incidents happen, they are investigated to identify root causes and prevent future occurrences.	3.01	.80	High Implementation
OVERALL	2.40	.51	Low Implementation

These strengths, particularly the availability of emergency equipment and the commitment to incident investigation, demonstrate a baseline organizational commitment to providing essential safety infrastructure and engaging in problem-solving when incidents do occur. Investigating events to determine root causes is a critical component of a safety-conscious approach to avoiding future incidents. A root cause analysis (RCA) involves a detailed examination of the circumstances surrounding an incident, focusing not only on immediate causes but also on underlying systemic issues. By implementing RCA, businesses can develop corrective actions that address these deeper problems, thereby improving overall safety (Lee, 2024). Understanding the core reasons behind incidents enables a business firm to implement measures to prevent similar events from reoccurrence (Incident investigations, 2023). Regular risk assessments and hazard identification demonstrate a proactive effort to manage workplace dangers. This approach is crucial for detecting potential hazards and implementing effective risk mitigation strategies, which in turn enhance workplace safety and productivity. According to Gan (2019), hazard identification is the first step in risk management and is crucial for pinpointing potential workplace dangers, including physical, chemical, biological, ergonomic, and psychosocial hazards. Regular risk assessments then help determine the likelihood and severity of these identified dangers, allowing businesses to prioritize preventative measures (Gan, 2019; Adeyemo, 2024). This proactive approach to risk management improves workplace morale, productivity, and a company's reputation by demonstrating a commitment to employee safety (Hakim et al., 2023). Moreover, continuous assessments foster a safety culture by encouraging staff to follow safe practices and report concerns (Adeyemo, 2024).

Other critical results showed low implementation levels, implying that business establishments have implemented some OSH practices, but there are significant gaps in the program. For example, establishments may update their OSH policies, but if those procedures are not accessible to employees, their effectiveness is limited. Similarly, training deficiencies are notable; First Aid training and kits are often inconsistently available, which could compromise emergency response. Additionally, Basic Occupational Safety and Health (BOSH) training frequently falls below adequate levels. Emergency preparedness also remains weak, as emergency drills are rarely conducted, further exposing employees to safety risks. The low compliance in submitting accident records to the Department of Labor and Employment (DOLE) suggests significant gaps in regulatory adherence, which can lead to legal consequences for establishments. A lack of awareness, administrative inefficiencies, or a reluctance to disclose incidents due to fear of penalties or reputational damage may all contribute to this issue. Department Order No. 198, Series of 2018, mandates that establishments report workplace accidents to the Department of Labor and Employment (DOLE) for proper monitoring and enforcement of OSH standards. Failure to comply with this mandate, however, can result in fines or sanctions under the OSH Law (Republic Act No. 11058). Thus, businesses may struggle with documentation processes, which lead to delays or non-submission of reports. Addressing these shortcomings through enhanced policy dissemination, stricter enforcement, and increased training initiatives can significantly improve workplace safety standards.

Recent studies have highlighted similar trends. For example, Conda et al. (2024) analyzed OSH measures in the Philippines and found that while Republic Act 11058 has improved OSH programs, gaps in accessibility and training persist. Similarly, Barati Jozan et al. (2023) emphasized the effectiveness of e-training interventions in addressing workplace injuries and accidents, noting their adaptability and cost-effectiveness. These findings underscore the importance of consistent policy updates and comprehensive training programs to bridge existing gaps. These findings suggest that employees lack awareness of safety protocols, inadequate training increases the risk of accidents, non-compliance with OSH standards, and a lack of drills and first-aid kits that could worsen outcomes during crises. Likewise, there is a presence of systemic risks that expose the establishment to legal consequences and may lead to outdated practices that fail to address evolving hazards.

