

**A - Liberal Arts /
Humanities and Social Sciences**

A - Liberal Arts /Humanities and Social Sciences

From Epistemic Injustice to Artificial Communication: Why False Information Spreads as a Social Solution	1
John Moses A. Chua	
Crisis Management Communication: A Proposal Communication Plan for a Local Aviation Company	10
Connie Lou I. Sorgon	
Improving Arithmetic Proficiency Through Ideal: Evidence from Learners' Mathematics Performance	17
Michelle C. Rubica, Renith S. Guanzon	
Workload and Lifestyle Management of Clinical Instructors in Nursing Schools	24
Jo Ed C. Noblezada, Renith S. Guanzon	
Perceived Effectiveness of Police Visibility Strategies in Barangay 32, Bacolod City	36
Jessa S. Brillantes, Wilfredo O. De La Cruz, Liza Joy B. Barican	
Science Teachers' Readiness and Resilience in the Implementation of MATATAG Curriculum	44
Genovie Gatdula-Tagumand, Leni Carpintero - Francisco	
English Grammar Proficiency of Fourth-Year Education Students	60
Fritz A. Asada, Amber Joy B. Alvarez, Jaffet M. Bacaran, Ronico O. Banquisio, Nathania Nicole S. Clave, Micaella S. De Asis, Ara N. Era, Irene C. Mabasa, Janrel B. Mahinay, Asher Melarin, Cyreljoy E. Banaston, Cherry Mae P. Epacta	
Presidential Candidates' Rhetorical Self-Presentation in the 2022 Philippine Elections	67
Janeson G. Maambong, Sheena Bea L. Deligero, Emmanuel Ken Heloctog	
The Difficulties Encountered by College Students with the Cashiering Services	83
Vanessa M. Pira-an, Sandara Mae H. Alayon, Roselyn N. Baranggan, Noel B. Tausa, Mae Therese A. Peronce	
Flood-risk Resiliency: Framing Adaptive Blue-Green Architecture Solutions to Vulnerable Public Centered Facilities of Bacnotan	96
Victorio Romualdo A. Quijano, Jolly Mae G. Jucar	
A Phenomenological Exploration on the Views of LGB's Love Needs in Polyamorous Relationships	113
Beatrice Nasharette Bambao, Jeska Gayle S. Macabitas, Johanna Lie B. Marzo, Jonelle A. Neverida, Samantha Ysabelle C. Cabanban	
Psychometric Evaluation of the Cross-Cultural Competence Scale: Factor Structure and Invariance Among Filipino Pre-service Teachers	124
Jhaynee Lou P., Tudayan-Del Moral	

A - Liberal Arts /Humanities and Social Sciences

Master Teachers' Technical Assistance Skills and Teachers' Performance in Public Schools 139

Renith S. Guanzon, Mirabelle M. Bendanillo

Savoring Sweet and Sticky: Explicating the Significance of *Sinukmani* to the Culinary Heritage of Rosario, Batangas 152

Vee Jay C. Dalisay, Aljene R. Agapay, Krizelle Mae Cuevas, Jacqueline A. Dequina, Rica Mae H. Imperial, Arianne Matias, Roy Regin Rex A. De Torres

High Awareness, Limited Understanding: Assessing Students' Knowledge of the Bill of Rights in a Philippine State University 167

Ma. Jilyn C. Niedo, Reyna Mae P. Valencerina, John John R. Lomibao, Ariel S. Bulao, Ryan Rhy M. Aquino, Danschiel Genre Dean B. Ramos

Literacy, Ethical Awareness, and Readiness for AI Integration in Lipa City Colleges: Basis for an Institutional AI Policy 173

April D. Acielo

Pagbangan: Optimism, Resilience, and Emotional Coping Among Filipino Survivors of Adversity 182

Carmela Grace M. Gumawid*, Ramaica Maneclang, Richelle S. Ocsillos, Cynthia P. Lopez, Francis Ivan D. Bolleser

Utilization of Artificial Intelligence in Academic Work Among Criminology Students at Tomas Claudio Colleges 192

Ma. Charisse B. Vedaña*, Jhason E. Rodriguez, Andrea Diane T. Iposada, Ma. Roselle P. Limon, John Gianne B. Perdiguerra, Margee Lei Guada L. Benavidez

Gender Differences in Crime Commission and Victimization: A Comparative Analysis 203

Ma. Charisse B. Vedaña, John Patrick B. De Jesus, Antonio R. Mateo, Glenn B. Antipolo, Jhason E. Rodriguez, Christian G. Martinez, Marie Maurine G. Murillo

Electoral Participation in Select Mainstreamed Indigenous Communities in the Northern Philippines 214

