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OFFICIAL RESEARCH JOURNAL OF
ILAYA BARANGKA INTEGRATED SCHOOL

LAYAG ILAYA

RESEARCH JOURNAL

Guided by Heritage. Driven by Inquiry.

VOLUME 1 ♦ ISSUE 1 ♦ MARCH 2026

A JOURNAL FOR STUDENT RESEARCHERS,
TEACHER RESEARCHERS, AND
EDUCATION PRACTITIONERS



INQUIRE

We ask meaningful questions and pursue truth with curiosity.



COLLABORATE

We work together with respect, empathy, and a shared purpose.



IMPACT

We use our learning to improve lives and build a better future.





— MANIFESTO —

LAYAG ILAYA

PAGGULA • PAGESUGOD • PAGLAYAG

*Research does not end
at publication.
Its journey begins
with impact.*

Evidence is our compass. Integrity is our anchor. Community is our destination.

At Layag Ilaya Research Journal, we believe that every meaningful investigation is a voyage—one that begins with curiosity, is guided by evidence, and continues beyond publication as knowledge in service of others. We uphold integrity, embrace rigorous inquiry, value diverse perspectives, and commit to research that is locally grounded, globally informed, and transformative for our communities.

*We inherit the courage to sail.
We cultivate the wisdom to inquire.
We accept the responsibility to serve.*

PAGGULA • PAGESUGOD • PAGLAYAG

This is Layag Ilaya.



ADOPTED AS THE MANIFESTO OF
LAYAG ILAYA RESEARCH JOURNAL

VOLUME 1 • ISSUE 1 • MARCH 2026

ILAYA BARANGKA INTEGRATED SCHOOL
MANDALUYONG CITY, PHILIPPINES

— ✦ THE STORY BEHIND ✦ —

LAYAG ILAYA RESEARCH JOURNAL

*Every meaningful voyage begins
with a question.*



Every year, countless student and teacher research projects are completed, defended, graded, and archived. Many contain practical solutions to authentic educational and community challenges, yet only a few reach audiences beyond the classroom. *Layag Ilaya Research Journal* was founded on a simple conviction: meaningful research should not end at the research defense—it should continue its journey by informing practice, inspiring innovation, and contributing to the wider educational community.

The journal traces its origins to **Project I-SEARCH (Inspire Breakthroughs through Innovations & Solutions Recognizes Achievement in Educational Research)**, established in 2022 by Franklin D. Garvida. Created as a school-wide initiative to strengthen research capability, Project I-SEARCH cultivated a sustainable culture of inquiry through mentoring, action research, proposal development, School Learning Action Cell (SLAC) sessions, and the recognition of exemplary educational innovations among teachers and students.



A PARTNERSHIP THAT BUILT A CULTURE OF INQUIRY

Through the collaborative partnership between Ilaya Barangka Integrated School and the Rizal Technological University – College of Education, research gradually evolved beyond an academic requirement into a vehicle for community engagement and evidence-based educational improvement. Student investigations increasingly explored environmental sustainability, public health, infrastructure, disaster preparedness, educational innovation, and community development. Despite these achievements, one important gap remained: many valuable studies lacked a permanent platform where they could be preserved, cited, shared, and built upon.



A JOURNAL BORN TO MAKE AN IMPACT

Layag Ilaya Research Journal was created to address that need. More than an annual publication, the journal serves as a living archive of institutional scholarship and a bridge between classroom inquiry and real-world impact. It preserves research in a format that is academically rigorous, visually engaging, and accessible not only to researchers, but also to educators, school leaders, policymakers, local government units, and community partners who transform evidence into meaningful action.



RESPONSIBLE RESEARCH IN THE AGE OF AI

The journal's editorial philosophy has likewise been shaped by the rapid transformation of education in the age of generative artificial intelligence. Recognizing both the opportunities and responsibilities presented by emerging technologies, the Editor-in-Chief has pursued research on responsible AI integration, ethical educational practice, and the preservation of student cognitive agency. These scholarly engagements—including presentations at the 2024 PATEF-UPDATE International Conference in Education, the SEAMEO QITEP in Science International Conference 2026, and the forthcoming chapter "The Principle of Scaffolded Friction: Redesigning Learning for the AI Age" in the 2026 *Encyclopedia of Higher Education*—continue to shape the journal's commitment to ethical, evidence-based, and future-ready scholarship.



A VOYAGE WITH PURPOSE

Today, *Layag Ilaya Research Journal* reflects the belief that educational research should be locally grounded, scientifically rigorous, ethically conducted, and globally informed. It celebrates inquiry that begins within classrooms but extends beyond school walls—research that addresses authentic community needs while contributing to broader conversations in Philippine, Southeast Asian, and international education. As its name suggests, Layag—to sail—symbolizes a continuing voyage of discovery. Every article published in these pages represents more than the completion of a research requirement; it reflects the curiosity, perseverance, and civic responsibility of researchers committed to improving society through evidence.

Guided by heritage. Driven by inquiry.

“ *Layag Ilaya Research Journal is more than a record of completed studies—it is an enduring invitation to ask better questions, pursue deeper understanding, and transform knowledge into meaningful impact.* ”



PAGGULA.

The emergence of an idea.



PAGSUGOD.

The beginning of inquiry.



PAGLAYAG.

The lifelong voyage of knowledge.

From the emergence of an idea, to the beginning of inquiry, to the lifelong voyage of knowledge.



LAYAG ILAYA

RESEARCH JOURNAL

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Layag Ilaya Research Journal

Volume 1 • Issue 1 • March 2026



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SCOPE OF THE JOURNAL

Layag Ilaya Research Journal publishes peer-reviewed scholarly works that promote student-led inquiry, teacher research, educational innovation, STEM education, community-engaged scholarship, and evidence-based practices. The journal welcomes interdisciplinary studies that contribute to educational improvement and sustainable community development.



ARCHIVING POLICY

All published articles are permanently archived in the Layag Ilaya Research Journal repository and preserved in both print and digital formats to ensure long-term accessibility and institutional record keeping.



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Layag Ilaya Research Journal

Volume 1 • Issue 1 • March 2026



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EDITORIAL STATEMENT

The inaugural volume of *Layag Ilaya Research Journal* has been developed through the leadership of a single editorial office.

As a founding publication, multiple editorial responsibilities are carried out by the Editor-in-Chief to establish the journal's editorial standards, publication system, and institutional identity.

The Editorial Board will continue to expand as the journal grows through future collaborations with educators, researchers, and partner institutions.





ABOUT THE JOURNAL

Guided by Heritage. Driven by Inquiry.

Layag Ilaya Research Journal is the official peer-reviewed research journal of Ilaya Barangka Integrated School, published annually to showcase exemplary scholarly work by students, teachers, and educational practitioners. Established in 2026, the journal serves as a platform for the dissemination of rigorous, ethical, and community-centered research that advances learning, innovation, and evidence-based practice.

Inspired by the Filipino spirit of exploration embodied by the *balangay*, the journal views research as a continuing voyage—one that begins with curiosity, is guided by evidence, and finds its highest purpose in service to society. It seeks to preserve outstanding student scholarship while encouraging meaningful dialogue among educators, researchers, policymakers, and community stakeholders.

Rooted in the principles of academic integrity, intellectual curiosity, and civic responsibility, *Layag Ilaya Research Journal* publishes original works that address authentic educational, scientific, technological, environmental, and community issues. The journal embraces interdisciplinary inquiry and welcomes research that contributes practical solutions to local challenges while engaging broader national, regional, and global conversations.



SCOPE OF THE JOURNAL

Layag Ilaya Research Journal welcomes original and unpublished scholarly works in, but not limited to, the following areas:

-  Science, Technology, Engineering, and Mathematics (STEM)
-  Educational Research and Action Research
-  Artificial Intelligence in Education
-  Environmental Science and Sustainability
-  Community Development and Public Health
-  Educational Technology and Digital Learning
-  Social Sciences and Humanities
-  Innovation, Entrepreneurship, and Applied Research
-  Student-Led and Community-Based Research



MISSION

To cultivate a sustainable culture of inquiry by publishing high-quality, ethical, and evidence-based research that empowers learners, educators, and communities to create meaningful and lasting impact.



VISION

To become a nationally recognized basic education research journal that inspires student scholarship, advances educational innovation, and contributes to the global exchange of knowledge while remaining firmly grounded in community needs and Filipino values.

OUR COMPASS



These principles guide every decision we make as a journal—anchoring our voyage in purpose, strengthening our direction, and inspiring meaningful impact.



PUBLICATION FREQUENCY

Annual

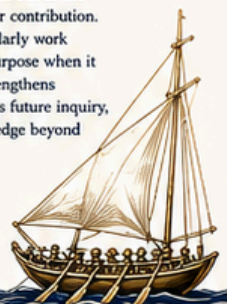
One issue is published each academic year.



EDITORIAL PHILOSOPHY

At *Layag Ilaya Research Journal*, publication is not viewed as the conclusion of research but as the beginning of its wider contribution. We believe that scholarly work achieves its fullest purpose when it informs practice, strengthens communities, inspires future inquiry, and advances knowledge beyond the classroom.

RESEARCH DOES NOT END AT PUBLICATION.
ITS JOURNEY BEGINS WITH IMPACT.





EDITORIAL POLICIES



PEER REVIEW PROCESS

Layag Ilaya Research Journal adopts a structured editorial review process designed to uphold scholarly quality, academic integrity, and ethical publication practices.

EDITORIAL WORKFLOW



1. Submission

Authors submit complete manuscripts together with the required declarations and supporting documents.



2. Initial Editorial Screening

The Editorial Office evaluates the manuscript for relevance, completeness, formatting, and compliance with journal guidelines.



3. Similarity Check

Manuscripts undergo plagiarism screening to ensure originality and proper attribution of sources.



4. Faculty Technical Review

Qualified faculty members evaluate the manuscript for methodological rigor, clarity, validity, ethical compliance, and scholarly contribution.



5. Author Revision

Authors revise the manuscript based on reviewer recommendations.



6. Editorial Decision

The Editor-in-Chief reviews all revisions and issues one of the following decisions:

- Accept
- Accept with Minor Revisions
- Major Revisions Required
- Reject



7. Layout and Copyediting

Accepted manuscripts undergo language editing, formatting, typesetting, and final proofing.



8. Publication

The final article is assigned an Article ID and published in the annual issue of the journal.



PUBLICATION ETHICS

Layag Ilaya Research Journal is committed to maintaining the highest standards of scholarly integrity.



Originality

Authors must submit original work that has not been published elsewhere.