The ANOVA results obtained statistically significant differences in the level of implementation of OSH programs based on position in the business. Managers exhibit the highest level of OSH implementation, likely due to their oversight role in ensuring compliance. In contrast, rank-and-file employees have the lowest implementation levels, indicating a gap in translating policies into practice at the operational level. The gap in the execution of OSH programs between management and employees can be attributed to several factors, including organizational commitment, resource allocation, communication channels, and external influences. Senior management's commitments are crucial for the successful adoption of OSH policies. A lack of commitment from leadership often results in insufficient support for safety efforts (Kunodzia et al., 2024). Employees perceive a direct association between management's attention to OSH and their safety habits, with younger employees demonstrating a stronger relationship (Peciño, 2018). Limited financial resources impede the efficient implementation of OSH initiatives, as many firms prioritize compliance above proactive safety measures (Vega-Monsalve 2017). Thus, the emphasis on compliance may overshadow the importance of a proactive safety culture, resulting in superficial implementation of OSH initiatives that fail to engage employees meaningfully. This emphasizes the necessity of not only adhering to legal standards but also cultivating a true commitment to workplace safety.

The ANOVA results indicated statistically significant differences in the level of implementation of OSH programs across business types. The food processing and retail sector shows the highest level of OSH implementation, likely due to stringent regulatory requirements and the need for high safety standards in food handling. In contrast, agricultural micro-enterprises and handicraft/arts businesses have the lowest implementation levels, indicating potential resource constraints or a lack of formalized safety protocols. Adherence to regulatory standards is critical; businesses with specialized OSH departments frequently have superior safety outcomes (Occupational Safety Management,

Working Conditions, and Economic Performance, 2022). The implementation of occupational health and safety (OHS) systems in the food manufacturing sector is crucial for guaranteeing employee well-being, operational efficiency, and product safety, among other things. As a result, workplace mishaps have decreased significantly. Modernizing technology and improving workplace ergonomics also contribute to safer working conditions and operational efficiency (Szczyrba and Szataniak, 2024).

Welch's ANOVA results indicate a statistically significant difference in OSH program implementation based on the years of experience in the business. Employees with over 15 years of experience show the highest level of OSH implementation, likely due to their accumulated knowledge and familiarity with safety protocols. In contrast, employees with 11–15 years of experience have the lowest implementation levels, which could be due to disengagement or a lack of updated training during their tenure. The link between employee experience and adherence to safety regulations is well-documented; more experienced employees generally show higher levels of compliance because they have a greater understanding of workplace risks and safety measures. This adherence is crucial for creating a safer work environment and reducing accident rates. A study by Azielia and Dwiyaniti (2024) found a moderate correlation between safety skills and safe behavior, highlighting the importance of training and experience in improving safety practices.

Advanced safety leadership training programs enhance danger detection and proactive safety communication, reinforcing the idea that experience enhances safety adherence (Olise et al., 2025). The accumulation of knowledge about workplace dangers influences the safety behavior of experienced employees, affecting their attitudes and practices and leading to a safer work environment. Thus, employees' experience enhances understanding of safety regulations and hazard awareness, promoting safer behaviors and reducing accidents. Employees with strong safety knowledge tend to adopt positive safety attitudes, which are closely linked to safe practices. Comprehensive safety training is therefore essential, as it boosts safety knowledge and positively influences attitudes and behaviors (Zulkifly et al., 2024). A study by Rianreecha et al. (2024) confirmed that job experience has a substantial impact on safety behavior, highlighting the value of knowledge acquired over time. According to Marcia et al. (2024), safety behaviors operate as mediators between safety knowledge and workplace accidents, implying that higher safety knowledge leads to better safety practices, which in turn reduce accidents. As a result, while increased knowledge generally leads to better safety behaviors, certain employees may become complacent over time, thereby jeopardizing their adherence to safety rules. This underscores the importance of ongoing training and reinforcing safety measures to maintain high safety standards.