Athena Franxia Calata, Jireh Grace Dumalanta, Isaac Palattao, Christian Bosch Taylan

A Culturally Grounded Framework of Mental Well-being in an Indigenous Community in Cagayan, Philippines 226

Patrick Dayag, Stephanie Louj Paa, Benedict Zulueta

A - Liberal Arts /Humanities and Social Sciences

A Tale Carved in Stone: Development of a Storybook Based on the Lakay-Lakay Folklore of Claveria, Cagayan	237
Ayesha Yasmeen H. Eugenio, Shara Mae E. Agustin, Heart A. Evangelista, Jenny Rose B. Zinampan, Kristine Mae R. Auayang, Jennifer C. Bangi	
Utilization of Lipa City Colleges' Library Reference Online Service (LibROS)	248
Marebel U. De la Cruz, Jackelyn E. Capuno	
Teaching Research in Senior High School: A Qualitative Exploration of Teachers' Lived Experiences	263
Eduardo P. Santillan, Gina S. Malonzo	
Bridging Police and Community Perceptions on Crime Prevention Strategies in Dagupan City, Philippines	279
Danschiel Genre Dean Ramos	
Insights Into Students Violating School Rules: Proposed Intervention Strategies for Improvement	290
Jesusa S. Domantay	
Student Attrition Across Academic Programs: A Survival Analysis	297
Joseph B. Campit	
Need-Supportive Leadership in Educational Settings: A Self Determination Theory-Based Review	316
Jonee O. Miranda, Dorothy Joy Macaranas	
Visual Identity Assets for Higher Education Institutions	323
Edric S. Torres	
Localizing the Sustainable Development Goals: An Analysis of SDGs Implementation in the Municipality of Labrador, Pangasinan	339
Jeanica C. Joson, Darwin M. Juguilon, Ma. Theresa H. Biazon, Alvin O. Carillo, Ma. Emma J. Tuvera	
Mental Health and Service Quality of Student Peer Counselors in an Autonomous Higher Education Institution	354
Paulita G. Boado, Imelda E. Cuartel, Glory Ann B. Feliciano, Margie D. Viado, Carmelo John E. Vidal	
Perceptions, Motivations, and Academic Performance Among First-Year Dental Students: Evidence from a Philippine Medical University	362
Alvin M. Laxamana	

A - Liberal Arts /Humanities and Social Sciences

Difficulties Faced by Electoral Boards in the Barangay Elections 367

Julius P. Antenero, Yasmin Pascual-Dormido

In the Context of Digital Transformation, the Inadequacy of Family-based Elderly Care, and the Supplementation of Community Functions 380

Shen Zhaolong

Structural Gravity of Lived Experience: Introducing "Social Work Integrated Phenomenological Analysis" (SW-IPA) as a Methodological Innovation for Researching Marginalized Transitions 388

Yingying Liu

From Epistemic Injustice to Artificial Communication: Why False Information Spreads as a Social Solution

John Moses A. Chua

Faculty of General Education, University of Perpetual Help – Dr. Jose H. Tamayo Medical University, Laguna, Philippines
Email chua.johnmoses@mu.uphsl.edu.ph

Abstract

This paper argues that misinformation spreads not only because people believe false claims, but because false information can serve important social functions. First, I show that common approaches to misinformation focus too much on error and correction, and not enough on why falsehoods travel so effectively. Second, drawing on Miranda Fricker and José Medina, I argue that communication already takes place within unequal credibility relations, where some voices are trusted more than others. Third, using Elena Esposito's idea of artificial communication, I show that communication can succeed through circulation, response, and coordination even without shared understanding. Bringing these together, I argue that misinformation works as a social solution: it helps people orient themselves, coordinate reactions, and affirm group belonging. This explains why correction alone often fails. Misinformation persists not simply because it is believed, but because it is socially functional under conditions of epistemic inequality and communicative systems organized around uptake rather than understanding.

Keywords: fake news, misinformation, epistemic injustice, artificial communication, credibility economy

1. Introduction

Why does false information continue to spread even in environments saturated with corrections, explainers, fact-checks, and supposedly verified sources? At first glance, the answer seems obvious: people are misinformed, inattentive, biased, or irrational. On this familiar picture, misinformation persists because individuals fail to absorb the right content (see Choi et.al., 2023; Simis et.al., 2016). The solution therefore appears equally obvious. One must improve media literacy, distribute better information, and correct false claims quickly enough to prevent their further circulation. Yet this picture is increasingly unsatisfying. It does not explain why certain falsehoods remain socially adhesive even after they have been publicly challenged. It does not explain why some claims travel faster than more accurate alternatives (Vosoughi et.al., 2018). Nor does it explain why particular groups predictably receive uptake, trust, and repetition while others do not. A purely deficit-based account of misinformation may identify an epistemic problem, but it does not yet identify the social mechanism by which false information becomes durable.