Plagiarism

Plagiarism, self-plagiarism, or unattributed use of another person's work constitutes grounds for rejection.



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SCAN ME



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“Every voyage of research is guided by integrity, powered by inquiry, and anchored in community.”



MESSAGES FROM OUR LEADERS

Guiding our voyage. Strengthening our mission.



MESSAGE FROM THE PRINCIPAL

It is with great pride and joy that we present the inaugural issue of Layag Ilaya Research Journal, the official research publication of Ilaya Barangka Integrated School.

This journal is more than a compilation of studies—it is a testament to the curiosity, dedication, and resilience of our learners and teachers who continue to seek knowledge and solutions for the betterment of our school and community.

Research is not only about discovery; it is about responsibility. It empowers our students to think critically, act ethically, and serve meaningfully. Through this journal, we celebrate their efforts and inspire more young minds to embark on their own voyages of inquiry.

Congratulations to our researchers, advisers, and editorial team for bringing this vision to life. May Layag Ilaya Research Journal become a beacon of excellence, innovation, and integrity for generations to come.

Ellalyn A. Abutal

ELLALYN A. ABUTAL

School Principal III

Ilaya Barangka Integrated School



MESSAGE FROM THE SHS FOCAL PERSON

The Senior High School program is anchored on inquiry, research, and real-world relevance. As the SHS Research Coordinator, I am deeply inspired by the passion and perseverance of our learners who turn questions into studies and ideas into meaningful action.

This journal reflects the heart of our SHS learners—their desire to understand, innovate, and make a positive impact. Each article represents countless hours of exploration, data gathering, analysis, and reflection.

To our student researchers: this is only the beginning of your journey. Continue to ask questions, challenge norms, and seek truths. The world needs your insights and your commitment to building a better future.

My heartfelt gratitude to our advisers, teachers, and partners who nurture and support our researchers every step of the way. Together, let us continue sailing toward excellence.

Angeline C. Miguel

ANGELINE C. MIGUEL

Senior High School Research Coordinator

Ilaya Barangka Integrated School

GUIDED BY HERITAGE • DRIVEN BY INQUIRY



MESSAGE FROM THE EDITOR

Guided by Heritage. Driven by Inquiry.



Dear Readers,

It is both an honor and a privilege to present the inaugural volume of *Layag Ilaya Research Journal*. This publication represents more than a collection of research studies—it is a reflection of curiosity, courage, and commitment of our student researchers and their mentors.

In a world that constantly evolves, research remains a steadfast compass—guiding us toward understanding, innovation, and meaningful change. This journal is our shared vessel, carrying ideas anchored in evidence and driven by the desire to make a positive impact in our school and in our community.

To our student researchers: your inquiry is the heart of this journal. You asked questions, explored possibilities, challenged assumptions, and pursued answers that matter. This is only the beginning of your journey as scholars and change-makers.

To our advisers, teachers, panel members, and school leaders: thank you for nurturing a culture where research is valued, encouraged, and celebrated. *Layag Ilaya* is possible because of your guidance and unwavering support.

As editor, my hope is that this journal will not only preserve your work but also inspire future generations to continue sailing the voyage of inquiry—with integrity, purpose, and compassion.

May this first volume be the beginning of a legacy of excellence in student-led research.

Happy reading and may your own journey of inquiry continue.

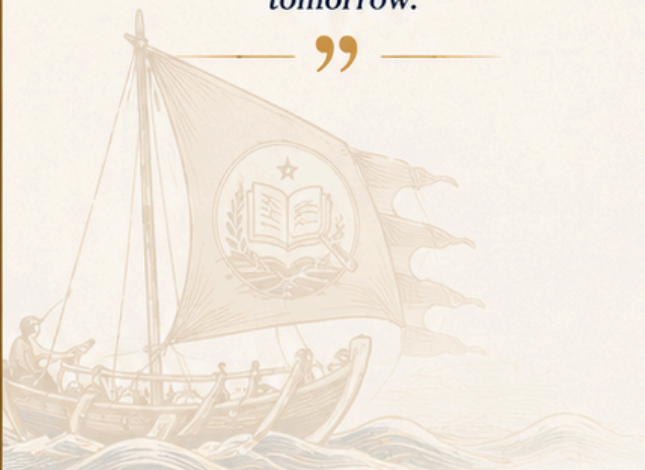
Sincerely,

Franklin D. Garvida

FRANKLIN D. GARVIDA, MA Science Education
Editor-in-Chief
Layag Ilaya Research Journal
Ilaya Barangka Integrated School



“
*Every question we ask
today becomes the
solution we shape
tomorrow.*
”



GUIDED BY HERITAGE • DRIVEN BY INQUIRY

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A guide to the inaugural issue of Layag Ilaya Research Journal.

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PART I

Environmental Sustainability & Innovations

This section gathers student-led studies that respond to visible environmental problems through observation, applied analysis, and practical innovation. Together, the three papers move from campus waste systems to canal-interception infrastructure and street-level garbage-collection timing.

STUDIES IN THIS SECTION

LIRJ-2026-V111-001

Trash to Treasure

Smart Waste Monitoring and Incentive-Based Solid Waste Management System para sa Ilaya Barangka Integrated School

LIRJ-2026-V111-002

Catching the Tide

Evaluating the Effectiveness of Trash Trap Installations at the Ilaya Canal Network in Mandaluyong City

LIRJ-2026-V111-003

Against the Clock

Assessing Waste Accumulation and Garbage Collection Timing in Barangay Plainview, Mandaluyong City

Trash to Treasure

Smart Waste Monitoring and Incentive-Based Solid Waste Management System para sa Ilaya Barangka Integrated School

LIRJ-2026-V111-001 · Descriptive Study with Technology Proposal · Received: January 2026 · Accepted: February 2026 · Published: March 2026



50.82%

of SHS classrooms had a bin at baseline — and only 14.75% were segregating correctly

AT A GLANCE

STUDY SITE

IBIS SHS building

COVERAGE

61 classrooms + high-traffic areas

BASELINE RESULT

50.82% with bins · 14.75% segregating

PILOT HORIZON

14–21 days

RESEARCH SUMMARY

Conducted at the Senior High School building of Ilaya Barangka Integrated School, this study documented the school's baseline waste-segregation condition across 61 classrooms and selected high-traffic spaces, then translated the findings into a pilot-ready smart waste-management proposal. The researchers combined classroom mapping, observation logs, and hotspot identification to show that access to bins, visibility of labels, and student reinforcement remain the core operational gaps.

OBJECTIVES

- ◆ Assess the baseline condition of waste segregation in the IBIS SHS building in terms of bin availability and proper sorting.
- ◆ Identify hotspot locations and peak periods with the highest waste volume and sorting errors, including the canteen and third-floor comfort rooms.
- ◆ Design a QR-based monitoring workflow using Google Forms and Sheets for hotspot analytics and routine logging.
- ◆ Outline an EcoPoints incentive mechanism with validation rules and recognition schedules to encourage student participation.
- ◆ Recommend data-driven steps for pilot implementation and possible school-wide adoption.

CONTEXT & METHOD

The study frames school waste management as both an infrastructure problem and a behavior problem. While RA 9003 and the DepEd WinS program require proper segregation and sanitary school environments, everyday routines still generate mixed waste, hidden bins, overflowing containers, and weak compliance after peak disposal periods such as recess. By grounding the proposal in a baseline audit, the study avoids generic solutions and instead points to the locations, times, and system failures that matter most in the IBIS SHS context.

- Research design: baseline descriptive assessment with a pilot-implementation proposal.
- Units of analysis: 61 SHS classrooms plus high-traffic areas (canteen, hallways, comfort rooms).
- Tools: classroom bin-mapping sheet, observation checklist, waste-volume tally sheet, and photo documentation guide.
- Pilot plan: 14–21 day QR-based monitoring with an EcoPoints feedback loop, including deduplication and incomplete-entry cleaning rules.



FIG. 1 Fewer than six in ten classrooms had bins, and proper segregation was recorded in only a small minority of rooms.

KEY FINDINGS

- ◆ Only 31 of 61 classrooms (50.82%) had bins available at the time of the baseline audit.
- ◆ Only 9 of 61 classrooms (14.75%) met proper-segregation criteria, indicating very low compliance.
- ◆ The canteen and third-floor comfort rooms emerged as the most persistent waste hotspots, especially during recess and immediately after break periods.
- ◆ Contamination and overflow stem from uneven infrastructure, weak visual guidance, and limited behavioral reinforcement.

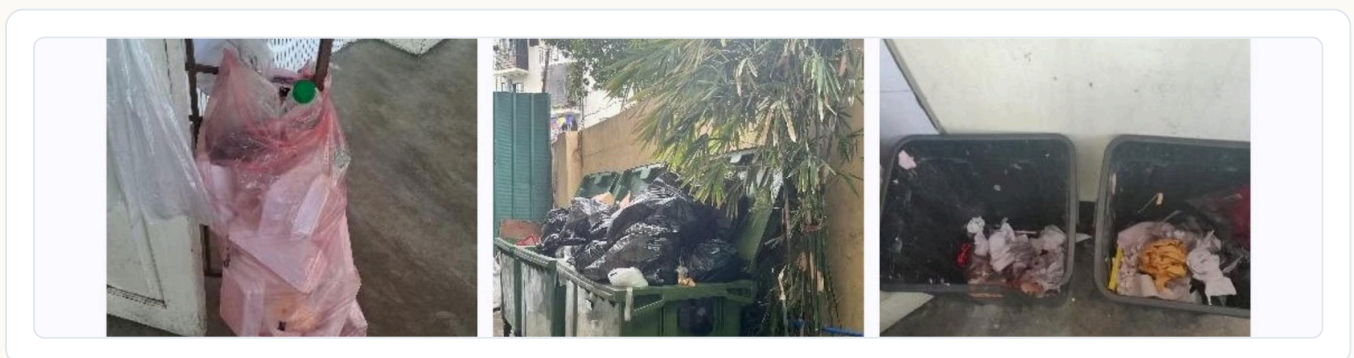
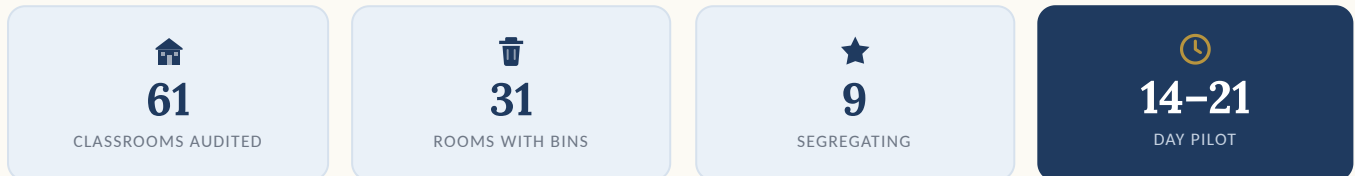


FIG. 2 Field documentation of waste conditions in the IBIS campus area: an overflowing garbage bag left outside a classroom door, waste bins filled beyond capacity in communal areas, and unsegregated residual waste mixed in unlabelled containers — the baseline conditions that prompted the proposed Smart Waste Monitoring System.

