Observing Safety Management Practices in LGU-Implemented Infrastructure Projects: A Journal-Based Study in Rizal, Nueva Ecija

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***Abstract*: This study presents an exploratory observation of safety management practices in infrastructure projects implemented by the Local Government Unit (LGU) of Rizal, Nueva Ecija. With a focus on real-time site conditions, the research aims to provide a snapshot of how occupational safety is practiced during the construction of roads and public buildings. Data was gathered through brief site visits, photo documentation, and short interviews with foremen and timekeepers, due to the absence of formally designated safety officers on-site. The study found that while personal protective equipment (PPE) was generally used, other safety measures—such as signage, barriers, and emergency preparedness—were inconsistently applied. These findings reveal a reliance on informal safety practices and highlight the need for stronger safety policy enforcement, training, and documentation at the municipal project level. The study contributes to the broader discussion on localized implementation of safety standards in small-scale government construction projects.**

***Keywords*: Construction Safety, LGU Infrastructure, Occupational Health, Rizal Nueva Ecija, Site Observation, Safety Practices.**

1. Introduction

Occupational safety in construction remains a pressing concern, particularly in public infrastructure projects managed by local government units (LGUs), where formal safety protocols may be absent or inconsistently implemented. While national laws such as the Occupational Safety and Health (OSH) Standards and Department Order No. 13 by the Department of Labor and Employment (DOLE) outline safety requirements for construction sites, the translation of these standards into practice varies across regions and project sizes.

This study focuses on the municipality of Rizal, Nueva Ecija, where various LGU-led infrastructure projects are carried out annually, including barangay road concreting, drainage improvements, and public building repairs or construction. Despite the active role of municipal engineering departments in project implementation, little is documented about the actual safety practices observed on-site.

Rather than conducting long-term monitoring or compliance auditing, this study seeks to observe current safety management approaches in selected projects using a journal-based and qualitative method. By documenting site conditions, basic safety compliance, and worker perspectives, the research aims to provide a grounded understanding of how safety is managed in actual LGU projects. The findings are intended to inform both local policy enhancement and academic discussions around safety at the grassroots level.

2. Review of Related Literature

Safety management in construction is a globally acknowledged concern due to the inherently hazardous nature of the industry. According to Goetsch (2008), construction sites often involve dynamic environments, heavy machinery, and multiple teams working simultaneously, making them particularly prone to accidents and occupational risks. As a result, safety management has become a central focus for both public and private sector projects.

In the Philippines, the Occupational Safety and Health Standards (DOLE OSHS) and Department Order No. 13, Series of 1998 specifically outline safety requirements for construction sites, including the mandatory use of personal protective equipment (PPE), appointment of safety officers, and implementation of hazard control measures. However, while large-scale private sector projects tend to comply with these requirements, LGU-implemented projects often operate with limited resources and less formalized safety oversight, particularly in rural areas.

Lucic (2015) emphasized that safety systems in small to medium construction sites are frequently informal and rely on the initiative of site supervisors rather than structured policy. This creates variability in safety performance across government-initiated projects, depending on the awareness and training of those in charge. Furthermore, Bahr (2015) noted that cultural factors, such as familiarity among workers and

tolerance for risk, can influence whether safety protocols are enforced on-site.

Local government units (LGUs) play a key role in infrastructure development in the Philippines, often overseeing projects such as barangay roads, drainage improvements, and small public buildings. However, studies show that while technical specifications are commonly followed, site-level safety management is rarely prioritized unless mandated by higher-level programs or external funding agencies (Hagan et al., 2009). This gap creates a unique context for exploring actual practices in smaller-scale public works.

The use of journal-based observational methods in safety studies has been recommended for understanding day-to-day realities on construction sites. According to Goetsch (2008), field notes and visual documentation provide valuable insight into both compliance and behavioral patterns, especially where formal records are unavailable. For projects without designated safety officers or documented man-hours, on-site observation remains one of the most practical methods for safety assessment.