3.3 Challenges Faced by Micro-Business Establishments and Other Stakeholders

Micro-businesses in La Trinidad, Benguet, collectively face systemic barriers to implementing OSH programs. These businesses agree that their most pressing concerns are awareness gaps and compliance difficulties, highlighting a need for better education and stronger regulatory support. They also face structural challenges, such as budget limitations and the informal nature of many operations, which make it difficult to allocate resources and enforce safety rules. Furthermore, weak safety cultures and high workforce turnover create instability, making it hard to maintain consistent safety practices. The pressure to reduce costs, combined with inadequate risk assessment, often forces these businesses to choose between profitability and safety.

Results also showed that weak safety culture and high workforce turnover underscore instability in maintaining consistent safety practices, pressure to cut costs, and poor risk assessment revealed trade-offs between profitability and safety. This implies that a mix of training, financial aid, simpler regulations, and cultural shifts is essential to improve safety and support micro-business growth. Addressing these challenges can create safer workplaces while helping small businesses thrive.

Table 3. Challenges Faced by Micro-business Establishments in Implementing OSH Programs

	Mean	SD	Description
1. Micro-businesses often have limited budgets, making it challenging to invest in safety equipment and training.	2.88	.61	Strong Challenge
2. Many micro-business owners and employees may not be fully aware of OSH standards and the importance of workplace safety.	3.12	.70	Strong Challenge
3. Lack of management commitment to safety can lead to a weak culture where safety practices are not prioritized.	2.92	.60	Strong Challenge
4. Employees have inadequate safety and health-related training.	2.82	.62	Strong Challenge
5. Compliance with OSH regulations can be difficult due to limited knowledge and resources.	2.98	.47	Strong Challenge
6. High workforce turnover disrupts safety training and consistency in safety practices.	2.91	.50	Strong Challenge
7. Many micro-businesses operate in informal settings where OSH standards are harder to enforce.	2.95	.54	Strong Challenge
8. The pressure to remain competitive can lead to cutting corners on safety measures to save costs.	2.91	.47	Strong Challenge
9. Micro-businesses have difficulty in conducting appropriate risk assessment and hazard identification.	2.89	.52	Strong Challenge
10. There may be insufficient monitoring and enforcement of OSH standards in micro-businesses.	2.88	.56	Strong Challenge
OVERALL	2.92	.42	Strong Challenge

Research indicates that while awareness levels among workers can be commendable, practical compliance often falls short due to various barriers. This necessitates a multifaceted approach, education, and regulatory support to enhance OSH program effectiveness. Studies show that many workers possess a basic understanding of OSH principles, yet this awareness does not always translate into compliance (Frejoles et al., 2024; Coca et al., 2025). Enhancing training programs and updating regulatory frameworks are vital to bridge awareness and compliance gaps (Atusingwize et al., 2019). Implementing comprehensive safety plans tailored to specific workplace needs can also foster better compliance (Coca et al., 2025). Budget constraints and informal operations significantly hinder effective resource allocation and enforcement of OSH programs, impacting both the implementation of safety measures and the overall well-being of workers, particularly in informal sectors. Many informal sectors have limited financial resources, making it difficult to invest in critical safety equipment and training (Sanchez & Cuellar, 2022). Informal industries frequently lack the infrastructure to support full OSH initiatives, resulting in poor safety practices. Another cause is enforcement constraints, as informal labor falls outside the scope of formal legislation, resulting in insufficient enforcement of safety requirements. In the absence of effective OSH programs, informal workers have more occupational accidents and health difficulties (Levitsky, 2019). Another reason is a lack of training, such as a scarcity of qualified individuals to successfully implement and manage OSH initiatives, which is compounded by budget constraints (Sanchez & Cuellar, 2022; Citra et al., 2021). Employees' safety performance is often compromised by underreporting and low motivation to follow safety protocols. High turnover adds financial strain through recruitment costs and safety-related risks (Workplace Safety, 2022). Poor safety culture and frequent staff changes lead to inconsistent safety practices, hindering policy implementation and increasing occupational hazards (IntIfada, 2025).