IMPLICATIONS & RECOMMENDED ACTIONS

- Standardize bin provision and placement so containers remain visible, accessible, and easy to use.
- Introduce redesigned labels and visual cues before school-wide rollout, especially in pilot areas with the highest error rates.
- Launch QR-based logging in the canteen, hallways, and third-floor comfort rooms to generate real-time hotspot data.
- Implement EcoPoints with transparent rules, weekly recognition, and simple anti-gaming safeguards.
- Use dashboard outputs to coordinate teacher, utility-staff, and student action around recurring problem spots.



“ The baseline assessment shows that the waste challenge at IBIS is not only about cleaning up after students; it is about creating a visible, measurable system that makes correct segregation easier to perform and easier to sustain.

RESEARCH ADVISER

Mr. Franklin D. Garvida

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KEYWORDS solid waste management; waste segregation; QR-based monitoring; incentives; EcoPoints; WinS; RA 9003; IBIS

Catching the Tide

Evaluating the Effectiveness of Trash Trap Installations at the Ilaya Canal Network in Mandaluyong City

LIRJ-2026-V111-002 · Descriptive-Evaluative Field Study · Received: January 2026 · Accepted: February 2026 · Published: March 2026



1.79

mean structural-instability rating — the trap's top weakness on a 0–2 scale

AT A GLANCE

STUDY SITE

**Ilaya Canal
(Ilaya St.
segment)**

OBSERVATION PERIOD

**14 sessions ·
Jan 10–30,
2026**

PERFORMANCE SCALE

**0–2 across 5
indicators**

KEY CONCERN

**Structural
instability
(1.79)**

RESEARCH SUMMARY

This descriptive-evaluative field study examined whether an existing floating trash trap along the Ilaya Canal actually performs as intended under real flow conditions. Through fourteen observation sessions between January 10 and 30, 2026, the study rated waste interception, gap leakage, overflow, structural instability, and flow disruption to determine how well the installation protects the canal network and downstream waterways.

OBJECTIVES

- ◆ Describe the current design, structural components, and placement configuration of the existing trash trap.
- ◆ Assess interception performance and common bypass patterns under varying observed flow conditions.
- ◆ Identify structural and placement limitations such as side gaps, overflow, misalignment, and instability.
- ◆ Recommend design and maintenance improvements that can increase capture efficiency and reduce waste leakage.

CONTEXT & METHOD

Installed trash traps often appear effective from a distance because they visibly retain floating debris. The field question, however, is whether they remain effective once water levels rise, currents intensify, or cage capacity is exceeded. This study situates the Ilaya Street canal segment within the larger drainage system leading toward the Pasig River and asks whether the existing device works as a reliable barrier or merely delays the movement of waste downstream.

- Research design: descriptive-evaluative field research with no manipulation of variables.
- Research locale: Ilaya Canal, Ilaya Street segment, Barangay Ilaya, Mandaluyong City.
- Observation period: 14 sessions from January 10 to 30, 2026 at varied morning and afternoon/evening times.
- Instruments: structured rating checklist, AR-ruler measurement attempt, photo log, and short key-informant interviews.
- Analysis: descriptive statistics using a 0–2 rating scale across five performance indicators.



FIG. 1 Across fourteen sessions, structural instability and gap leakage produced the highest mean ratings, indicating frequent bypass and misalignment.

KEY FINDINGS

- ◆ Structural instability registered the highest mean rating (1.79), indicating frequent movement or misalignment.
- ◆ Gap leakage averaged 1.71, showing that debris regularly bypassed the barrier through side openings or under floating components.
- ◆ Overflow averaged 1.41, meaning cage capacity and/or clearing schedule was often insufficient during heavier inflow periods.
- ◆ Waste interception averaged 1.29, suggesting only moderate capture of visible floating debris.
- ◆ Flow disruption averaged 1.00; the trap generally allowed water to continue moving through the canal.

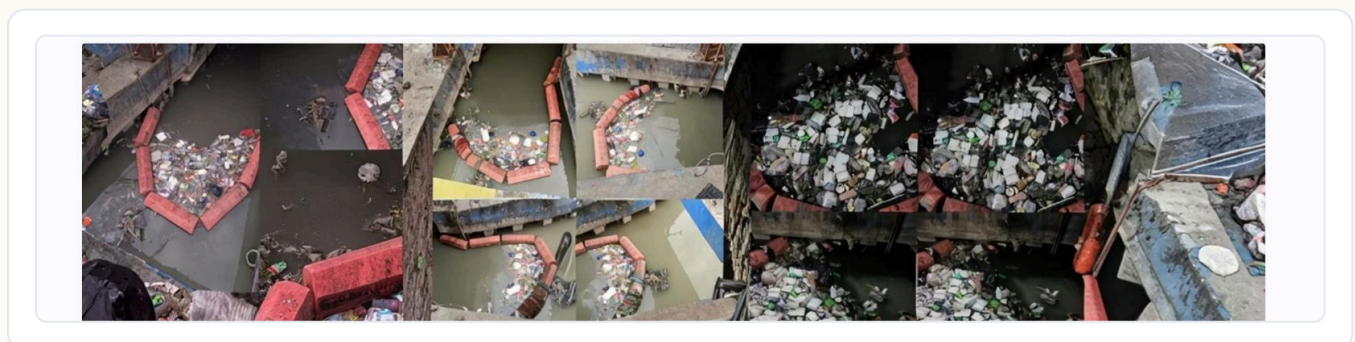


FIG. 2 Aerial field documentation of the Ilaya Canal network during the 14-day observation period. The composite view shows floating debris accumulation behind trash trap barriers, visible gap-leakage bypasses, and overflow conditions at multiple sections — the structural limitations that produced a mean instability score of 1.79 on the 0–2 scale.

IMPLICATIONS & RECOMMENDED ACTIONS

- Seal or reduce side gaps using flexible skirting, overlap joints, or extended mesh panels.
- Reinforce anchoring and tensioning so the barrier retains its shape during stronger flow conditions.
- Increase holding capacity through larger or compartmentalized cages, and clear debris before overflow occurs.
- Keep a simple maintenance log that records clearing times, leakage incidents, and overflow observations.
- Extend future evaluations to more canal segments and add rainfall or flow context for stronger comparisons.

**14**

OBSERVATION SESSIONS

**5**

INDICATORS

0-2

RATING SCALE

Jan 10-30

2026 WINDOW

“ The Ilaya Canal trash trap provides partial containment, but repeated leakage, instability, and overflow mean the current installation is not yet a dependable frontline barrier against floating waste.

RESEARCH ADVISER

Mr. Franklin D. Garvida

STUDENT RESEARCHERS

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KEYWORDS trash traps; waste interception; urban canals; Ilaya Canal; drainage maintenance; Mandaluyong City

Against the Clock

Assessing Waste Accumulation and Garbage Collection Timing in Barangay Plainview, Mandaluyong City

LIRJ-2026-V111-003 • Descriptive-Observational Study • Received: January 2026 • Accepted: February 2026 • Published: March 2026



19

combined waste counts on January 21 — the month's peak, before a sharp drop to 1 the next day

AT A GLANCE

STUDY SITES

**Boni Avenue
& San Rafael
Street**

STUDY WINDOW

**7-10 days •
January
2026**

OBSERVATION BLOCKS

**4-6 PM • 9-
11 PM • 4-6
AM**

PEAK DAY

**Jan 21 — 19
counts**

RESEARCH SUMMARY

This descriptive-observational study tracked visible waste accumulation and garbage-collection timing at selected public sites in Barangay Plainview, with emphasis on Boni Avenue near San Joaquin Street and the vicinity of San Rafael Street. By recording repeated observations across three time blocks during January 2026, the paper shows that waste pile-ups are shaped not only by the amount of garbage generated but by irregular collection timing and weak schedule communication.

OBJECTIVES

- ◆ Record actual garbage-truck arrival times per site across 7-10 consecutive days.
- ◆ Describe observed garbage-accumulation levels per site and time block.
- ◆ Track the duration that waste remains uncollected, from first appearance to removal.
- ◆ Document common community disposal practices visible in public spaces.
- ◆ Propose evidence-based actions to reduce repeated waste pile-ups.

CONTEXT & METHOD

Barangay Plainview’s waste problem appears most clearly in roadside accumulation points where daily routines, commercial activity, and collection services intersect. The study concentrates on Boni Avenue and San Rafael Street because residents and preliminary observations consistently identified them as visible pile-up zones. Its premise is straightforward: if collection timing is inconsistent or poorly communicated, even ordinary waste volumes become a public-sanitation problem.

- Research design: descriptive-observational study of the waste system in its existing state.
- Study sites: Boni Avenue near San Joaquin Street and nearby sections of San Rafael Street, Barangay Plainview.
- Duration: 7–10 consecutive observation days in January 2026.
- Time blocks: late afternoon (4:00–6:00 PM), late evening (9:00–11:00 PM), and early morning (4:00–6:00 AM).
- Tools: accumulation observation log, truck-arrival record, duration tracker, disposal-practice checklist, and short anonymized interviews.