This paper argues that misinformation persists not merely because audiences lack facts, but because contemporary communicative systems often reward speed, affect, legible simplification, and continued responsiveness. Under such conditions, misunderstanding need not be a communicative failure. It can become socially productive. To understand this, we need to move beyond the question of why individuals believe falsehoods and ask a different question: why do falsehoods travel so well? My claim is that misinformation spreads because two conditions increasingly converge. First, credibility is not distributed evenly across speakers and groups. As Miranda Fricker and José Medina help us see, who gets heard, trusted, doubted, or ignored is patterned by power rather than determined solely by the force of reasons (Fricker, 2007; Medina, 2013). Epistemic injustice therefore shapes the very field in which information circulates. Some agents encounter chronic credibility deficits, while others benefit from credibility excesses that allow their claims to travel with little friction. Second, as Elena Esposito's work on artificial communication suggests, communication can successfully continue even without shared understanding. In many contemporary settings, communicative success is measured less by truth-tracking or mutual comprehension than by circulation, coordination, responsiveness, and uptake. Under these conditions, a claim can function effectively even when it is epistemically defective (Esposito, 2022).

Taken together, these two conditions make possible a different model of misinformation. False information spreads not only as error but as a social solution. It provides fast intelligibility

where uncertainty is high, coordination where trust is fragile, and affiliation where identity is contested. It offers simple moral legibility, actionable cues, and group alignment in communicative environments already damaged by unequal credibility relations and increasingly organized around response rather than understanding. This is why fact-checking alone often fails. It addresses the propositional content of a claim, but leaves intact the credibility economy in which some voices are pre-emptively amplified and others pre-emptively discounted, as well as the communicative conditions in which speed and uptake matter more than shared understanding. In that sense, misinformation is not merely tolerated by contemporary systems; it is often functionally advantaged within them.

The paper proceeds in four steps. First, I distinguish between the accuracy problem of why people believe falsehoods and the system problem of why falsehoods circulate so effectively. Second, I reconstruct epistemic injustice as a problem of credibility economy, drawing especially from Fricker and Medina. Third, I turn to Esposito's concept of artificial communication to show how communication can succeed without shared understanding. Fourth, I synthesize these frameworks to argue that misinformation spreads as a social solution through three main functions: *orientation*, *coordination*, and *affiliation*.

This paper has four objectives. First, it distinguishes the accuracy problem of misinformation from the system problem of misinformation: not only why people believe falsehoods, but why falsehoods travel effectively. Second, it explains how epistemic injustice structures the credibility economy in which information circulates, such that some voices are over-trusted while others are prematurely discounted. Third, it uses Esposito's account of artificial communication to show how communication can remain socially effective even without shared understanding. Fourth, it argues that misinformation spreads as a social solution because it performs three functions: orientation, coordination, and affiliation.

2. What Standard Misinformation Models Miss

A common way of approaching misinformation is to treat it mainly as an accuracy problem. On that model, false information spreads because people lack the relevant facts, fail to evaluate evidence properly, or are insufficiently trained in media literacy. The question then becomes: why do people believe what is false? One need is to distinguish that question from a different one, namely the system problem: not why falsehoods are believed, but why falsehoods travel well. Once that distinction is in place, the weakness of standard interventions becomes clearer. Most remedies still target the first problem—fact-checking, correction, source verification, media literacy—while leaving the second largely untouched.

This matters because the standard model assumes an overly simple picture of communication. It presumes that communication succeeds when accurate content passes from one mind to another with enough fidelity, and that misinformation is therefore just a distortion to be corrected. But that assumption becomes unstable once we take seriously Elena Esposito's claim that the web is "driven by communication, not by meaning and understanding." (Esposito, 2022, 5). That is a sharp formulation of the environment in which misinformation now circulates: what matters is not always shared understanding, still less truth, but movement, uptake, reaction, and continuation. Under such conditions, a message can succeed socially even if it is epistemically defective.

Esposito presses the point further by challenging the older assumption that communication must preserve common content between participants. As she notes, many theories of communication assume shared thought, but her reconstructed account "requires no sharing of thoughts among participants." (Esposito, 2022, 5). That line is especially useful, because it helps explain why misinformation cannot be analyzed only in terms of mistaken belief. A falsehood may circulate effectively not because everyone understands it in the same way, but because it still coordinates response. It can orient attention, trigger outrage, supply a usable frame, and sustain group alignment even where understanding is partial, unstable, or absent.