Respondents in this study identified several organizations that provided support and assistance during the survey, including the DOLE, Philippine Red Cross (PRC), Rural Health Unit (RHU), and the Local Government Unit (LGU). Their involvement highlights the collaborative efforts between government agencies, healthcare institutions, and humanitarian organizations in addressing workplace safety and public health concerns. These organizations mentioned shared challenges they faced in implementing OSH programs. According to *DOLE*, enforcing occupational safety and health (OSH) in micro-businesses presents several challenges, including limited resources and technical capacity, as well as low awareness of OSH standards among small enterprise owners. Financial constraints often hinder the implementation of necessary safety measures, while insufficient personnel dedicated to OSH compliance further complicates matters. Geographical challenges also make conducting regular inspections difficult, and the informal nature of some micro-businesses creates obstacles in maintaining proper documentation. The *RHU* emphasized that enforcing OSH regulations among microbusiness enterprises poses challenges, particularly due to the absence of a dedicated OSH policy. The RHU has indicated that both policy and budget will be made available once the principles of OSH are crafted and integrated into a specific policy framework. This approach underscores the importance of developing targeted guidelines to address OSH concerns in the area.

In the *PRC*, there are no specific policies or programs aimed at promoting OSH awareness and compliance among micro-businesses in La Trinidad. Despite efforts to implement OSH policies, the *LGU of La Trinidad*, Benguet, is facing several challenges in regulating micro-businesses due to the absence of specific mandates.

One major concern is the lack of formal OSH policies, leaving establishments without clear guidelines for workplace safety. Additionally, the limited availability of OSH training and technical assistance programs hinders awareness and proper implementation. In the absence of internal standards, the LGU struggles to ensure consistent safety practices across micro-businesses, as measures vary widely and pose potential risks. Financial constraints further complicate enforcement, with smaller enterprises often unable to invest in safety equipment, training, or infrastructure. Regulatory enforcement remains a challenge, as the absence of formal policies prevents systematic compliance monitoring.

3.4 Opportunities to Improve the Implementation of OSH Programs

Addressing the challenges faced by various stakeholders requires a multifaceted and coordinated approach. Prioritizing training programs, financial support, and simplified regulations can help micro business establishments and their employees access the tools and resources needed to comply with OSH standards. Promoting a culture that values workplace safety at all levels can lead to lasting improvements in everyday practices. These efforts will not only create safer and more supportive work environments but also strengthen the capacity of small businesses and their workers to contribute meaningfully to inclusive and resilient economic development.

To address OSH challenges among micro-businesses, DOLE implements a range of support initiatives guided by Department Order No. 198, series of 2018. These include simplified OSH guidelines, free technical advisory visits, and Safety Officer 1 training tailored for MSMEs. DOLE also provides accessible resources such as manuals, toolkits, and assistance in forming workplace safety committees. Through a graduated enforcement approach, the agency emphasizes compliance assistance over penalties. Collaborative efforts with LGUs and regular consultations with industry associations help extend reach and foster dialogue. For specialized needs, referrals to accredited OSH practitioners are available. To promote best practices, DOLE also recognizes outstanding OSH implementation through the Gawad Kaligtasan at Kalusugan (GKK) Awards. The GKK is a national recognition program that promotes best practices in workplace safety and health across industries.

The PRC plays a vital role in advancing workplace safety and health through its accredited safety services. In partnership with DOLE, PRC serves as an official training provider, offering standardized programs in occupational and emergency first aid. These trainings equip workers with essential skills in basic life support, injury management, CPR, and the use of safety equipment, critical for effective emergency response and accident prevention. PRC's modules align with both local and international

safety standards, enhancing credibility and ensuring certified workers are recognized across industries. During the COVID-19 pandemic, PRC adapted its programs to include biohazard response, infection control, and mental health first aid, addressing emerging workplace risks. This collaboration with DOLE not only supports regulatory compliance but also fosters a culture of safety and preparedness. By investing in employee well-being through accessible training, PRC contributes to safer, healthier workplaces nationwide.