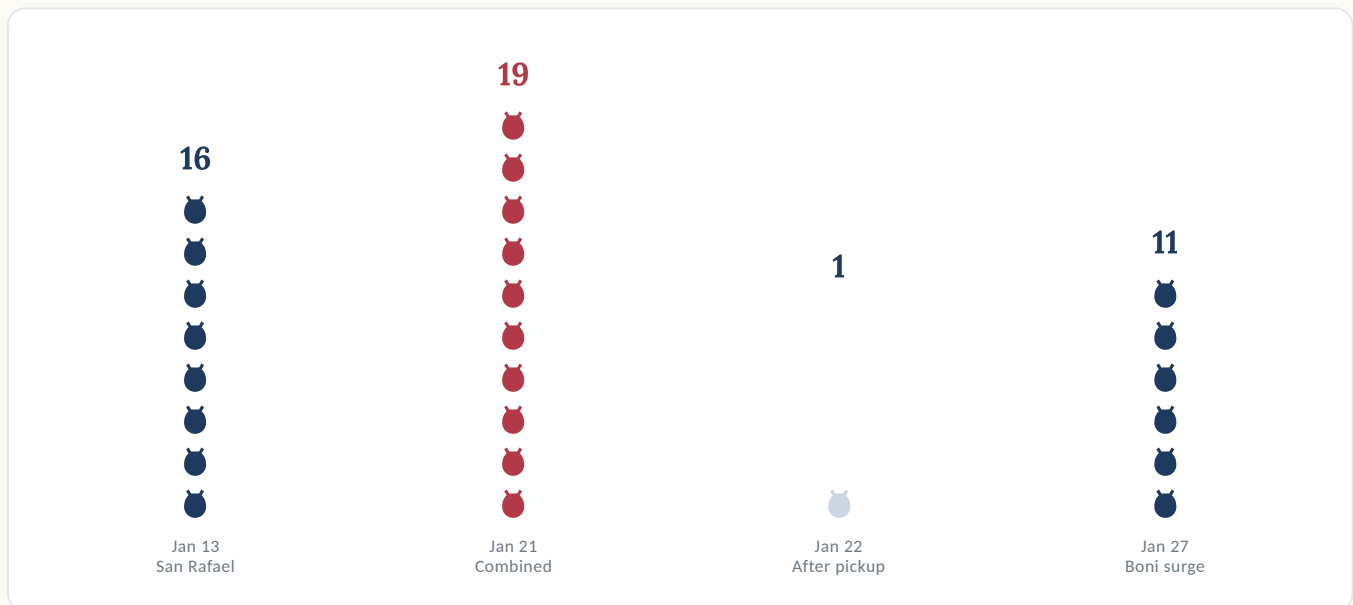


FIG. 1 Daily counts reveal sharp fluctuations, including a combined peak on January 21 and a sharp reduction on January 22 after a likely major collection event.

KEY FINDINGS

- ◆ The combined dataset peaked at 19 observed counts on January 21, 2026, followed by a sharp drop to 1 on January 22.
- ◆ San Rafael Street reached an early peak of 16 counts on January 13, suggesting concentrated dumping and intermittent collection.
- ◆ Boni Avenue sustained repeated mid-month counts of 8–11 and surged again on January 27, indicating persistent exposure in a busier corridor.
- ◆ Truck arrivals were spread across early-morning to evening windows rather than one clearly understood collection period.

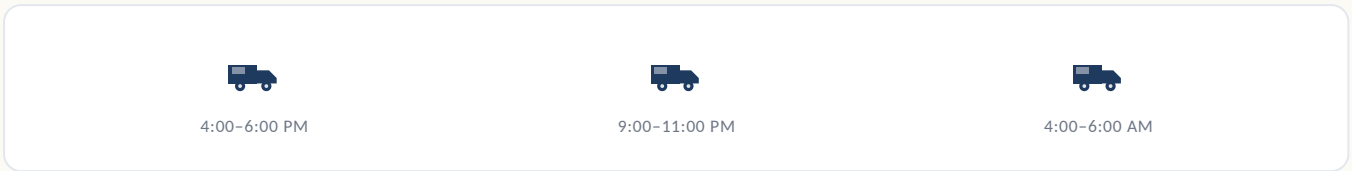


FIG. 2 Truck arrivals were dispersed across several time windows rather than one predictable collection period.

IMPLICATIONS & RECOMMENDED ACTIONS

- Post and publicize street-level collection schedules through barangay boards, social media, and visible signage.
- Define a recommended disposal window of one to two hours before collection to reduce overnight pile-ups.
- Install or improve signage at common dumping points and hotspot corners.
- Prioritize Boni Avenue and San Rafael Street for quicker pickup response and routine monitoring.
- Strengthen coordination with waste-service providers to reduce skipped or partial collection events.



“ The study suggests that the most damaging feature of the Plainview waste problem is uncertainty: when residents do not know exactly when collection will occur, waste remains exposed longer, spreads farther, and becomes harder to manage.

RESEARCH TEAM — GRADE 12



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KEYWORDS waste accumulation; garbage-collection timing; urban sanitation; Barangay Plainview; solid waste management

PART II

Infrastructure, Risk Mapping & Public Safety

This section gathers student-led studies that respond to public-infrastructure blindspots, school-resilience planning gaps, street-level accident risk, and campus-safety conditions. Together, the four papers show how local evidence can move maintenance from complaint-driven reaction to prioritized intervention.

STUDIES IN THIS SECTION

LIRJ-2026-V111-004

Mapping the Unseen

Project IBIS (Infrastructure Blindspot Identification System): Geospatial Auditing for LGU Cost Reduction and Public Safety

LIRJ-2026-V111-005

Building to Last

Project SSPI: A Data-Driven Tool for Prioritizing School Resilience Investments in Mandaluyong

LIRJ-2026-V111-006

Danger Zones

Accident Hotspot Mapping and Infrastructure Risk Assessment in Barangka Ilaya, Mandaluyong City

LIRJ-2026-V111-007

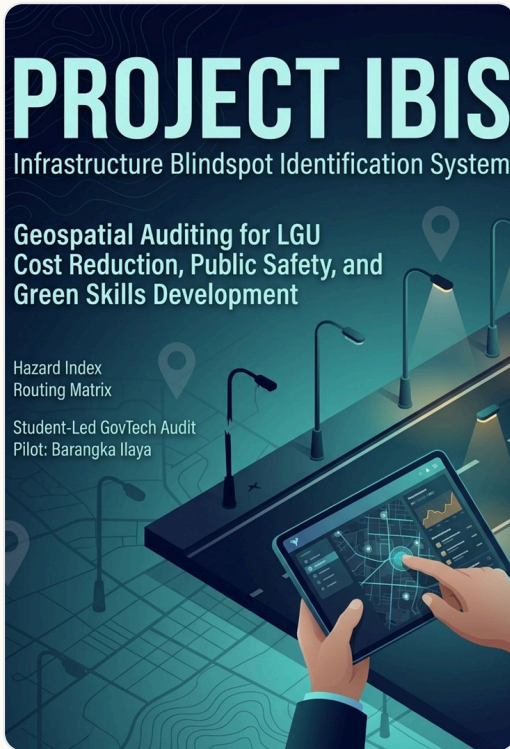
Safe Grounds

Hazard Mapping and Safety Assessment of Ilaya Barangka Integrated School

Mapping the Unseen

Project IBIS (Infrastructure Blindspot Identification System): Geospatial Auditing for LGU Cost Reduction and Public Safety

LIRJ-2026-V111-004 · Descriptive-Correlational Study · Received: January 2026 · Accepted: February 2026 · Published: March 2026



AT A GLANCE

STUDY SITE

Barangay Barangka Ilaya

COVERAGE

1.2 km high-traffic routes

ASSETS LOGGED

42 lighting poles

AUDIT WINDOW

February 10–14, 2026

RESEARCH SUMMARY

Project IBIS responds to a familiar but under-documented city problem: dark streets, deteriorating poles, and day-burning lamps that remain unresolved because maintenance reports are slow, fragmented, or routed to the wrong office. Conducted in Barangay Barangka Ilaya, the pilot reframed lighting failures as both a public-safety issue and a municipal-efficiency issue. By combining lux readings, GPS-tagged fault logging, and a structured hazard index, the study generated repair-ready evidence that local government units can act on more quickly.

OBJECTIVES

- ◆ Investigate the governance gaps that delay streetlight maintenance and fault reporting.
- ◆ Deploy a low-cost geospatial screening system using GPS-tagged forms and lux readings.
- ◆ Detect safety-critical failures, including exposed wiring, total outages, and day-burners.
- ◆ Route validated findings to the proper action owner using an evidence-based fault matrix.

CONTEXT & METHOD

Streetlights extend beyond illumination: they support night-time mobility, disaster readiness, and the safe movement of students, workers, and first responders. In Barangka Ilaya, however, maintenance has remained largely reactive because the reporting loop depends on complaints and blurred responsibility among barangay offices, the LGU engineering unit, utilities, and private associations. The study therefore positioned streetlight failure as a governance problem that also produces avoidable energy waste.

- A two-part observation cycle was completed between February 10 and 14, 2026.
- Night audits (7:00–10:00 PM) logged GPS-tagged points at roughly 20-meter intervals, averaging three replicate lux readings per location.
- Day audits (9:00–11:00 AM) verified day-burners and documented visible structural faults.
- Researchers applied an infrastructure-fault taxonomy and a 13-item CPTED safety assessment to derive a weighted hazard score.

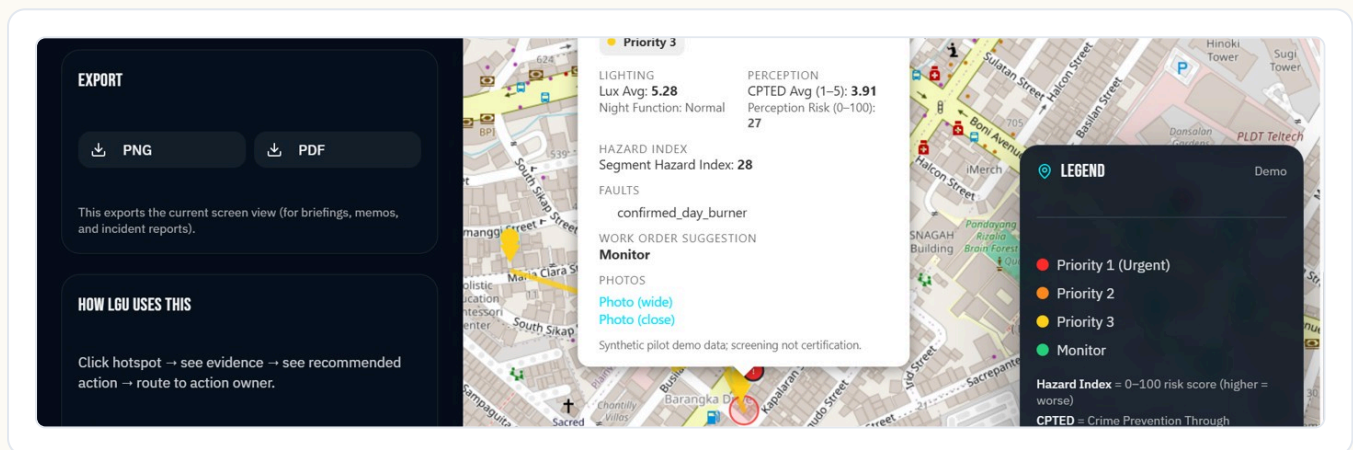


FIG. 1 GPS-tagged audit route covering 1.2 km of high-traffic pedestrian zones, Barangka Ilaya (10–14 Feb 2026). Each node marks a lux-measurement point logged at ~20 m intervals during paired night (7:00–10:00 PM) and day (9:00–11:00 AM) sessions.

