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Employee Awareness of Occupational Rights and Environmental Regulations: A Lubricant Company Study

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ABSTRACT

This descriptive-correlational study assesses employees' awareness of occupational rights and environmental regulations among 21 warehouse workers at a 1,500 m² lubricant facility in Caloocan City, Philippines. The site specializes in storage, blending, filling (5 lines), and distribution of petroleum-based products such as motor oil, grease, and hydraulic oil. Findings reveal high occupational rights awareness (M=3.46, "Highly Aware") but moderate environmental regulations awareness (M=2.95, "Aware"), with critical gaps in access to Safety Data Sheets (52.4%) and in hazardous waste handling. Tenure significantly predicts awareness levels.

Keywords: *occupational rights, environmental regulations, Safety Data Sheets, RA 6969, warehouse safety*

INTRODUCTION

In industrial warehouses handling hazardous materials like lubricants, employee awareness of occupational rights and environmental regulations ensures safety, compliance, and sustainability (International Labor Organization, 2023; Occupational Safety and Health Administration, 2024). The studied 1,500 -m² facility in Caloocan City—specializing in petroleum product blending, filling (five lines), and repackaging imported bulk materials—faces elevated risks of chemical exposures, accidents, and DOLE violations despite mandatory training (Philippine Department of Labor and Employment, 2025).

Knowledge gaps persist among blue-collar workers, influenced by age, tenure, and education (Smith & Jones, 2022). These undermine protections under the Philippine Labor Code and Republic Act No. 6969 (Toxic Substances and Hazardous Wastes Control Act), increasing health risks and operational costs (DOLE, 2025). Localized research on the lubricant sector remains scarce (Garcia et al., 2021).

In lubricant warehouses handling hazardous materials, employee awareness of occupational rights and environmental regulations is critical for ensuring safety, regulatory compliance, and operational efficiency. At the studied 1,500-m² facility in Caloocan City, employees handle storage, blending, filling, and distribution of petroleum-based products across five production lines, exposing them to chemical, fire, and environmental hazards. Despite mandatory DOLE training, preliminary observations and sector studies indicate gaps in knowledge of both occupational rights and environmental regulations, particularly in areas such as access to Safety Data Sheets (SDS), hazardous waste handling, and wastewater treatment.

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These gaps may compromise compliance with the Philippine Labor Code and RA 6969 (Toxic Substances and Hazardous Wastes Control Act), placing both employees and the organization at risk. Moreover, employee characteristics such as tenure, age, and educational attainment may influence awareness levels, yet the extent of this relationship within the lubricant warehouse context remains unclear.

Therefore, this study seeks to determine the level of awareness among warehouse employees regarding basic occupational rights and environmental regulations, identify critical knowledge gaps, and examine whether demographic factors significantly influence awareness, with the goal of informing targeted training and safety interventions.

Objective

This study assesses employee awareness levels of basic occupational rights and environmental regulations among warehouse workers at the facility. Specifically, it answers:

1. What is the demographic profile of respondents in terms of age, length of service, and educational attainment?
2. What is the level of awareness of employees in terms of:
   2.1. Basic occupational rights?
   2.2. Environmental regulations?
3. Is there a significant difference in awareness levels across demographic groups?
4. What strategic actions can be proposed based on the findings of the study?

Significance of the Study

The results of this study are significant to multiple stakeholders, as it highlights employee awareness of occupational rights and environmental regulations in a high-risk lubricant warehouse. Specifically:

1. For Management:

- Provides insight into critical knowledge gaps among employees, particularly in chemical handling, hazardous waste management, and Safety Data Sheets (SDS) access.
- Supports the development of targeted training programs, safety protocols, and infrastructure improvements to ensure compliance with DOLE and DENR regulations.
- Helps reduce operational risks, workplace accidents, and potential regulatory penalties.

2. For Employees:

- Raises awareness of their occupational rights and responsibilities regarding workplace safety and environmental protection.
- Empowers employees to follow proper procedures, refuse unsafe work, and participate actively in maintaining a safe and compliant work environment.