According to the RHU, there are currently no formal written OSH standards specifically tailored for micro-businesses in La Trinidad, Benguet. While infection prevention and control measures are routinely implemented as part of general health policy and practice, these do not constitute a dedicated OSH framework. Micro-businesses in the area lack access to a structured program for OSH training and technical assistance. Instead, OSH principles are informally embedded within the RHU's broader health initiatives. This gap shows the need for local, accessible, and sector-specific initiatives to improve workplace safety in small-scale enterprises.

Despite challenges, La Trinidad, Benguet, has several opportunities to enhance workplace safety. The local government can integrate Occupational Safety and Health (OSH) principles into existing programs such as Disaster Risk Reduction and Management (DRRM) and Hazard Identification, Risk Assessment, and Control (HIRAC) training. These initiatives, along with regular first aid drills and annual medical exams, provide a strong foundation. By building on these existing efforts, the local government can develop tailored OSH policies that improve compliance and create safer working environments for micro-businesses.

4 Conclusions

In micro-businesses, effective engagement from both employers and employees is essential in improving workplace safety, reducing accidents, and enhancing productivity. However, this is hindered by several factors, including a lack of awareness, insufficient training, and limited resources. There are significant disparities in engagement across different business positions and types. While leadership often shows a strong commitment to implementing Occupational Safety and Health (OSH) programs, rank-and-file employees exhibit lower participation, creating a disconnect that undermines a strong safety culture. Industries with greater regulatory scrutiny, such as food processing and retail, showed higher compliance, while others, like agriculture and handicrafts, struggle due to financial and structural limitations. Employee experience also plays a role, with long-tenured employees often adhering to OSH protocols better than mid-career employees, who may lack updated training or motivation. Systemic barriers for micro-businesses in La Trinidad, Benguet, include financial constraints and inconsistent enforcement. While the DOLE and the local government provide valuable support through training and technical assistance, the absence of specific OSH policies and resource limitations complicates comprehensive compliance. Addressing these challenges requires strengthening regulatory support, increasing access to training, and fostering collaboration among all stakeholders to create a cultural shift toward valuing workplace safety. By bridging these gaps, micro-businesses can enhance safety, boost morale, and improve overall success.

To boost Occupational Safety and Health (OSH) engagement and overcome systemic barriers, a multifaceted approach is essential, starting with employers. Businesses should launch awareness campaigns and provide robust training to both management and employees to ensure a clear understanding of safety protocols. Fostering open communication and introducing incentive systems can reinforce positive behavior and improve participation. Customized engagement strategies tailored to employee levels, such as peer-led safety advocacy, refresher training for mid-career staff, and mentorship by long-tenured employees, can address disparities in participation and strengthen safety culture. Government and industry associations should provide financial assistance, technical support, and simplified compliance frameworks to help small enterprises meet OSH standards without compromising financial stability. Regulatory bodies should develop sector-specific guidelines and accessible training programs, especially for new businesses. Mentorship and voluntary certification

programs can also help industries with limited enforcement. LGUs should craft localized OSH policies, establish monitoring systems, and collaborate with national agencies like DOLE to bridge resource gaps. Community-driven safety programs and feedback mechanisms can further enhance engagement and compliance. DOLE is encouraged to expand tailored guidelines, increase funding, and strengthen partnerships with LGUs and community groups. PRC can promote its training programs, seek accreditation for advanced OSH courses, and support LGUs through community drills. RHUs may advocate for OSH policy development and integrate safety awareness into health initiatives. A province-wide study is recommended to assess OSH engagement across sectors and refine intervention strategies. Additionally, DOLE should develop a digital platform to streamline business registration, provide OSH resources and training, and offer broader support in financial management and business development.

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