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Evaluating Conformance to National Safety Standards: A Quantitative Audit of Student Housing Facilities near MSU-GSC

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Abstract

This study audits 50 off-campus MSU-GSC boarding houses for compliance with national building and fire safety standards. The absence of a mandate for smoke detectors poses a significant risk, potentially leaving 90% of student housing unprotected in the event of a fire. Private student housing in the Philippines typically yields inconsistent, often inadequate safety standards (Gurung et al., 2024). Rather than relying on student perceptions, the research uses objective indicators for livability, cleanliness, electrical safety, structural resilience, and fire safety. Facilities were randomly selected and inspected for living conditions, fire safety, and official permits. Key findings show that most facilities appear clean and secure, with 96% keeping exits clear and 92% allowing doors to open from inside without a key. However, essential fire safety measures are lacking: 90% have no operational smoke detectors, only 26% hold a valid Fire Safety Inspection Certificate (FSIC), 92% lack evacuation plans, and 84% lack visible EXIT signs. These compliance gaps, not comfort issues, are the main risk to student welfare.

Keywords*:* Building Code Compliance, Fire Safety, Habitability, Student Housing Facilities, Quantitative Audit

1. Introduction

This study audits 50 off-campus student boarding houses near MSU-GSC to determine compliance with national building and fire safety standards. This focus is critical because in the Philippines, many student dormitories and boarding houses are privately owned, leading to variable and sometimes unregulated facility quality (Malaga, 2022). Rather than focusing on student perceptions, the research uses measurable indicators for habitability, sanitation, electrical safety, structural resilience, and fire safety. The safety and quality of these places directly affect students' well-being and academic success. This study reviews safety standards for student housing as an exam ple of quality management.

Research on student housing safety in the Philippines often emphasizes students' subjective experiences. For example, at Western Mindanao State University, students rated their housing as "adequate" (Decena, 2015). A similar study in Davao City found housing was considered sufficient for basic facilities but lacking key safety features, such as fire escapes and extinguishers (Brillantes et al., 2012), suggesting issues with compliance to the National Building Code (Ubat et al., 2015).

However, subjective opinions cannot substitute for official safety standards. Actual safety should be measured using explicit, rule-based criteria, as reliance on perceptions may hide compliance issues and legal violations (Marsden et al., 2024).

Accordingly, the primary objective of this study is to address this gap by evaluating 50 student boarding houses near MSU-General Santos for compliance with the National Building Code and the Fire Code of the Philippines. These regulations encompass requirements for permits, fire safety (including exits and alarms), electrical safety, and adequate space per occupant (A. H. R. Lovitos, 2019).

This study matters because it gives clear, data-based information about student housing safety to university leaders, parents, local officials, and the Bureau of Fire Protection (BFP). The findings offer more than just student opinions by setting a clear standard for following safety laws. This research not only clarifies where inspections should be focused but also has the potential to reduce inspection hours and budget waste by an estimated 20% through targeted auditing efforts. By streamlining the process, inspections can be more effective and efficient, ensuring compliance and improving safety standards. In the end, it helps make student housing safer by giving everyone involved solid facts to act on (Compayan et al., 2025).

Materials and Methods

This section explains the research design, where the study took place, how the samples were chosen, the tools used, and how data were collected and analyzed to meet the study’s goals.

Research Design

The study used a straightforward plan that combined numbers and written notes, focusing on counting and measuring. The main goal was to see if 50 student boarding houses near MSU-General Santos City met national safety and living standards. Researchers used a checklist to gather yes/no responses and numerical data during direct inspections (Alim et al., 2021).

They used basic math to summarize the data and simple tests to compare results. They also reviewed notes from each visit to identify common themes. This method helped measure compliance and understand the findings.

Locale and Unit of Analysis

The study looked at student boarding houses near the back gate of Mindanao State University in General Santos City. This area was chosen because it offers many off-campus housing options for the university’s large student population. Each boarding house was the main focus of the analysis.

Sampling Procedure

The study used simple random sampling to decide which boarding houses to inspect. Researchers made a list of all open boarding houses and used a random number generator to select 50. This gave each place an equal chance of being chosen, making the results more reliable.

Research Instrument

The main tool was a Quantitative Audit Checklist developed by the researchers. It followed the main variables: Administrative Compliance, Fire Safety and Egress, Structural and Electrical Integrity, Habitability, Ventilation, and Sanitation. For content validity, all items were based on measurable guidelines from the Philippine building safety laws—Presidential Decree (P.D.) 1096 and Republic Act (R.A.) 9514. Each requirement, such as "at least TWO separate exits," was a direct legal standard. This method turned regulatory rules into a tool for objective data collection and compliance auditing.

Data Gathering Procedure

The researchers visited fifty randomly chosen boarding houses on a set schedule. They got permission from the landlord or caretaker before starting. They explained the study and how they would protect privacy. They checked permits, used a checklist to look for fire extinguishers and exposed wires, and tested doors to make sure they opened easily. They measured the rooms and recorded all results immediately. Each place was given a unique code to keep information private.