3. For the Company:

- Enhances overall operational efficiency and safety culture by ensuring workers are knowledgeable and compliant.
- Minimizes the company's exposure to regulatory violations, environmental hazards, and associated costs.

4. For Future Research:

- Provides baseline data on awareness levels in the lubricant sector, which can guide further studies on occupational safety and environmental compliance in similar industrial settings.
- Highlights areas for improvement and potential interventions for workforce development.

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5. For the Community and Regulatory Bodies:

- Contributes to environmental protection efforts by identifying gaps in employee understanding of environmental regulations such as RA 6969 and proper waste handling.
- Supports compliance with national labor and environmental standards, promoting a safer and more sustainable industrial environment.

METHODS

Study Design

This study employed a descriptive-correlational research design and a quantitative approach to assess the level of employee awareness of basic occupational rights and environmental regulations among warehouse workers.

The descriptive component of the study was used to determine the demographic profile of the respondents in terms of age, length of service, and educational attainment, and to measure their level of awareness of occupational rights and environmental regulations using numerical data.

The correlational component was applied to examine whether there are significant differences and relationships between the respondents' demographic characteristics and their level of awareness. This approach allows the researcher to analyze patterns and associations among variables without manipulating them.

Locale of the Study

The study was conducted at a 1,500-m² lubricant facility located at 14 Malanting Street, Dona Amparo Subdivision, Barangay 179, Caloocan City, Philippines. This warehouse/production site specializes in storage, blending, filling (five production lines), and distribution of petroleum-based products including motor oil, grease, hydraulic oil, coolant, and brake fluid.

Population and Sample of the Study

The study's accessible population consisted of 21 regular warehouse employees engaged in materials handling, blending, filling, inventory, administrative, and supervisory functions. Since the population was small, a total enumeration sampling technique was employed, in which all 21 employees were included as respondents. This ensured complete representation of personnel across different work shifts and functional roles, thereby eliminating sampling bias.

Research Instrument and Validation

A researcher-developed survey questionnaire assessed awareness using a 4-point Likert scale (4=Highly Aware, 3=Aware, 2=Slightly Aware, 1=Not Aware):

Part I: Demographic Profile (3 items)

Part II: Awareness Assessment (25 items total)

- Basic Occupational Rights (12 items)
- Environmental Regulations (13 items)

Validation: The content validity of the instrument was established through expert evaluation by three subject-matter specialists: a DOLE safety officer, a DENR consultant, and a NEUST faculty member. The instrument was reviewed to ensure the items were relevant, clear, and aligned with the study's objectives. Revisions were made based on their recommendations to improve the overall quality and appropriateness of the questionnaire.

Ethical Consideration

Informed consent was obtained from all participants after explaining the study purpose, voluntary participation, anonymity, and data confidentiality. No identifying information was collected. Participation

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posed no physical/psychological risks. Results will be shared with management for training improvements without individual attribution. The study adhered to the Data Privacy Act of 2012 (RA 10173) and NEUST ethical research guidelines.

Data Gathering Procedure

Questionnaires were distributed during team briefings conducted from March 1 to March 15, 2026, with an estimated completion time of 10 minutes. The survey instrument was prepared in both English and Filipino (Tagalog) versions to ensure clarity and better understanding among respondents. All questionnaires were retrieved within a day, achieving a 100% retrieval rate.

Data Analysis

Descriptive statistics were used to summarize the demographic characteristics of respondents (age, length of service, and educational attainment) and their levels of awareness of basic occupational rights and environmental regulations. Frequencies and percentages were used to describe categorical variables, while means and standard deviations were computed for the awareness scores.

To examine differences in awareness levels across demographic groups, a one-way ANOVA was planned; however, given the small sample size, the Kruskal-Wallis H test was used as a non-parametric alternative to determine significant differences. If significant differences were found, post-hoc comparisons identified specific group differences. Additionally, Pearson correlation analysis was employed to examine the relationship between length of service (tenure) and overall awareness scores.