In sum, the literature suggests that while regulations exist, their implementation at the LGU level is inconsistent. There is a clear need to observe how safety is practiced—not just how it is written. This study contributes to that need by documenting the observed safety practices in LGU-led infrastructure projects in Rizal, Nueva Ecija, using real-time field journals and firsthand interviews.

3. Methodology

A. Research Design

This study employed a qualitative, case-based research design with an exploratory approach. It aimed to observe actual safety management practices in local government infrastructure projects by documenting site conditions, worker behavior, and basic compliance with occupational safety protocols. The research used field notes (journal entries), photographs, and short interviews as the main tools for data collection, making it suited for real-time, descriptive documentation of safety-related practices.

B. Research Locale

The study was conducted in the municipality of Rizal, located in the province of Nueva Ecija, Philippines. Rizal is a fourth-class municipality that implements various small- to medium-scale infrastructure projects through its Engineering Department. The observed sites included ongoing and recently completed local government projects such as barangay road concreting and public building construction.

C. Population and Sampling

The study focused on individuals directly involved in LGU-implemented infrastructure projects, particularly site-level personnel. These included foremen, timekeepers, and municipal engineers. Due to the absence of formally designated safety officers in most sites, purposive sampling was used to select key informants who had firsthand knowledge of daily operations and safety practices. At least one to two respondents per site were interviewed, depending on availability.

D. Research Instrument

This study utilized three primary research instruments, all designed to document and analyze the actual safety management practices observed at LGU-implemented infrastructure sites. These tools allowed the researcher to gather data in a structured, consistent, and credible manner despite the limited timeframe and the absence of formal documentation in some sites.

1) Observation Journal Form

A structured observation form was developed by the researcher to record essential safety-related conditions at each project site. The form included a checklist of safety features (e.g., PPE usage, signage, barriers, fire extinguishers) and provided space for open-ended notes. This instrument enabled the researcher to ensure consistency in the data collected across different sites and allowed for the immediate identification of common safety gaps or patterns.

2) Photo Documentation

Visual documentation was used to support and validate the written journal entries. Photographs were taken during each site visit, highlighting the presence or absence of safety measures, such as warning signs, protective equipment, and site housekeeping. Each photo was labeled with the date, location, and context, serving as evidence and enriching the descriptive quality of the observation data.

3) Interview Guide

A brief semi-structured interview guide was used to gather verbal insights from key site personnel, particularly foremen and timekeepers. These individuals were selected because they were directly involved in supervising daily site operations and workforce coordination. The questions focused on how safety practices were introduced or monitored on-site, whether workers were provided with PPE, and what actions were taken when unsafe conditions were observed. Interviews were documented through paraphrased notes, and responses were thematically grouped during the analysis.

These instruments were designed to complement each other and provide a realistic picture of the day-to-day safety environment in small-scale LGU infrastructure projects, where formal audits or official safety documentation are often lacking.

4) Data Collection

Data collection was conducted from late May to early June 2025. The researcher visited selected project sites during working hours and spent approximately 30–60 minutes observing activities and taking photographs. After observations, short interviews were conducted with available site personnel. All data were recorded manually using the observation form, with photo references labeled and stored digitally. Interviews were documented through written notes or paraphrased summaries.

E. Data Analysis

The data collected from field observations, photo documentation, and informal interviews were analyzed using descriptive qualitative techniques. Observation journal entries were reviewed and grouped according to key safety elements, such as use of personal protective equipment (PPE), presence of signage, on-site hazards, and overall site conditions. Each element was assessed based on frequency of occurrence, visibility, and consistency across observed sites.

Photographs were used to validate and illustrate findings from the observation forms. Selected images were captioned and incorporated into the narrative to highlight specific safety practices or violations.

Interview responses were paraphrased and analyzed thematically. Responses were sorted into common categories such as "PPE availability," "informal safety routines," and "lack of signage." These themes were used to reinforce and explain the patterns seen during field visits.