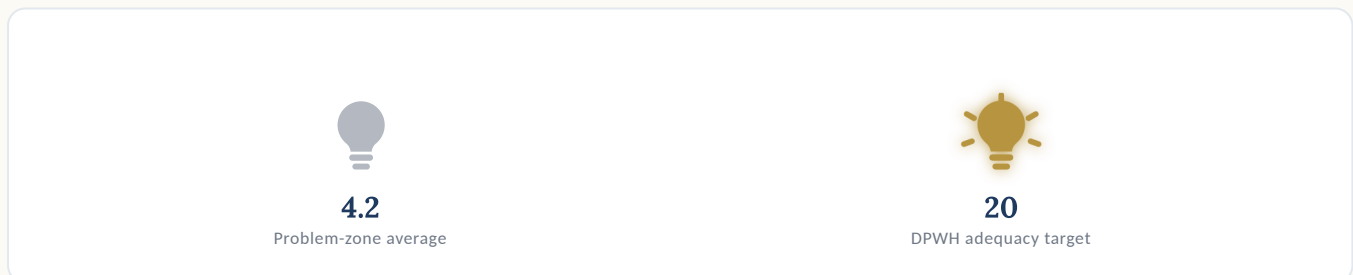


FIG. 2 Problem-zone illumination averaged 4.2 lux against a 20-lux DPWH target, signaling severe lighting deficiency.

KEY FINDINGS

- ◆ The pilot covered 1.2 kilometers of high-traffic pedestrian routes and logged 42 lighting assets.
- ◆ Researchers identified 11 faults, including 3 priority-1 hazards and 3 confirmed day-burners.
- ◆ Problem zones averaged only 4.2 lux against a 20-lux DPWH target, signaling severe lighting deficiency.
- ◆ The three verified day-burners alone implied approximately ₱17,310.00 in annual avoidable cost.

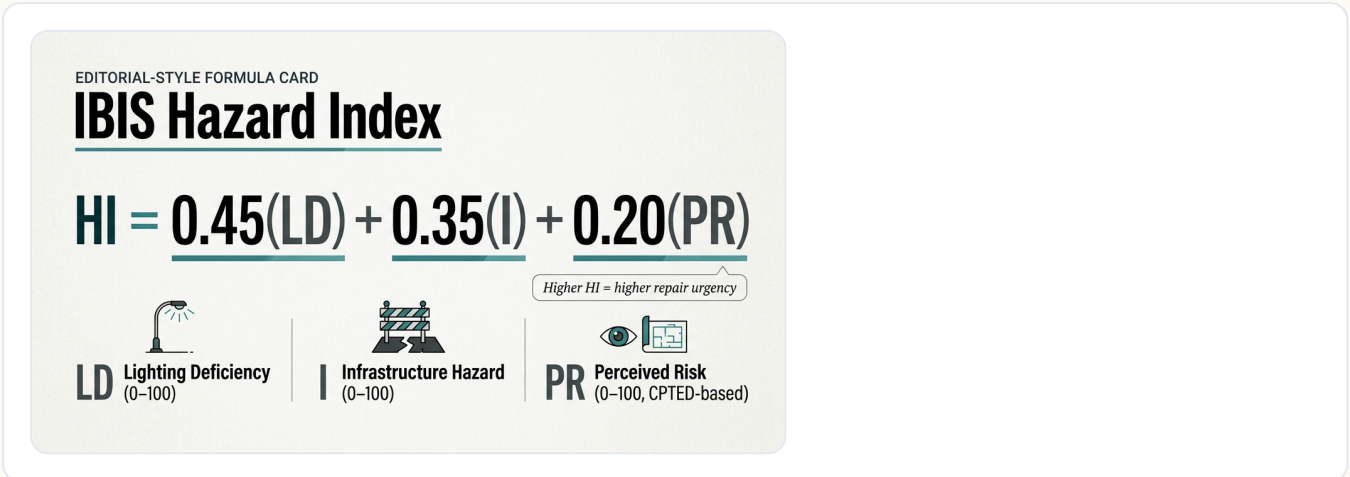


FIG. 3 IBIS Hazard Index ($HI = 0.45 \cdot LD + 0.35 \cdot I + 0.20 \cdot PR$). Lighting Deficiency (LD) and Infrastructure Hazard (I) are scored 0–100; Perceived Risk (PR) is derived from a 13-item CPTED walkthrough. Higher HI = higher repair urgency.

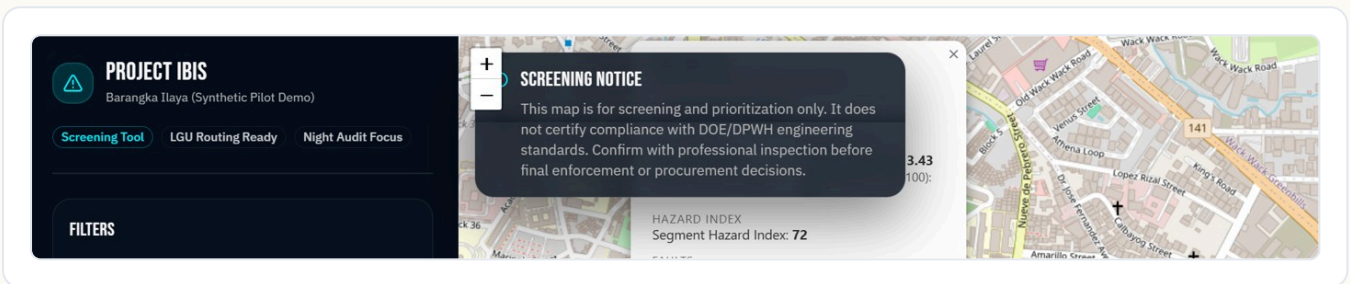
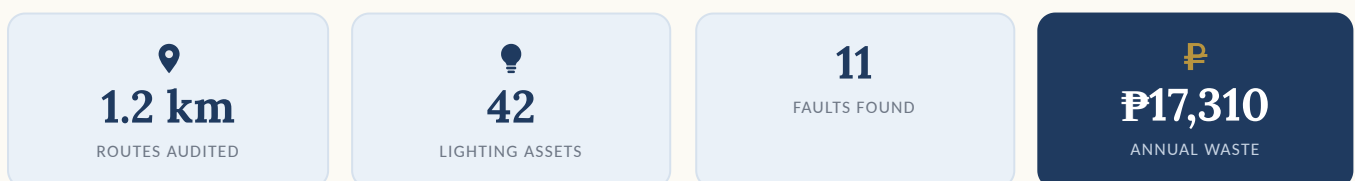


FIG. 4 IBIS pilot fault-routing output. GPS-logged incidents are ranked by Hazard Index score and assigned to the appropriate LGU office or asset owner for action, eliminating the complaint-driven backlog.

IMPLICATIONS & RECOMMENDED ACTIONS

- Institutionalize repeat audits for high-risk and high-traffic street segments.
- Use the routing matrix so validated faults reach the proper office or asset owner without delay.
- Verify day-burners through repeated daytime checks before reporting energy waste.
- Sustain student-auditor training with barangay coordination, ethical photo protocols, and safety briefings.



“ By combining low-cost lux auditing with a weighted hazard score, the pilot turned citizen observation into routable, repair-ready evidence for local-government action.

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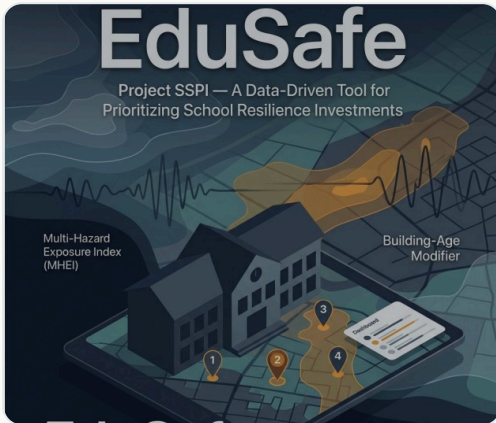
KEYWORDS streetlight maintenance; geospatial auditing; lux measurement; civic technology; energy waste; CPTED

PART II · INFRASTRUCTURE, RISK MAPPING & PUBLIC SAFETY

Building to Last

Project SSPI: A Data-Driven Tool for Prioritizing School Resilience Investments in Mandaluyong

LIRJ-2026-V111-005 · Descriptive-Developmental Study · Received: January 2026 · Accepted: February 2026 · Published: March 2026



AT A GLANCE

STUDY SITE

Mandaluyong District II

COVERAGE

12 public basic-education schools

SCORE RANGE

SSPI 1.95 to 3.12

PRIORITY MIX

2 urgent · 4 engineering · 6 preventive

RESEARCH SUMMARY

Project SSPI was designed to help Mandaluyong decide which school sites should receive engineering attention first when public funds are limited. Rather than relying on fragmented reports, the study piloted a district-level triage system that combines multi-hazard exposure with building age to reflect both environmental intensity and probable structural vulnerability. The result is a transparent screening tool that helps the city rank campuses using a shared method before emergency damage forces reactive spending.

OBJECTIVES

- ◆ Create a standardized screening tool for prioritizing school-resilience investments.
- ◆ Combine flood, liquefaction, and ground-shaking exposure into a transparent hazard index.
- ◆ Integrate a building-age modifier as a proxy for structural vulnerability.
- ◆ Align triage categories with real LGU planning choices and historical disaster records.

CONTEXT & METHOD

The Philippines is one of the most hazard-prone settings in the region, yet school-maintenance decisions are often shaped by fragmented submissions rather than by a common risk metric. In Mandaluyong, this planning gap matters because schools serve a dual role: they are continuous learning spaces and potential evacuation centers. SSPI addresses this by turning public hazard data into a district-wide screening framework that can guide inspection, capital planning, and resilience financing before disaster losses accumulate.