Once this is granted, the philosophical task changes. We are no longer asking only why some individuals fail to track truth. We are asking what kinds of communicative environments reward certain messages with persistence and reach. As such we can establish relevant features: contemporary systems reward *speed*, *affect*, and *legible simplification*. In such settings, misinformation often behaves less like a mere belief error and more like a socially efficient device. It reduces ambiguity

quickly, gives a moral shape to events, and offers recipients something actionable to do—share, condemn, distrust, align. That is why the deeper issue is functional, not merely cognitive.

A good theory of misinformation, then, has to explain at least three things. First, *resilience*: why false claims endure even after correction. Second, *velocity*: why some claims move rapidly while slower, more careful claims lag behind. Third, *selective uptake*: why the same claim is taken as obvious by some, doubtful by others, and unintelligible by still others. These are the minimal criteria for explanation. A theory that can explain only why people err, but not why error circulates unevenly and effectively, remains incomplete.

This also shows why “fact-check harder” is not yet a sufficient philosophical response. Correction addresses content, but not the conditions under which content acquires traction. A claim may survive not because it is well supported, but because it is affectively legible, fast to process, easy to repeat, and well suited to a communicative setting that prizes reaction. What spreads, in other words, is often what works within the system. The problem is therefore not exhausted by false belief. It is rooted in an environment where communicative success is increasingly detached from understanding and truth-tracking.

That conclusion prepares the next step of the argument. If misinformation travels not only because of what it says but because of the conditions under which it is received, then we must ask who is already positioned to be heard, believed, ignored, or discounted within those conditions. That is where the framework of epistemic injustice becomes indispensable. As Fricker puts it, testimonial injustice involves a person being “wronged in her capacity as a knower.” (Fricker, 2007, 44). The next section will show that misinformation spreads more easily where credibility is already distributed unequally.

3. Epistemic Injustice as Credibility Economy

If the previous section showed that misinformation cannot be understood only as an accuracy problem, the next step is to ask what sort of communicative field falsehood enters in the first place. It does not enter a neutral space in which all speakers are heard equally and all claims are assessed on their merits alone. Rather, it enters a socially stratified field in which some speakers begin with presumptive authority while others begin under suspicion. This is where the framework of epistemic injustice becomes indispensable. What Fricker and Medina help us see is that the circulation of information is always conditioned by prior patterns of epistemic recognition. Before a claim is judged true or false, its speaker is already being judged credible or not, authoritative or not, intelligible or not. That is why misinformation must be analyzed not only in terms of content, but also in terms of credibility.

Fricker’s central contribution is to show that testimonial exchange is vulnerable to systematic moral and epistemic distortion when identity prejudice enters credibility judgment. Her famous formulation is precise: testimonial injustice occurs when a speaker is “wronged in her capacity as a knower.” (Fricker, 2007, 44). Elsewhere she writes that if prejudice works against the speaker, then the hearer makes an “unduly deflated” judgment of credibility and the speaker is thereby wrongfully undermined as a knower (Fricker, 2007, 17). The importance of this claim lies in its refusal to reduce the problem to ordinary error. A hearer may simply be mistaken about someone’s expertise; that would be epistemically unfortunate, but not yet testimonial injustice. For Fricker, the distinct wrong appears when credibility is deflated through socially patterned prejudice. The issue is not merely that the hearer gets something wrong, but that the speaker is injured in a humanly significant capacity.

This injury cuts deeper than a missed exchange of information. Fricker insists that to be wronged as a knower is to be wronged in “a capacity essential to human value.” (Fricker, 2007, 44). That is why testimonial injustice is not exhausted by the hearer’s missing out on knowledge. Its primary harm falls on the speaker. Indeed, Fricker goes so far as to say that when someone suffers testimonial injustice, they are “degraded qua knower” and, through that degradation, symbolically degraded as human (Fricker, 2007, 45). This is crucial for the present paper because it shows that unequal credibility is not a secondary distortion added onto communication after the fact. It belongs to the structure of communication itself. Some subjects are not simply disagreed with; they are received under conditions that make their speech harder to count as knowledge at all.

Fricker’s discussion also helps clarify why the phrase *credibility economy* is apt. In face-to-face and public exchanges alike, hearers do not encounter speech in a vacuum. They rely on social

cues, stereotypes, and background assumptions that help them assign trust rapidly. Fricker explicitly notes that prejudice can operate by shaping credibility judgment at the level of perception itself: it “distorts the hearer’s perception” of the speaker (Fricker, 2007, 36). This point matters because it means that epistemic inequality is often prior to explicit belief. A person may sincerely endorse egalitarian norms and still participate in testimonial injustice because social perception is already structured by sedimented images of who sounds informed, serious, objective, reasonable, or trustworthy. In that sense, credibility is socially circulated before arguments are fully heard.