The combined use of written observations, visual data, and verbal insights allowed the researcher to identify trends, gaps, and informal safety practices in LGU-implemented infrastructure projects. While no statistical software or numerical scoring was applied, this descriptive approach was effective for capturing the safety environment in small-scale public construction settings.

4. Result and Discussion

A. Presentation, Analysis, and Interpretation of Data

1) General Site Conditions and Observed Safety Practices

The site visit focused on the Multipurpose Building project in Barangay Del Pilar, Rizal, Nueva Ecija (implemented by FC Martinez Construction Development and Supply Corporation). All observations were recorded using the structured Site Observation Form.

1. PPE Compliance and Signage
   - Nearly all workers on-site were observed wearing complete personal protective equipment—hard hats, safety vests, gloves, and safety boots—across three simultaneous activities (ceiling installation, roof truss inspection, and steel truss fabrication).
   - Signage reminding entrants to "Wear PPE" and directing them to report to the safety officer was prominently posted at the front gate. An emergency hotline number was also displayed, though no first aid kit was found in the immediate work area (the contractor verbally assured that a kit would be provided).
2. Supervision and Role of Foreman
   - The site foreman doubles as the safety officer (holding a COSH—Certificate of Occupational Safety and Health). He continuously monitored each work zone, intervening when any worker deviated from prescribed safety procedures.
   - Workers conducting elevated tasks (e.g., inspecting roof trusses) were equipped with harnesses and safety ropes. Their PPE (hard hat, gloves, vest, boots) complied with DOLE OSHS requirements [2].
3. Housekeeping and Site Hazards
   - The rear pathway was partially obstructed by construction debris and scattered materials, creating a tripping hazard. Although barricades and ropes were present around elevated areas, no barriers were set up for ground-level material stacks.
   - No onsite first aid kit was immediately visible, despite a posted emergency hotline and proximity to a nearby clinic. Workers reported that although minor injuries had occurred, first-aid treatment was administered by colleagues trained through a prior seminar.

2) General Site conditions and Observed Safety Practices

A semi-structured interview was conducted with the site foreman (who also serves as timekeeper). The following themes emerged:

1. Safety Orientations and Toolbox Meetings
   - "The team holds a toolbox meeting every morning," the foreman explained. "During these sessions, the engineer and I outline today's tasks and emphasize the mandatory use of PPE, as well as the need to watch for hazards."
   - This practice aligns with Goetsch's (2008) recommendation that daily toolbox talks reinforce safety awareness and reduce opportunistic non-compliance on smaller sites [1].
2. Responsibility for Safety Oversight
   - "When I see anything unsafe," he said, "I tell the worker to stop immediately and remove themselves from the hazard zone. Then I meet with the engineer to discuss how to perform the task correctly."
   - Although effective for immediate hazard control, this approach remains informal: incidents are not documented, and there is no written disciplinary procedure for repeat violations.
3. PPE Accessibility
   - "All workers have full access to PPE; we issue them at the start of the project. If someone forgets or damages theirs, we provide a replacement immediately."
4. Accident History
   - "Only minor incidents have happened—eye irritation from dust, someone tripping over lumber—but no serious injuries. We handle minor cuts and scrapes on-site. If something bigger arises, we call the clinic immediately."

5. Handling Unsafe Acts
    - "When I observe an unsafe act, I stop the job, explain why it's unsafe, then escort the worker to a safe area. Afterward, the engineer and I discuss proper methods. We have not yet formalized any written warning system."
    - To strengthen this response, best practices would include documenting each unsafe-act intervention, issuing verbal or written warnings on repeat offenses, and providing targeted retraining sessions—steps consistent with Lucic (2015), who found that small-site supervisors who formalize informal safety routines achieve more consistent compliance [3].