- Coordinates for 12 public schools were validated through satellite imagery, on-site GPS pins, and the DepEd masterlist.
- Each school was processed through DOST-PHIVOLCS HazardHunterPH to obtain time-stamped hazard-assessment reports.
- Flood, liquefaction, and ground-shaking classes were converted into a fixed numeric scale and averaged into the Multi-Hazard Exposure Index (MHEI).
- A localized building-age modifier (1.00 to 1.17) was applied to derive the final SSPI triage score.

EDITORIAL FORMULA CARD

School Safety Priority Index (SSPI)

SSPI = MHEI × Building-Age Modifier

- **MHEI** = average of Flood, Liquefaction, Ground Shaking scores
- **Building-Age Modifier** uses localized age bands (pilot)

Higher SSPI = higher priority for inspection

FIG. 1 SSPI = MHEI × Building-Age Modifier. The Multi-Hazard Exposure Index (MHEI) averages flood, liquefaction, and ground-shaking class scores; the Building-Age Modifier scales from 1.00 (post-2010 buildings) to 1.17 (pre-1990). Higher SSPI = higher priority for engineering inspection.

Stratifying Risk: The Triage Matrix

Urgent Priority Review (3.00+) | Priority Engineering Inspection (2.50-2.99) | Preventive Action (<2.50)

School Name	Flood	Liq.	Quake	MHEI	Age Mod.	SSPI
Amado T. Reyes ES	3	3	2	2.67	1.17	3.12
Mandaluyong High School	2	2	3	2.33	1.17	2.73
Renato Lopez ES	1	1	2	1.33	1.10	1.46

Except from Table 1. Values are rounded to two decimal places for display.

FIG. 2 SSPI score matrix for all 12 Mandaluyong District II public schools. Red = Urgent Priority Review; gold = Priority Engineering Inspection; green = Preventive Action and Monitoring. Amado T. Reyes ES ranked highest at 3.12.

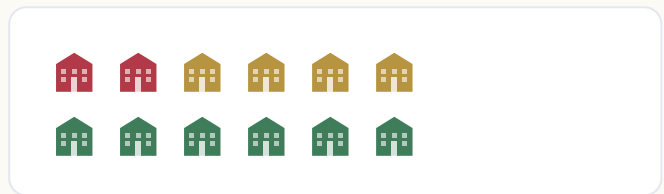


FIG. 3 Applying the SSPI formula to 12 schools yielded two urgent-priority sites, four for engineering inspection, and six for preventive monitoring.

KEY FINDINGS

- ◆ Applying the formula to 12 schools produced SSPI scores ranging from 1.95 to 3.12.
- ◆ Two schools fell under Urgent Priority Review, four under Priority Engineering Inspection, and six under Preventive Action and Monitoring.
- ◆ Amado T. Reyes ES ranked highest in the sample extract at 3.12, indicating immediate review need.
- ◆ The pilot output aligned with District II DRRMC records, supporting the model's face validity.

IMPLICATIONS & RECOMMENDED ACTIONS

- Integrate SSPI into the annual LGU and school-infrastructure planning cycle.
- Standardize coordinate and building-age verification before computing scores.
- Use SSPI as a screening tool that triggers inspection, not as a final engineering verdict.
- Develop future systems integration with DepEd school-building inventory data.

“ By combining multi-hazard exposure with a building-age modifier, SSPI gives Mandaluyong a transparent way to rank campuses before emergency repairs dictate the agenda.

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KEYWORDS school-safety priority index; geospatial risk mapping; resilience planning; hazard exposure; building-age modifier; infrastructure financing

PART II · INFRASTRUCTURE, RISK MAPPING & PUBLIC SAFETY

Danger Zones

Accident Hotspot Mapping and Infrastructure Risk Assessment in Barangka Ilaya, Mandaluyong City

LIRJ-2026-V111-006 · Descriptive-Correlational Study · Received: January 2026 · Accepted: February 2026 · Published: March 2026

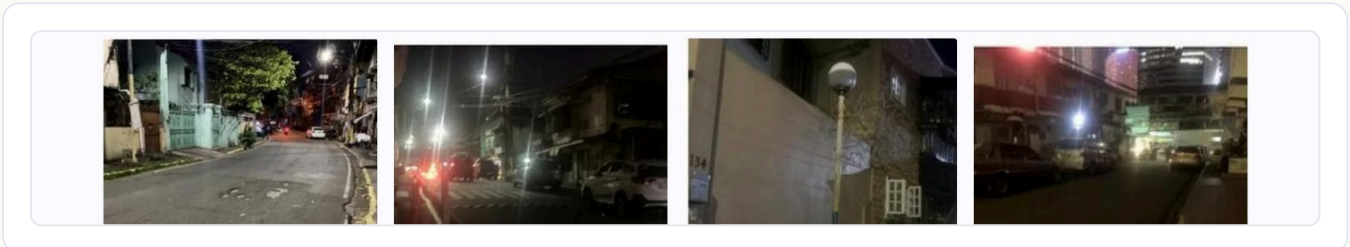


FIG. 1 Nighttime field documentation: streets in Barangka Ilaya during the 7:00–10:00 PM measurement window. Dim and obstructed streetlights create the low-lux conditions the team recorded — San Roque (~8 lux) and Bataan (0–10 lux) were the darkest zones.

AT A GLANCE

STUDY SITE

**Barangay
Barangka
Ilaya**

COVERAGE

**Roads in the
Barangka
corridor**

LOWEST LUX

**Bataan 0–10
· San Roque
~8**

DATA SOURCES

**Lux +
accident
logs**

RESEARCH SUMMARY

This study mapped accident-prone sections of Barangay Barangka Ilaya by pairing night-time lighting measurements with field observation and a review of non-identifiable barangay accident logs. The team documented streetlight functionality, signage visibility, and road-geometry hazards along accessible segments of the Barangka corridor. Results showed that the most severe illumination deficiencies were concentrated in San Roque and the Bataan area, where dim or obstructed lighting overlapped with narrow pedestrian conditions and recurring risk indicators.

OBJECTIVES

- ◆ Locate areas that lack visible signages or functioning streetlights.
- ◆ Review the frequency and location of recorded road accidents in covered areas.
- ◆ Test whether poor lighting and incomplete signage correspond to hazard clustering.
- ◆ Prioritize infrastructure gaps that require the earliest local intervention.

CONTEXT & METHOD

Road visibility is a basic condition of urban safety, yet in dense mixed-traffic corridors even small infrastructure gaps can become collision multipliers. In Barangka Ilaya, residents and commuters navigate dim lights, narrow pathways, blind curves, and incomplete warning signages, especially after dark. The study addressed a local evidence gap by linking measurable illumination levels to observed road conditions and barangay-level accident entries, allowing risk to be mapped not as an anecdotal complaint but as an infrastructure pattern.

- A descriptive-correlational design was combined with spatial mapping of accessible road segments.
- Night-time illumination was measured at roughly 20–30 meter intervals using a mobile lux-meter application.
- Three smartphones were cross-checked; only Samsung readings were retained due to stable repeated measurements.
- Non-identifiable barangay accident entries were extracted by date, time period, location, and accident type.

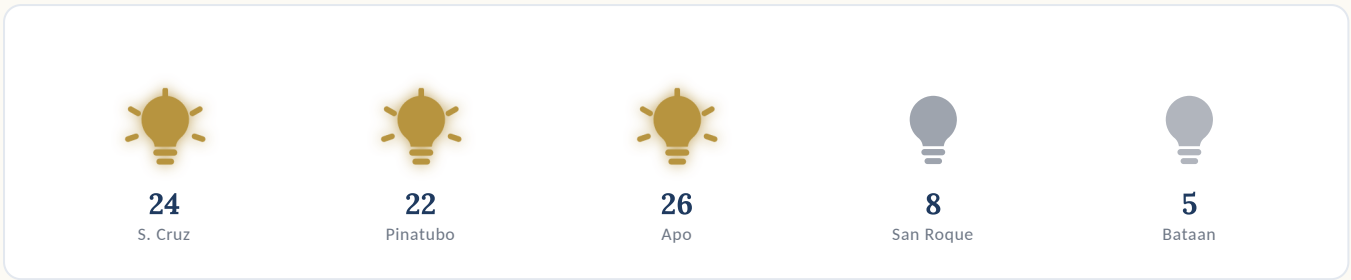


FIG. 1 Night illumination collapsed from moderate visibility on S. Cruz / Pinatubo / Apo to near-complete darkness in the Bataan area, well below the 20-lux adequacy reference.

KEY FINDINGS

- ◆ S. Cruz, Pinatubo, and Apo Streets recorded moderate visibility at roughly 20–28 lux.
- ◆ San Roque dropped to approximately 8 lux, indicating reduced driver and pedestrian visibility.
- ◆ The Bataan area reached 0–10 lux, including complete dark zones that demand immediate action.
- ◆ Recorded accident locations overlapped with high-traffic corridors and noted infrastructure gaps such as poor signage and narrow pathways.

IMPLICATIONS & RECOMMENDED ACTIONS

- Repair or replace non-functioning streetlights in the lowest-lux segments first.
- Clear vegetation and wire obstructions that block existing light coverage.
- Install or refresh warning signages near blind curves and narrow road sections.
- Maintain a GPS-based barangay hazard log for regular monitoring and mapping updates.

“ *The clustering of dark zones and logged accident locations shows that visibility and warning cues are not minor details – they are frontline public-safety infrastructure.* ”

RESEARCH TEAM — GRADE 12



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KEYWORDS *accident hotspot mapping; road safety; street lighting; road signage; lux measurement; Barangka Ilaya*

Safe Grounds

Hazard Mapping and Safety Assessment of Ilaya Barangka Integrated School

LIRJ-2026-V111-007 · Descriptive-Correlational Study · Received: January 2026 · Accepted: February 2026 · Published: March 2026



32

recorded hazards across campus — broken doors and doorknobs led the count, concentrated on upper floors

AT A GLANCE

STUDY SITE

IBIS campus and common areas

COVERAGE

Four floors + key shared spaces

TOTAL HAZARDS

32 recorded hazards

SURVEY SAMPLE

Grade 12 learners (n = 13)

RESEARCH SUMMARY

Safe Grounds examined school safety from two sides at once: the physical distribution of hazards across the IBIS campus and students' perceptions of how safe those spaces feel. Through a campus walkthrough, a structured checklist, floor-by-floor mapping, and a Grade 12 safety-perception survey, the study showed that broken doors, damaged flooring, and other maintenance issues are clustered more heavily on upper floors. The findings support a more targeted, floor-level approach to maintenance rather than treating campus safety as a single uniform condition.