At the same time, Fricker’s account remains deliberately focused. She argues that the primary form of testimonial injustice is a matter of “credibility deficit and not credibility excess.” (Fricker, 2007, 21). That restriction is philosophically important, but it also leaves open a broader structural question: can we fully understand epistemic injustice if we focus only on the one who is unfairly deflated and not also on the one who is routinely inflated? Medina’s intervention is decisive here. He agrees with Fricker’s basic insight, but insists that credibility relations are not adequately understood in dyadic or purely ethical terms. His revision is memorable: one cannot see interlocutors only in “epistemic color” and “ethical color”; one must also see them in “political color.” (Medina, 2013, 87). That is, credibility judgments are always entangled with broader relations of power, group position, and social imagination.

This expansion matters because it allows us to redescribe testimonial injustice as a problem not merely of unfair interpersonal assessment but of patterned social distribution. Medina argues that credibility is interactive and comparative, and that what guides justice here is “not equal distribution but proportionality.” (Medina, 2013, 63). In other words, the relevant question is not whether everyone gets the same amount of trust, but whether credibility is proportionate to epistemic merits rather than to identity-coded presumptions. This move is particularly apt for the present argument. It lets us say that misinformation circulates in a credibility economy already marked by disproportions: some groups are habitually over-credited, others habitually under-credited, and these asymmetries shape what can travel, stick, and matter publicly.

Medina pushes the point further by arguing that there is an “intimate relation between credibility excesses and credibility deficits.” (Medina, 2013, 63). That relation becomes especially clear in situations of oppression, where social disparities generate corresponding epistemic disparities. His claim is not simply that some people are unfairly trusted while others are unfairly distrusted, but that these two phenomena are structurally linked. The authority of the privileged does not merely coexist with the disqualification of the marginalized; it helps produce and stabilize it. For that reason, Medina concludes that epistemic injustice includes not only epistemic and ethical dysfunction, but also “political dysfunction.” (Medina, 2013, 87). The injustice cannot be properly understood as occurring only between isolated individuals, because it is grounded in group-differentiated social habits that precede any one exchange and continue beyond it.

This is the point at which the present paper’s argument becomes sharper. If credibility is socially patterned before information is evaluated, then misinformation does not spread through an even field of rational assessment. It enters a space already damaged by unequal authority, residual prejudice, and asymmetrical uptake. Some claims will be believed too easily because they come from speakers or styles already coded as authoritative. Others will be dismissed too quickly because they come from speakers or groups whose epistemic standing has already been weakened. The spread of false information is therefore not simply a story about bad evidence or gullible audiences. It is also a story about damaged credibility relations. Misinformation travels through a field in which some voices are amplified in advance and others discounted in advance. That is what I mean by calling epistemic injustice a problem of credibility economy. And that is why the next step of the argument must turn to Esposito: once this unequal field is in place, communication need not secure shared understanding in order to remain socially successful.

4. Artificial Communication and Success without Shared Understanding

If epistemic injustice explains why the communicative field is already uneven before claims are assessed, Esposito helps explain a second and equally important feature of contemporary misinformation: communication can remain socially effective even where shared understanding is thin, fragmented, or absent. This is the crucial step beyond the standard model. False information does not need to persuade everyone in the same way, or even mean the same thing to all who circulate it, in

order to function successfully. It only needs to continue generating uptake, response, alignment, and consequences. In this sense, the persistence of misinformation is tied not only to what people believe, but to a transformation in the operative conditions of communication itself.

Esposito states this shift very sharply in her discussion of the contemporary web. The web, she writes, “is driven by communication, not by meaning and understanding.” (Esposito, 2022, 5). That line is especially useful here because it names what a purely epistemic account tends to miss. In digital environments, messages are often selected, amplified, and repeated not because they secure mutual understanding or track truth more effectively, but because they provoke action, maintain attention, and sustain circulation. Communication, in such contexts, is less a matter of shared content than of ongoing responsiveness. A post that outrages, reassures, polarizes, or signals belonging may succeed communicatively even if its propositional content is false or only partially grasped.

This becomes clearer once Esposito reconstructs communication through Niklas Luhmann rather than through models centered on shared inner content. She writes that Luhmann’s concept of communication “is not based on psychic content and requires no sharing of thoughts among participants.” She immediately adds that “a common identity of information among participants is itself not required for communication.” (Esposito, 2022, 7). These two claims are decisive. If communication does not require shared thought, and if identical information across participants is unnecessary, then the success of a communicative event cannot be measured simply by sameness of understanding. A message can work socially even when different recipients take different things from it. What matters is that they continue to respond to it as communication.