3) General Site Conditions and Observed Safety Practices

Because no numerical incident rates or audit scores were available (typical for small LGU projects without formal safety officers), this study relies on qualitative, journal-based observation. Such methodology is recognized by Goetsch (2008) as a valid means to capture real-time safety culture in contexts lacking formal records [1]. Moreover, Lucic (2015) analyzed how small to medium-sized construction sites often depend on the initiative of on-site supervisors to fill the gap left by absent or under-resourced formal safety programs. In this study, the foreman's dual role as supervisor and safety officer illustrates that very dynamic: reliance on one person's vigilance can improve PPE use but may fall short on systemic issues such as documentation, emergency preparedness, and housekeeping [3].

B. Key Insights Include

- *Strengths*—Consistent PPE use, active supervision by a COSH-certified foreman, visible safety signage, and a functioning emergency hotline.
- *Weaknesses*—Absence of an on-site first aid kit, informal handling of unsafe acts (no written records), and poor housekeeping in certain areas.

These findings reinforce Goetsch (2008) on the importance of combining visual documentation with interview data to understand safety behavior in small-scale projects [1], and echo Lucic's (2015) observation that, without formal structures, safety performance depends heavily on individual initiative and informal routines [3].

5. Conclusion

This study employed a journal-based, qualitative approach to observe safety management practices in an LGU-implemented Multipurpose Building project in Rizal, Nueva Ecija. Through structured field notes, photographic evidence, and a semi-structured interview with the site foreman (who also serves as the safety officer), key insights were gained into how day-to-day safety is enforced in the absence of formal audit systems or detailed incident logs. Overall, workers demonstrated high compliance with PPE use—helmets, vests, gloves, and boots—across multiple activities (ceiling installation, roofing inspection, steel truss fabrication). The foreman's dual role (COSH-certified safety officer and supervisor) ensured continuous on-site monitoring and immediate correction of unsafe acts during toolbox meetings and throughout the workday.

Despite these strengths, important gaps were identified. No first aid kit was immediately available; the rear walkway was obstructed by debris; and interventions for unsafe acts remained informal, with no written documentation or structured follow-up. These observations echo Goetsch's (2008) emphasis on journal-based methods to reveal actual safety behavior and Lucic's (2015) finding that small-site compliance often depends on supervisors' informal routines rather than formalized protocols. In this context, the foreman's personal initiative successfully reinforced PPE use but did not fully address systemic issues—such as emergency preparedness, housekeeping schedules, or incident tracking—that would be expected under DOLE OSHS guidelines (Department Order No. 13, Series of 1998).

In sum, by focusing on descriptive, qualitative data rather than numerical metrics, this study highlights both the practical benefits and the limitations of an informal, supervisor-driven safety culture on LGU projects. The findings underline the need for a balanced approach: while individual vigilance and daily toolbox talks are essential, they must be supplemented by basic formal structures (e.g., first aid kits, documented unsafe-act logs, periodic housekeeping audits) to ensure that safety practices are consistent, sustainable, and fully compliant with national standards.

A. Recommendation

Based on the observations and interview findings, the following actionable recommendations are offered:

- A first-aid kit must be stationed at a clearly marked, accessible location on-site to ensure timely response to minor injuries.
- Construction crews should implement daily or weekly housekeeping schedules that include clearing walkways of debris, properly stacking materials, and maintaining unobstructed emergency egress routes.
- When an unsafe act occurs, the foreman should not only stop the activity and correct it verbally but also record the incident in a simple "Unsafe Act Log." Such documentation will allow the team to track repeat offenders, issue verbal or written warnings, and schedule focused retraining sessions.
- For projects of similar or larger scope, assignment of a dedicated safety officer—rather than combining the foreman and safety officer roles—will help distribute responsibilities, improve compliance audits, and reduce single-point reliance.
- Safety signage should be reviewed and updated monthly, with explanations incorporated into toolbox talks so that workers understand both the presence of the signage and the rationale behind each warning or

instruction.

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