OBJECTIVES

- ◆ Document existing physical and environmental hazards across the school campus.
- ◆ Create a floor-level hazard map and a QR-ready digital reporting workflow.
- ◆ Identify hazard hotspots by location, type, and severity.
- ◆ Examine how existing safety measures relate to perceived student safety.

CONTEXT & METHOD

Many school-safety problems emerge not only from disasters but from recurring, ordinary maintenance failures: slippery floors, broken fixtures, blocked exits, exposed wiring, and incomplete signage. At IBIS, these risks are especially important in corridors, comfort rooms, and stair-adjacent spaces where daily movement is concentrated. The study reframed campus safety as a documentation and response problem, demonstrating that low-cost digital tools can help administrators see where hazards cluster and how safety routines influence student confidence.

- The study used a descriptive and correlational design with technology-assisted data collection.
- Researchers conducted a campus walkthrough using a structured hazard checklist and photo documentation where permitted.
- A Google Sheets dashboard and digital floor plan were used to consolidate and map reported hazards.
- A Grade 12 safety-perception survey (n = 13) was grouped into low, moderate, and high response categories for cross-tabulation.

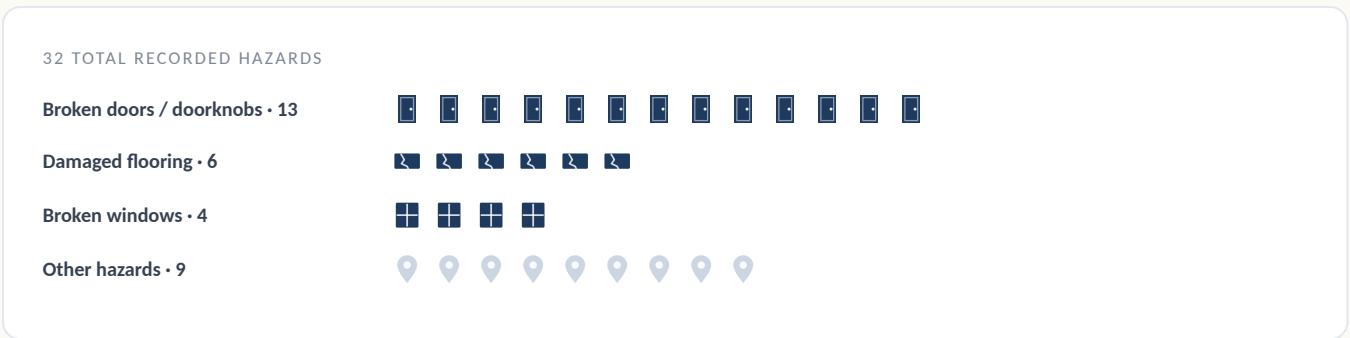


FIG. 1 Broken doors and doorknobs dominated the hazard record, followed by damaged flooring and broken windows.

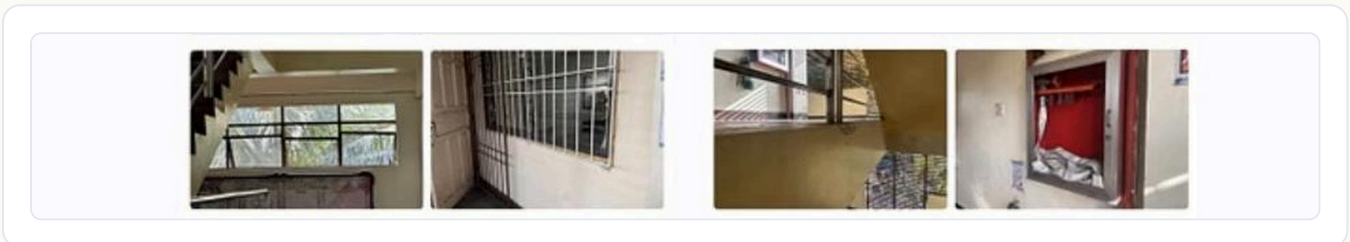


FIG. 2 Field documentation of selected campus hazards recorded during the structured walkthrough: exposed electrical wiring, damaged flooring, broken window grilles, inaccessible fire-hose cabinets, and broken doorknobs — the physical evidence behind the 32-hazard count, concentrated on the 3rd and 4th floors.

KEY FINDINGS

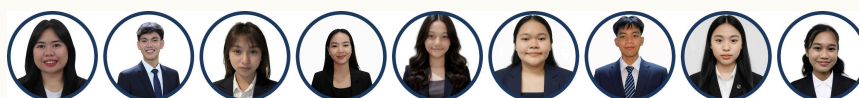
- ◆ Broken doors and doorknobs were the most frequently recorded hazard, followed by damaged flooring and broken windows.
- ◆ Hazards were concentrated on the upper floors, with the 4th floor recording the highest count and the 3rd floor next.
- ◆ Safety-measure ratings generally clustered in the moderate range, indicating visible but incomplete protection systems.
- ◆ Higher ratings for drill regularity aligned with stronger trust in emergency preparedness.

IMPLICATIONS & RECOMMENDED ACTIONS

- Prioritize repairs on broken doors, damaged floors, and upper-floor hotspots.
- Adopt weekly inspection walkthroughs using a standard hazard checklist.
- Improve safety-signage visibility and keep emergency routes unobstructed.
- Institutionalize QR-based hazard reporting to speed up documentation and response.

“ Systematic hazard mapping makes school safety more proactive: it shows where routine maintenance must happen first and why visible safety practices shape student confidence.

RESEARCH TEAM — GRADE 12



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KEYWORDS school safety; hazard mapping; disaster risk reduction; QR-code reporting; safety perception; IBIS

PART III

Campus Life & Student Well-Being

This section gathers student-centered inquiries that examine everyday school life, from restroom adequacy and sanitation to the time pressures, support systems, and emotional strain experienced by Senior High School learners balancing multiple commitments.

STUDIES IN THIS SECTION

LIRJ-2026-V111-008

The Comfort Room Divide

A Comparative Study of Male and Female Students' Satisfaction with School Restroom Facilities at Ilaya Barangka Integrated School

LIRJ-2026-V111-009

The Clock is Ticking

Managing the Load: Teacher Support, Time Decisions, and Emotional Well-Being Among Senior High School Students with Multiple Commitments

The Comfort Room Divide

A Comparative Study of Male and Female Students' Satisfaction with School Restroom Facilities at Ilaya Barangka Integrated School

LIRJ-2026-V111-008 · Descriptive-Comparative Study · Received: January 2026 · Accepted: February 2026 · Published: March 2026



$p = 0.48$

no statistically significant gap between male (3.58) and female (3.29) satisfaction

AT A GLANCE

DESIGN

Descriptive-comparative

DOMAINS

4 satisfaction domains

RESPONDENTS

89 SHS students (F = 48, M = 41)

FINDING

No significant difference ($p = 0.48$)

RESEARCH SUMMARY

This descriptive-comparative study examined how Senior High School students at IBIS evaluate restroom facilities in terms of cleanliness, privacy, accessibility, and usability. Using survey responses from 89 students and structured restroom observations, the study found mixed satisfaction overall: the largest group reported neutral satisfaction, male students posted a slightly higher overall mean than female students, and the difference was not statistically significant ($p = 0.48$). Observation data, however, revealed recurring facility gaps in toilet flushing, water availability, hygiene-supply consistency, and some privacy-related hardware issues.

OBJECTIVES

- ◆ Determine the level of student satisfaction with school restroom facilities at IBIS.
- ◆ Compare male and female students' satisfaction in cleanliness, privacy, accessibility, and usability.
- ◆ Identify specific restroom conditions that students consider most problematic.
- ◆ Recommend practical improvements to enhance restroom adequacy and student satisfaction.

CONTEXT & METHOD

Access to clean, safe, and functional school restrooms supports student health, dignity, and learning readiness. Guided by the Department of Education’s WinS standards, the study treats school restrooms not as minor support spaces but as essential learning infrastructure. Because gender-based needs may shape restroom experiences, the research asks whether male and female students differ in satisfaction levels and which facility conditions require the most immediate response. The resulting evidence links lived student experience with inspection-based observation, allowing school leaders to compare perception data with actual conditions inside the facilities.

- Descriptive-comparative design was used to measure and compare male and female students’ satisfaction levels.
- The study was conducted at IBIS with 89 SHS respondents (Female n = 48; Male n = 41).
- A Likert-scale Restroom Satisfaction Survey measured four domains: cleanliness, privacy, accessibility, and usability.
- A Restroom Observation Checklist documented functional conditions such as flushing, locks, water availability, and hygiene supplies.
- Weighted means, frequencies, percentages, and an independent-samples t-test were used for analysis.

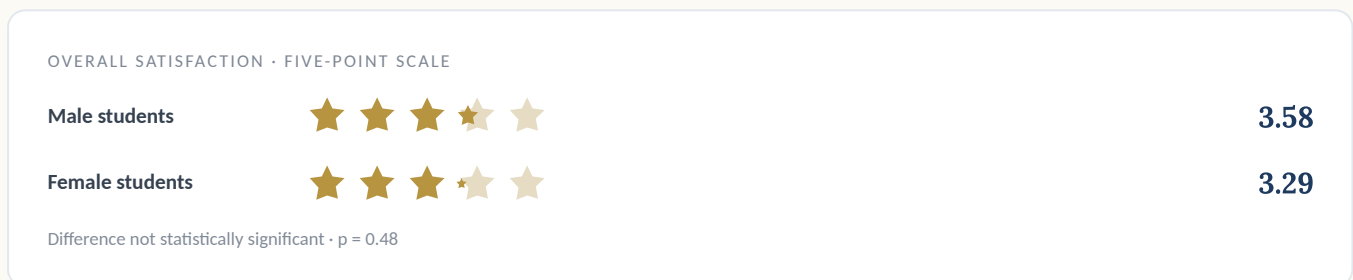


FIG. 1 Weighted-mean comparison across the four domains; male means run slightly higher, but the overall difference is not statistically significant.

KEY FINDINGS

- ◆ The largest response group reported neutral overall satisfaction, indicating mixed student experience rather than strong approval.
- ◆ Male students posted a slightly higher overall mean (3.58) than female students (3.29), but the difference was not statistically significant.
- ◆ Privacy received some of the strongest ratings, yet maintenance-related concerns remained persistent across other domains.
- ◆ Observation data showed frequent issues in toilet flushing, continuous water availability, and regular provision of hygiene supplies.
- ◆ The evidence suggests that facility-management quality matters more than gender alone in explaining satisfaction outcomes.

the privacy but stuck with the plumbing.