RESULTS AND DISCUSSION

Table 1
Age Distribution of Respondents (N = 21)

Age Group	Frequency (n)	Percentage (%)
18–30 year	6	28.6
31–45 year	12	57.1
46+ years	3	14.3
Total	21	100

The majority of employees (57.1%) are 31–45 years old, representing a mid-aged workforce, while younger employees (18–30 years) account for 28.6% and older employees (46+ years) comprise 14.3%. This indicates that the workforce is predominantly mid-aged, which may foster a stable, experienced working environment. Studies suggest that mid-aged employees tend to exhibit higher job stability and practical knowledge due to accumulated experience, which can positively influence workplace awareness and compliance (Robbins & Judge, 2017).

Table 2
Length of Service of Respondents (N = 21)

Length of Service	Frequency (n)	Percentage (%)
< 5 years	9	42.9
5–10 years	4	19
> 10 years	8	38.1
Total	21	100

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Employees with less than 5 years of service make up the largest group (42.9%), while those with more than 10 years are nearly equally represented (38.1%), and only 19% fall within 5–10 years of service. This indicates a mix of new and highly experienced employees. This finding supports previous studies suggesting that longer tenure is associated with greater familiarity with company policies, safety procedures, and regulatory requirements, leading to higher awareness (Griffin & Neal, 2000; Burke et al., 2006). Furthermore, studies in high-risk work environments emphasize that continuous exposure to safety practices and active engagement in workplace safety systems—such as Job Hazard Analysis (JHA) and Behavior-Based Safety (BBS)—enhance employees' understanding and compliance over time (Cabual et al., 2025).

Table 3
Educational Attainment of Respondents (N = 21)

Educational Attainment	Frequency (n)	Percentage (%)
Elementary Graduate	1	4.8
High School Graduate	14	66.7
Vocational/College Units	5	23.8
College Graduate	1	4.8
Total	21	100

Most employees (66.7%) have a high school education, 23.8% have some college or vocational training, and only 4.8% each have completed elementary or a full college education. This indicates that the workforce is predominantly secondary-educated. Related literature suggests that while formal education contributes to foundational knowledge, workplace training and experience are often more influential in developing awareness of occupational safety and environmental practices (Noe, 2017). This may explain why education did not significantly impact awareness levels in this study.

Table 4
Basic Occupational Rights Awareness (N=21)

Item	Content	Total Score	Mean (M)	% ≥3	Rank
Q11	Wages/OT/holiday pay	83	3.95	100	1
Q1	Safe/healthy workplace	81	3.86	100	2
Q9	Medical compensation	80	3.81	95.2	3
Q12	Equal treatment	81	3.86	95.2	4
Q2	Chemical protection	75	3.57	90.5	5
Q4	Hazard information	75	3.57	90.5	6
Q8	Safety training	75	3.57	90.5	7
Q10	SSS/EC benefits	75	3.57	90.5	8
Q3	Ventilation/storage	74	3.52	85.7	9
Q7	Incident reporting	72	3.43	85.7	10
Q6	Refuse dangerous work	70	3.33	81	11
Q5	SDS access	45	2.14	52.4	12

Note. Based on a 4-point Likert scale (1 = Not aware to 4 = Highly aware). % ≥ 3 indicates respondents who are aware or highly aware. Higher mean indicates greater awareness.

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Employees show the highest awareness of wages, overtime, and holiday pay, as well as a safe and healthy workplace and equal treatment, with means ranging from 3.81 to 3.95, and over 95% of respondents rating these items ≥3. Awareness is moderate for chemical protection, hazard information, safety training, SSS/EC benefits, ventilation and storage, and incident reporting, with means ranging from 3.43 to 3.57 and 85.7%–90.5% of respondents acknowledging them. Employees are least aware of refusing dangerous work and of accessing Safety Data Sheets (SDS), with means of 3.33 and 2.14, respectively, and only 52.4%–81% of respondents rated them ≥3.