Esposito makes the point even more directly when she explains that communication comes about “not when somebody says something, but when somebody understands that someone said something.” (Esposito, 2022, 7). The shift is subtle but powerful. Communication is defined not from the side of the speaker’s intention, but from the side of reception. Someone may utter, post, share, or imply something, but communication occurs only when a receiver takes it up as a communicative event. And that uptake need not reproduce the issuer’s thought. As Esposito puts it, communication takes place “whatever this information is to the receiver, and whatever the issuer had in mind (or indeed did not have in mind).” (Esposito, 2022, 7). That claim is vital for understanding misinformation. The falsehood need not transmit a stable meaning from one mind to another. It can circulate through heterogeneous interpretations and still retain social force.

Esposito underlines this consequence: “The thoughts of the participants are not part of communication itself.” This means that communication theory should not begin by asking whether inner meanings have been perfectly matched. Instead, it should ask how communication continues despite interpretive variation. Hence her next formulation: the task is to analyze “how this diversity of understandings can still produce forms of coordination.” (Esposito, 2022, 7). That sentence gives us the bridge from Esposito to misinformation. False information spreads not only because it is believed, but because it coordinates. It can organize attention, unify suspicion, supply an enemy, stabilize an in-group narrative, or trigger patterned reactions even where users do not fully understand it in the same way. What matters is not semantic uniformity but coordinated consequence.

This helps explain why misinformation often appears socially robust even after factual correction. A correction may target the proposition, but leave the coordination intact. If a false claim already orients a group toward who should be trusted, who should be blamed, and what counts as obvious, then its communicative success exceeds its truth-value. It functions as a socially usable cue. Under Esposito’s model, this is not an anomaly but a predictable feature of communicative systems that privilege circulation and response. The question is no longer whether everyone interprets the claim identically. The question is whether the claim continues to bind reactions together.

Esposito’s remarks on algorithms deepen this point further. What makes algorithms socially relevant, she argues, is not that they reproduce human intelligence, but that they participate in communicative practices. They exhibit “communicative competence” rather than intelligence in the strong sense, and the wider social system may become “smarter” not because intelligence is duplicated, but because “it creates a new form of communication using data in a different way.” (Esposito, 2022, 5). This matters because contemporary misinformation spreads through infrastructures increasingly organized around precisely such communicative competence: recommender systems, engagement loops, virality metrics, and algorithmic selection. These systems do not need to understand content as humans do. They only need to facilitate circulation, connection,

and patterned response. In such an environment, false information can be highly successful without ever passing through the older ideal of rational, shared comprehension.

The upshot is not that understanding has disappeared, nor that truth no longer matters. Esposito herself cautions that “not every interpretation is socially acceptable, and explicit misunderstandings are an exception, rather than the rule.” (Esposito, 2022, 7). The point, rather, is that understanding is no longer the sole or primary measure of communicative success. Communication can remain operative across differences in interpretation so long as it continues to generate usable responses. This is precisely what makes misinformation so difficult to counter by correction alone. If false information now circulates in systems where success is measured by response, continuity, and coordination, then its persistence becomes intelligible even when its content has been publicly debunked.

This is why Esposito is indispensable to the present argument. Fricker and Medina show that the field of uptake is already structured by unequal credibility. Esposito shows that once communication is organized around uptake rather than shared understanding, misinformation can function effectively even in the absence of epistemic adequacy. It need not produce common knowledge; it only needs to produce common orientation. The next section brings these insights together and argues that, under conditions of epistemic inequality and artificial communication, misinformation spreads as a *social solution*—one that offers orientation, coordination, and affiliation even when what it offers is false.

5. Misinformation as a Social Solution

We can now state the paper’s central claim more directly. Misinformation spreads not only because some people believe false propositions, but because, under conditions of epistemic inequality and artificial communication, false information can perform socially useful work. The previous two sections established the two halves of this claim. On the one hand, as Fricker and Medina show, communicative life is structured by unequal credibility: some subjects are heard under deficit, others under excess, and these disparities are patterned by power rather than by epistemic merit alone. On the other hand, as Esposito shows, communication can remain effective even where understanding is not shared, since the communicative environment is often “driven by communication, not by meaning and understanding.” (Esposito, 2022, 5). When these two conditions converge, misinformation becomes more than a cognitive mistake. It becomes a social solution.

The phrase *social solution* should be taken in a precise sense. It does not mean that misinformation genuinely solves the underlying problems to which it responds, still less that it is normatively justified. It means, rather, that misinformation often provides a usable response to practical and symbolic difficulties generated by uncertainty, distrust, fragmentation, and unequal participation in shared interpretive life. In such conditions, false information may not be epistemically good, but it can still be socially serviceable. It can tell people where to stand, how to react, whom to trust, and what events are supposed to mean. That is why it proves so durable. It does not persist only by escaping correction; it persists because it gives people *something they can do with it*.