FIG. 2 Field inspection photographs of IBIS Senior High School restroom facilities: storage items occupying toilet areas, broken fixtures, graffiti on walls, improvised partitions, and urinal sections in disrepair. These conditions document the cleanliness and usability gaps driving the 3.43 weighted-mean satisfaction rating across 89 student respondents.



FIG. 3 Checklist results reveal which conditions were most frequently not observed during visits — flushing failures dominate.

IMPLICATIONS & RECOMMENDED ACTIONS

- Prioritize repair of flushing systems and routine clog-prevention checks.
- Improve water pressure and ensure continuous water availability during peak-use periods.
- Adopt a checklist-based cleaning and restocking schedule for soap, tissue, and sanitary supplies.
- Strengthen vandalism control and restore locks, dividers, and privacy-related fixtures.
- Use periodic restroom audits to align maintenance work with actual student experience.

 89 RESPONDENTS	48 / 41 FEMALE / MALE	4 DOMAINS	p = 0.48 NO SIG. DIFFERENCE
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“ Restroom adequacy shapes health, dignity, and classroom readiness. When the basic conditions of sanitation fail, student satisfaction reflects not just comfort, but the quality of everyday school management.

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KEYWORDS restroom facilities; student satisfaction; WASH in Schools; sanitation; Senior High School

The Clock is Ticking

Managing the Load: Teacher Support, Time Decisions, and Emotional Well-Being Among Senior High School Students with Multiple Commitments

LIRJ-2026-V111-009 · Quantitative Descriptive-Correlational Study · Received: January 2026 · Accepted: February 2026 · Published: March 2026



48.4%

of students reported physical exhaustion — the highest emotional-strain symptom measured

AT A GLANCE

FRAMEWORK

Job Demands-Resources (JD-R)

DESIGN

Descriptive-correlational

PARTICIPANTS

31 SHS students

FINDING

Resources buffer emotional strain

RESEARCH SUMMARY

This quantitative descriptive–correlational study investigated how time management and perceived teacher or institutional support relate to emotional well-being among Senior High School students managing multiple commitments. Drawing on a survey of 31 SHS students, the study found moderate planning behaviors alongside moderate procrastination tendencies, moderate perceived support, and moderate-to-high emotional strain. Both time management and perceived support were significantly and negatively correlated with emotional strain, suggesting that better student routines and more responsive teacher practices can reduce overload.

OBJECTIVES

- ◆ Profile extracurricular involvement among SHS students in terms of type, number of organizations, and weekly time demand.
- ◆ Measure students' time-management practices, especially planning and procrastination tendencies.
- ◆ Assess perceived teacher and institutional support among students with multiple commitments.
- ◆ Determine the level of emotional strain and test whether time management and support are related to well-being.

CONTEXT & METHOD

Senior High School learners often carry a “double load” by balancing academic requirements with extracurricular participation and leadership roles. Anchored in the Job Demands-Resources model, the study explains how heavy workload and time pressure can intensify exhaustion unless they are buffered by support systems and personal coping resources. In the IBIS setting, the research asks whether planning behaviors and teacher or institutional support function as practical resources that protect emotional well-being, shifting the conversation from student blame toward how personal habits and school support interact.

- The study used a quantitative descriptive-correlational design to describe levels of time management, support, and emotional strain.
- Participants were 31 SHS students from IBIS recruited through purposive sampling, prioritizing those with active school commitments.
- The instrument included an extracurricular profile, a time-management scale, a perceived-support scale, and an emotional well-being index.
- Descriptive statistics (frequencies, percentages, weighted means) were followed by Pearson product-moment correlation at $\alpha = 0.05$.
- Data gathering followed informed-consent and school-ethics procedures.

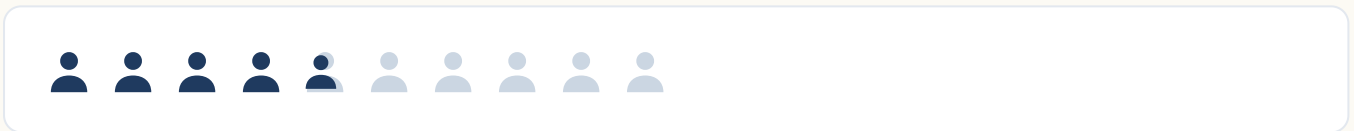


FIG. 1 Physical exhaustion recorded the highest emotional-strain score among the measured symptoms.

KEY FINDINGS

- ◆ Students reported moderate planning behaviors, suggesting that they understand basic scheduling strategies.
- ◆ Procrastination indicators remained elevated, especially feeling overwhelmed and postponing tasks.
- ◆ Perceived teacher and institutional support stayed at a moderate level rather than consistently high.
- ◆ Physical exhaustion recorded the highest emotional-strain score, followed by mood swings and stress.
- ◆ Both time management ($r = -0.46$) and perceived support ($r = -0.39$) were significantly and negatively correlated with emotional strain.

r = -0.46

TIME MANAGEMENT ↔ STRAIN

r = -0.39

PERCEIVED SUPPORT ↔ STRAIN

Both correlations are significant and negative ($\alpha = 0.05$): stronger routines and more responsive support track with lower emotional strain.

IMPLICATIONS & RECOMMENDED ACTIONS

- Integrate short time-management supports such as weekly planning templates and task-time-estimation coaching.
- Adopt clearer flexibility guidelines for official school activities, deadline adjustments, and make-up work.
- Normalize early student-teacher communication about schedule conflicts.
- Strengthen peer support, stress-management sessions, and referral pathways for students with high emotional strain.
- Use future studies with larger samples and reliability checks to deepen the evidence base.

31

PARTICIPANTS

JD-R

FRAMEWORK

$\alpha = 0.05$

SIGNIFICANCE

Pearson

CORRELATION

“ Student overload is not only a problem of personal discipline. It becomes manageable when strong planning habits are matched by responsive teacher support, clear school policies, and timely communication.

RESEARCH TEAM – GRADE 12



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KEYWORDS time management; teacher support; extracurricular involvement; emotional well-being; senior high school

ACKNOWLEDGMENTS & CONTRIBUTORS

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THE CLOCK IS TICKING

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The editorial team gratefully acknowledges the Grade 12 student researchers whose diligence, fieldwork, data gathering, and academic commitment made this inaugural issue possible. We also extend our sincere appreciation to the school leadership, research advisers, teachers, and community stakeholders who supported the conduct of these studies and helped strengthen a culture of inquiry at Ilaya Barangka Integrated School.

This first volume is offered both as a record of student research and as an invitation to continue using evidence-based inquiry in the service of safer schools, cleaner environments, and healthier daily life.

NATIONAL RECOGNITION

We Brought It Home!

2nd Place & Top 10 Nationwide · JA Philippines × J.P. Morgan Chase CareerConnect

Two teams of Grade 12 researchers from Ilaya Barangka Integrated School carried the school's name to the national stage — finishing among the country's very best at the **CareerConnect Capstone Finals**, the flagship program of JA Philippines in partnership with J.P. Morgan Chase. Out of more than 1,000 student-researchers nationwide, both teams advanced to the national finals in Taguig City, and the very projects featured in this issue — Project IBIS and Project SSPI — brought the recognition home.



THE ILAYA BARANGKA DELEGATION AT THE NATIONAL CAREERCONNECT CAPSTONE FINALS · J.P. MORGAN CHASE, TAGUIG CITY



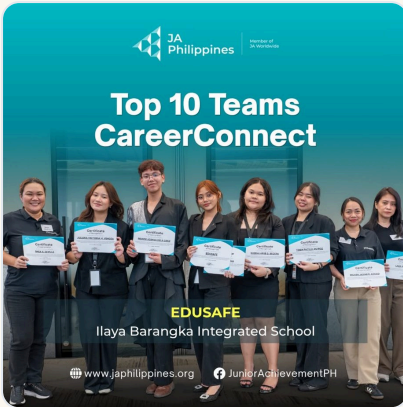
2ND PLACE · NATIONWIDE

Team Liwanags

PROJECT IBIS · MAPPING THE UNSEEN

Researchers · Luis Andrei G. Tiongson, Mery Grace M. Agcol, Jasmine D. Dagli, Casamena D. Nhor, and Jeliane L. Rellin

“Grabe ang naiwi ninyong karangalan! Sulit lahat ng puyat at pressure-cooker Q&A drills natin — you owned that stage.”



TOP 10 · NATIONWIDE

Team EduSafe

PROJECT SSPI · BUILDING TO LAST

Researchers · Juliana Victoria M. Venoza, Trish Faith V. Quiroz, Jenecy A. Babula, Sheena Arsé G. Becera, and Prince Joshua Dela Cruz

“Being in the Top 10 nationwide is a massive victory. You fought hard, defended Project SSPI brilliantly, and made our school so proud.”



Team Liwanags · 2nd Place, Nationwide



Team EduSafe · Top 10, Nationwide



Receiving the Project IBIS award



The Ilaya Barangka delegation

“Super proud of my Grade 12 researchers. Sulit lahat ng puyat, paper revisions, at Q&A practice natin – you all defended your research like true professionals.”

Heartfelt thanks to our School Principal, **Mrs. Ellalyn A. Abutal**, and to every mentor, teacher, and family who stood behind these teams.

– Mr. Franklin D. Garvida, Research Adviser

RESEARCH DEFENSE DAY

Where Inquiry Met Scrutiny

March 25, 2026 · Nine Research Teams, One Evaluation Panel

On March 25, 2026, nine Grade 12 research teams stood before an external evaluation panel to defend the studies featured in this issue. Each team presented its methodology, findings, and recommendations, then fielded questions from panelists drawn from academia and the local research community – the final test before publication.



EVALUATION PANEL · MARCH 25, 2026

Dr. Ma. Lourdes G. Tulagan · Panelist **Ms. Maricel S. Reyes** · Panelist
Mr. Franklin D. Garvida · Research Coordinator
Mr. John Paul D. Infante · Panelist **Dr. Gilbert B. Bautista** · Panelist

RESEARCH DEFENSE DAY

Nine Teams, Nine Defenses



Project IBIS team presenting their geospatial auditing methodology



Group 2 defends "Against the Clock," on waste-collection timing in Barangay Plainview



A researcher fields panel questions on his team's findings



The research team behind "The Clock is Ticking" presents their diagnostic report

"A defense is not the end of inquiry – it is where evidence is tested, sharpened, and made ready to serve. Every team in this room today carried that responsibility well."

With thanks to our evaluation panel and to every adviser who prepared these researchers to stand and defend their work with confidence.

– Mr. Franklin D. Garvida, Research Coordinator

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