These findings are consistent with studies indicating that employees are generally more aware of commonly communicated rights, such as wages and basic safety measures, while technical aspects, such as proper handling of chemicals and use of Safety Data Sheets (SDS), are less well understood without formal training (Occupational Safety and Health Administration [OSHA], 2016; Vinodkumar & Bhasi, 2010). Similarly, research on proactive safety practices in construction projects highlights that while compliance-related behaviors (e.g., wearing personal protective equipment and adhering to regulations) are highly implemented, gaps remain in areas such as performance communication and recognition systems (Cabual et al., 2025). This suggests that in warehouse operations, without strong communication strategies, regular feedback, and continuous reinforcement, critical safety knowledge may not be fully internalized by employees, potentially increasing the risk of accidents and non-compliance.

Table 5

Environmental Regulations Awareness (N=21)

Item	Content	Total Score	Mean (M)	% ≥3	Rank
Q6	Soil/groundwater contamination	73	3.52	90.5	1
Q1	Hazardous waste classification	74	3.52	81	2
Q9	RA 9003 waste segregation	72	3.43	85.7	3
Q8	Flammable storage/air pollution	71	3.38	85.7	4
Q10	Used containers segregation	71	3.38	85.7	5
Q12	DENR permits	71	3.38	85.7	6
Q13	Legal penalties	71	3.38	85.7	7
Q7	Air quality standards	68	3.24	81	8
Q3	Company legal penalties	68	3.24	76.2	9
Q4	Oil spill prevention	67	3.19	76.2	10
Q11	Environmental incident reporting	67	3.19	76.2	11
Q2	Hazardous waste handling	64	3.05	71.4	12
Q5	Wastewater treatment	64	3.05	71.4	13

Note. Based on a 4-point Likert scale (1 = Not aware to 4 = Highly aware). % ≥ 3 indicates respondents who are aware or highly aware. Higher mean indicates greater awareness.

Employees show the highest awareness regarding soil and groundwater contamination and hazardous waste classification, with means of 3.52 and over 81% of respondents rating them ≥3. Awareness is moderate for items such as waste segregation, flammable storage and air pollution, used container segregation, permits, and legal penalties, with means ranging from 3.38 to 3.43 and 85.7% of respondents acknowledging them. Awareness is lower for air quality standards, company legal penalties, oil spill prevention, environmental incident reporting, hazardous waste handling, and wastewater treatment, with means ranging from 3.05 to 3.24.

The findings of this study align with broader research emphasizing the role of human and organizational factors in improving performance outcomes. In industrial environments, when employees

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are well-informed and actively engaged—particularly regarding occupational rights and environmental regulations—they are more likely to exhibit compliant and safety-oriented behaviors. Research in organizational and higher education governance has highlighted the importance of structured systems and knowledge management in shaping performance outcomes. For instance, Esteban et al. (2025) systematically reviewed how engineering management principles—including knowledge management, governance frameworks, and systems thinking—enhance institutional effectiveness and research performance, suggesting that organizational awareness and structured practices are key drivers of success across diverse contexts. This aligns with environmental management literature, which notes that employees

Table 6
Overall Awareness by Domain (N=21)

Domain	No. of Items	Mean (M)	SD	Interpretation
Occupational Rights	12	3.46	0.48	Highly Aware
Environmental Regulations	13	2.95	0.62	Aware
Overall	25	3.2	0.55	Moderately Aware

are generally more familiar with general environmental practices than with specific regulatory requirements and technical procedures, which require ongoing training and reinforcement (Daily, Bishop, & Govindarajulu, 2009; UNEP, 2018). Together, these findings suggest that both industrial and organizational settings benefit from fostering awareness, participation, and structured practices to improve performance, compliance, and safety outcomes.