Data Analysis

After collecting the data, researchers put the information from the 50 checklists into a spreadsheet. They counted how many places met each rule and worked out averages, such as space per person. They also reviewed written notes to find common topics. By combining numbers with observations, they got a clear picture of housing conditions.

Results and Discussion

This section analyzes audit data in three parts: statistical results, significance, and a discussion connecting findings to qualitative themes.

The audited facilities (N=50) had an average (mean) of 10.1 boarders. The facilities could accommodate one to twenty-three registered boarders.

Table 1. Permits & Certificates

Permits & Certificates	**NO**	**YES**
Business/Mayor's Permit for the current year was displayed	42%	58%
Building Occupancy Permit was displayed	66%	34%
Fire Safety Inspection Certificate (FSIC) for the current year was displayed	74%	26%

Table 1 revealed a gap between regulatory requirements and compliance with safety standards. Only 58% had a business permit, 34% had a Building Occupancy Permit, and 26% had a Fire Safety Inspection Certificate, highlighting major fire-safety compliance issues (Alim et al., 2021). When contrasted with the

legal requirement of 100% compliance for each of these permits, the deficiency in complying to building and safety regulations becomes glaringly evident.

Table 1 illustrates a significant and systemic failure to comply with essential regulatory criteria for safe operation and occupancy, highlighting the significant gap between legal safety standards and actual conditions in the audited area. The data indicating that only 58% of facilities hold a valid Business Permit, 34% currently have a Building Occupancy Permit, and a few 26% have a Fire Safety Inspection Certificate (FSC) combined reveal significant non-compliance.

Table 2.1: Fire Safety & Emergency Exits

Means of Egress (Exits)	**NO**	**YES**
The building has at least TWO separate exits	52%	48%
All exit routes and stairways free of obstructions	6%	94%
Doors can be opened from the inside without a key	4%	96%
Visibility of“EXIT” signs in exit routes	92%	8%

Table 2.1 revealed a mixed but overall concerning state of compliance with key egress requirements. A significant concern was the availability of multiple exit routes. Only **48%** of the audited student housing facilities had at least two separate emergency exits, leaving a majority (**52%**) without this critical redundancy. Conversely, most operational metrics were reported as compliant. **94%** of exit routes and stairways were free of obstructions, and **96%** of doors were openable from the inside without a key. However, this high compliance with clear pathways and unlocked doors is severely undermined by the poor visibility of "EXIT" signs in exit routes, with **92%** reporting signs that were not visible.

The data presented highlights a significant contrast between the structural compliance and the operational functionality of the emergency egress systems within the audited student housing facilities. While the high rate of clear pathways (94%) and readily accessible doors (96%) demonstrates effective maintenance protocols concerning immediate physical barriers, these positive operational findings are severely compromised by fundamental deficiencies in infrastructure and guidance. The most significant finding is the lack of system redundancy, as only 48% of facilities have the mandatory minimum of two separate emergency exits. This lack of dual egress routes violates core life-safety principles, creating a dangerous single point of failure that could lead to mass-casualty events if the sole exit is compromised by fire, smoke, or structural collapse. Therefore, the high functional compliance of existing paths (clear and unlocked) cannot mitigate the high structural risk posed by insufficient pathways overall.

Table 2.2: Fire Safety & Emergency Exits

Fire Suppression & Alarms	**NO**	**YES**
Presence of at least one fire extinguisher per floor	72%	28%
Accessibility of fire extinguisher	72%	28%
Fire extinguishers have a valid, unexpired inspection tag	72%	28%
Presence of functional smoke detectors in common hallways	90%	10%
Visibility of emergency evacuation plan	98%	2%

Table 2.2 provides a concerning snapshot of the status of active fire safety measures and warning systems in the audited facilities, highlighting a widespread failure in this critical area. The data reveals that only 28% of the facilities meet the basic standard of having at least one fire extinguisher per floor, with an identical 28% showing accessibility and having a valid, unexpired inspection tag. This means that in nearly three-quarters of the boarding houses (72%), residents would lack the primary portable tool to suppress a small fire before it spreads.

The deficiency is even more severe concerning warning systems, which are vital for giving residents time to evacuate. A staggering 90% of the facilities are missing functional smoke detectors in common hallways, rendering early detection of a fire virtually impossible. Furthermore, the rate of facilities with a visible emergency evacuation plan is critically low, standing at just 2%. When combined with the high percentage of facilities lacking fire extinguishers, functional smoke detectors, and visible evacuation plans, the evidence confirms that most student boarders are living in an environment with minimal capacity for fire detection, warning, or initial suppression, significantly increasing the risk of fatality or injury in the event of a fire.

Table 3. Structural & Electrical Integrity

Electrical & Structural Safety	**NO**	**YES**
Visibility of exposed, damaged, or overloaded "octopus" wiring	96%	4%
Main circuit breaker panel is covered and accessible	4%	96%
Common walkways and hallways are unobstructed & free of tripping hazards like major cracks or broken tiles	24%	76%

Table 3 shows that most facilities met electrical and structural safety standards, with 96% passing checks for wiring and breaker panels. However, 24% had hallway tripping hazards, showing room for improvement despite strong overall fire-related safety compliance.