This claim becomes clearer if we treat the spread of misinformation as the product of two interacting conditions. The first is *credibility asymmetry*. Fricker’s account of testimonial injustice shows that a speaker can be “wronged in her capacity as a knower” (Fricker, 2007, 44), not because reasons have been impartially weighed and found wanting, but because prejudice has already shaped the hearer’s uptake. Medina radicalizes this point by arguing that there is an “intimate relation between credibility excesses and credibility deficits” (Medina, 2013, 62). The problem is therefore not merely that some voices are unfairly discounted. It is also that other voices are unfairly elevated. And since, as Medina says, the relevant norm is “not equal distribution but proportionality” (Medina, 2013, 63), we can say that misinformation spreads through environments where trust is already distributed disproportionately. Some speakers, tones, and narratives arrive pre-authorized; others arrive pre-weakened. The second condition is success without shared understanding. Esposito argues that communication “requires no sharing of thoughts among participants,” and that the task is to understand “how this diversity of understandings can still produce forms of coordination” (Esposito, 2022, 7). Once communication is organized this way, a falsehood need not mean the same thing to all who circulate it. It only needs to generate sufficiently coordinated uptake.

Taken together, these two conditions explain why misinformation is often functionally advantaged. It is advantaged not because people prefer error as such, but because false information can satisfy three urgent social functions with remarkable efficiency: *orientation*, *coordination*, and *affiliation*.

The first function is *orientation*. In complex or unstable situations, people want a legible account of what is happening. Misinformation often supplies that quickly. It reduces uncertainty by converting diffuse events into a simple story with recognizable causes and moral direction. A rumor, conspiracy claim, or misleading narrative may be epistemically thin, but it can still offer immediate intelligibility. It names the threat, identifies the motive, supplies the villain, and closes interpretive gaps that would otherwise remain open. In contexts where institutional credibility is fragile or interpretive resources are already uneven, rapid legibility has obvious appeal. A false claim can therefore outcompete a more accurate but slower and more complicated account because it does something the latter often does not: it lets people feel that they now understand the situation well enough to respond.

The second function is *coordination*. Misinformation does not merely describe a world; it organizes conduct within it. Here Esposito's emphasis on communication from the side of uptake is especially important. Communication occurs, she writes, "not when somebody says something, but when somebody understands that someone said something" (Esposito, 2022, 7). That means a message becomes socially effective when it is received as something to which one can respond. Misinformation often excels at this. It tells people whom to distrust, what to share, what to fear, which institution is compromised, which group is dangerous, or which event confirms what "we" have long known. It need not secure uniform understanding in order to do this. Different recipients may hear different implications, but the practical effect can still converge. This is why false information can retain force even after being debunked. The debunking addresses the proposition, but the original message may already have achieved coordination by shaping suspicion, attention, and reaction.

The third function is *affiliation*. Misinformation can mark belonging. It can signal who is inside and who is outside, who is awake and who is naive, who can be trusted and who has allegedly been captured by hostile interests. In this respect, the spread of misinformation is inseparable from the politics of recognition. Medina's insistence that one cannot see interlocutors only in epistemic or ethical terms but also in "political color" (Medina, 2013, 86) is especially helpful here. False information often circulates as a badge of identity before it circulates as a tested belief. Sharing it can become a way of performing loyalty, solidarity, grievance, or resistance. This is why many falsehoods remain adhesive even when their evidential basis collapses. Their role is no longer exhausted by the truth of the claim. They have become part of the social texture of belonging.

These three functions also explain why correction alone so often disappoints. Fact-checking is necessary, but it typically addresses only the content of the claim. It does not directly alter the damaged credibility economy into which the claim entered, nor does it change the communicative conditions under which the claim became effective. A correction may show that a proposition is false, yet fail to replace the orientation the falsehood supplied, fail to interrupt the coordination the falsehood produced, and fail to dislodge the affiliation the falsehood signaled. This is why standard responses often feel strangely weak in practice. They are not weak because truth is irrelevant, but because the phenomenon they confront is not merely propositional. Misinformation persists because it is doing more than asserting something false.