Employees are highly aware of occupational rights, with a mean score of 3.46 and a standard deviation of 0.48. Awareness of environmental regulations is slightly lower, with a mean of 2.95 and a standard deviation of 0.62. Overall, across both domains, the workforce is moderately aware, with a mean of 3.20 and a standard deviation of 0.55.

From an instrument perspective, the results demonstrate that the survey tool distinguished varying levels of awareness across domains. A valid instrument should be sensitive enough to capture differences in knowledge levels among respondents, indicating good discriminatory power (Creswell & Creswell, 2018).

Table 7
Differences Across Demographic Groups (Kruskal-Wallis H Test Result)

Demographic	Occupational Rights	Environmental Regulations
Length of Service	H(2)=7.82, p=0.020*	H(2)=6.95, p=0.031*
Age	H(2)=1.42, p=0.492	H(2)=1.85, p=0.396
Education	H(3)=2.61, p=0.453	H(3)=2.14, p=0.544

Note. $p < .05$ indicates a significant difference. Degrees of freedom are shown in parentheses.

The Kruskal-Wallis H test results show that length of service significantly affects awareness of both occupational rights (H(2)=7.82, p=0.020) and environmental regulations (H(2)=6.95, p=0.031), indicating that employees with longer tenure are more aware. In contrast, age (occupational: H(2)=1.42, p=0.492; environmental: H(2)=1.85, p=0.396) and education (occupational: H(3)=2.61, p=0.453; environmental: H(3)=2.14, p=0.544) do not significantly influence awareness.

These findings are supported by studies emphasizing that experiential learning plays a more critical role than demographic characteristics in developing workplace awareness, as employees gain knowledge through continuous exposure and training over time (Kolb, 1984; Burke et al., 2006). Moreover, in a related

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context of organizational performance, the study on *Leadership Dynamics: A Comparative Study of Public Sector and Academic Settings* by Nilo, Dungca, Mallari, and Florencondia (2025) found that public sector workplaces tend to emphasize transactional leadership focused on rules and structured processes, whereas academic environments prioritize transformational and servant leadership that fosters engagement and motivation. Similarly, Balagtas and Mallari (2025) highlighted that capacity building and structured training initiatives enhance employees' ability to internalize processes and engage effectively with organizational systems. This supports the present study's implication that structured leadership and participatory practices enhance awareness and compliance among warehouse personnel, particularly in high-risk environments.

CONCLUSION

Awareness of occupational rights among employees substantially exceeds knowledge of environmental regulations, reflecting the company's initial initiative to inform personnel through DOLE-focused training, while exposure to DENR requirements remains limited. Critical gaps in understanding, however, pose risks to compliance and safety: SDS access is low (52.4%), creating immediate chemical-handling hazards across the five filling lines; and hazardous-waste handling (71.4%) and wastewater treatment (71.4%) practices fall short of RA 6969 standards. Tenure explains 34–37% of the variance in awareness, highlighting that newer employees (42.9% of the workforce) remain most vulnerable despite formal training, underscoring the importance of practical experience in high-risk lubricant operations.

Recommendations

Based on the findings, a Targeted Employee Awareness Program is recommended to address critical gaps in occupational rights and environmental regulations among warehouse employees. This program combines training and monitoring to ensure safer and more compliant operations.

1. Immediate SDS Intervention
   - Conduct Tagalog-language workshops focusing on Safety Data Sheets (SDS) for employees with less than 5 years of service.
   - Install SDS binders at each blending and filling station for easy access.
2. RA 6969 Compliance Training
   - Provide training on hazardous waste handling and wastewater treatment procedures.
   - Include protocols for DENR-accredited transporters and proper documentation.
3. Infrastructure Improvements
   - Install waste segregation stations and spill containment kits in production areas.
   - Place clear signage for wastewater management and chemical handling procedures.
4. Monitoring and Evaluation
   - Implement pre- and post-training assessments targeting at least 90% awareness in critical gap areas (Q5 Occupational; Q2/Q5 Environmental).
   - Use results to continuously improve training content and prioritize high-risk areas.

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