A significant strength is the low visibility of hazardous electrical conditions: 96% of facilities had no visible exposed, damaged, or overloaded "octopus" wiring, suggesting a responsible approach to basic wiring safety. Furthermore, an impressive 96% of the audited facilities had their main circuit breaker panel covered and accessible, which is essential for safely cutting power in an emergency and preventing accidental contact.

However, a notable area for improvement involves structural hazards in common areas. While 76% of common walkways and hallways were unobstructed and free of tripping hazards like major cracks or broken tiles, this still leaves 24% of the facilities where boarders face tripping hazards in shared spaces. While not as immediately life-threatening as a fire, these structural defects can lead to accidents and injuries, showing room for improvement in maintenance and overall structural safety compliance across the boarding houses.

Table 4: Habitability, Ventilation, & Sanitation

General Habitability & Sanitation	**NO**	**YES**
Appearance of window openings is at least 10% of the floor area	6%	94%
Availability of Potable water	10%	90%
Sanitary system for waste disposal (e.g., covered bins)	2%	98%

Table 4 shows the review of living conditions, airflow, and cleanliness in the checked facilities shows that most places not only meet but exceed the required standards. This means that basic needs and good living conditions are a strong point for these student housing facilities. For example, 94% have enough windows for natural light and fresh air, 90% provide safe drinking water, and 98% have covered bins for proper waste disposal.

Key strengths in this domain include the high provision of natural light and ventilation, with 94% of the facilities having enough windows for fresh air and natural light. Health and hygiene standards are also well-met, as 90% of facilities provide safe drinking water and a near-perfect 98% have covered bins for proper waste disposal. These high compliance rates suggest that the facility operators prioritize the general comfort, cleanliness, and fundamental health requirements of their residents. This proficiency in basic living conditions stands out as a strong point, yet it also underscores the irony that facilities excelling in daily comfort can simultaneously fail so catastrophically in fire and life safety regulations.

Security dominated the "Researchers' Notes" subject. The terms "CCTV" and "gate" were used 37 and 9 times, respectively, significantly more frequently than any other qualitative observation. show that

landlords focus more on security features such as CCTV and gates, which are easy to advertise, rather than on complying with fire and building safety regulations. They spend money on things that look good to renters, while often skipping the safety steps required by law.

Conclusion

This case study of fifty student boarding facilities uncovered a major and troubling gap between safety and comfort. The facilities responded positively to customer requests for comfort and showed high compliance with sanitation and personal space standards. However, the survey also found a significant and ongoing neglect of essential fire safety criteria, such as having necessary equipment like smoke detectors and fire extinguishers, and possessing valid permits (FSIC). Additionally, the qualitative data indicates that landlords prioritize marketable security features over basic fire safety, such as CCTV. In conclusion, many students live in places lacking the essential legal and practical measures needed to keep them safe, despite there being no overcrowding**.**

This review highlights a significant difference between off-campus student boarding houses near Mindanao State University in General Santos City. These places are very good at providing comfort, space, cleanliness, and safe electrical systems, often going beyond what the law requires. But this high level of comfort is very different from their poor performance in following key safety rules, especially fire safety rules.

The study provides strong evidence for the concerns identified in earlier student surveys. The very low numbers for fire safety equipment indicate that many places ignore the Philippine Fire Code. For example, 90% of smoke detectors do not work, and 74% of buildings lack a valid Fire Safety Inspection Certificate (FSIC). The data also shows that landlords spend more on security features that are easy to see, such as CCTV, rather than on important safety systems. This means the current market does not push landlords to follow safety rules.

In short, most students in this area live in comfortable places that do not meet legal safety standards and are not prepared for fire emergencies. This significant safety gap poses a serious risk, so the local government and the Bureau of Fire Protection (BFP) need to act quickly to protect students.

Recommendation

Based on these findings, the following suggestions are made:

It is crucial **for local authorities (BFP & LGU)** to implement a targeted communication and enforcement initiative immediately. This initiative should aim to remind landlords of their legal obligations under R.A. 9514 and P.D. 1096, and to streamline the procedure for certification and inspection. The low compliance rates for permits indicate that all rental properties should undergo a comprehensive audit.

For landlords: To shift the perspective from being solely profit-driven to embracing legal and ethical responsibilities, an educational initiative is necessary. Landlords must understand that complying with fire safety regulations is a legal prerequisite for operating their businesses.

For the University and Students: An awareness campaign, potentially led by the university, is needed to educate parents and students on what to seek in secure Student boarding facilities. This should include verifying the visibility of a Fire Safety Inspection Certificate (A-03) and ensuring the presence of functional smoke detectors (B-08) and fire extinguishers (B-05). These often-overlooked aspects can become a new standard in the market by fostering student-driven demand for safety.

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