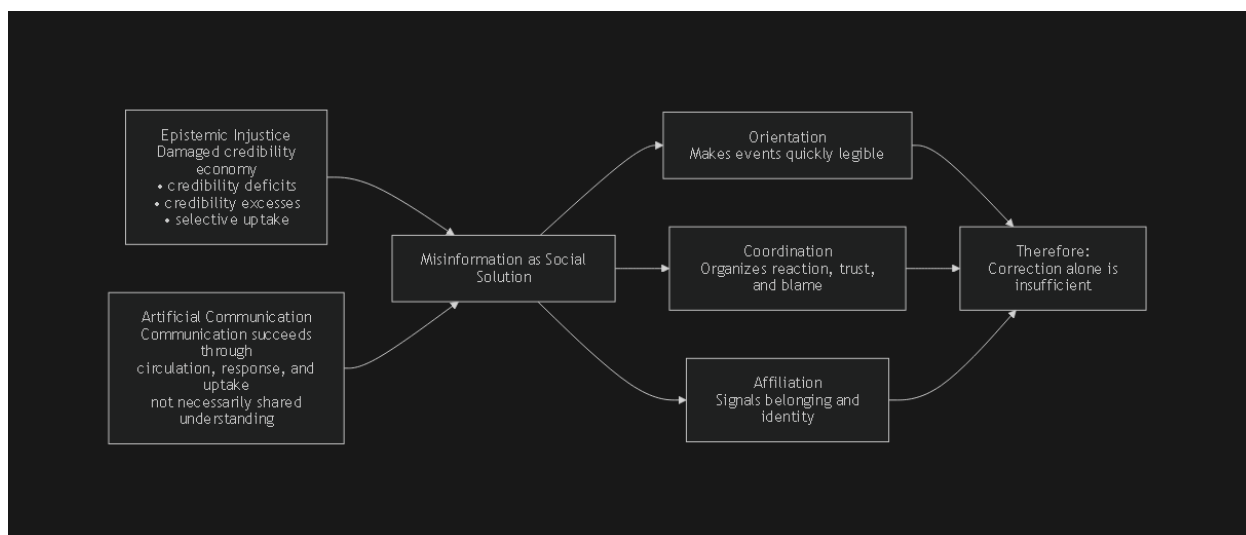


Figure 1. Misinformation as social solution schema

We can now see the full force of the paper's argument. Fricker and Medina explain why communicative uptake is already unequal before information is assessed: some knowers are downgraded, others over-credited, and these asymmetries are socially reproduced. Esposito explains why communication can continue successfully even without shared understanding: coordinated response matters more than semantic identity. Once these conditions are joined, misinformation becomes intelligible as a social solution. It offers fast intelligibility where the world feels unstable, coordinated reaction where trust is fractured, and identity confirmation where belonging is contested. That, more than mere ignorance, is what makes it travel so well.

6. Conceptual Findings and Implications

The conceptual finding of this paper is that misinformation should not be understood only as a failure of belief, evidence, or media literacy. It should also be understood as a socially functional form of communication. Under conditions of epistemic inequality, false information enters a credibility economy in which some speakers and narratives are trusted too easily while others are discounted too quickly. Under conditions of artificial communication, false information can also continue to circulate successfully even when shared understanding is thin or absent. When these two conditions converge, misinformation becomes socially durable because it performs three functions: orientation, coordination, and affiliation.

First, misinformation provides orientation. It gives people a quick and usable interpretation of uncertain events. Even when the interpretation is false, it may still reduce ambiguity, identify an enemy, supply moral direction, and make a confusing situation feel intelligible. Second, misinformation provides coordination. It tells people what to share, whom to distrust, what to fear, and how to respond. This explains why a false claim may continue to matter socially even after it has been factually corrected. Third, misinformation provides affiliation. It allows people to signal belonging, loyalty, grievance, or resistance within a group. In this sense, misinformation often circulates not only as a claim about the world, but as a marker of collective identity.

These findings imply that responses to misinformation should not rely on correction alone. Fact-checking remains necessary, but it is insufficient when misinformation has already supplied orientation, coordination, and affiliation. A more adequate response must also address the social functions that misinformation performs. First, corrective efforts should offer alternative forms of orientation, not only negative debunking. They should help people understand confusing events without relying on false simplifications. Second, interventions should attend to credibility relations. If some communities distrust official sources because they have repeatedly experienced exclusion or dismissal, then correction must be accompanied by the repair of trust and epistemic recognition. Third, media literacy should be expanded beyond source-checking and factual verification. It should also train audiences to ask what a piece of misinformation is doing socially: what identity it affirms, what reaction it coordinates, and what uncertainty it claims to resolve.

These implications are recommendations only in a conceptual sense. The paper does not claim to offer an empirical policy program. Rather, it clarifies what any adequate response to misinformation must consider. If misinformation persists because it is socially useful, then an adequate response must not only correct false content. It must also understand and address the social need that made the falsehood attractive in the first place.

References:

- Choi, S., Anderson, A. A., Cagle, S., & Long, M. (2023). Scientists' deficit perception of the public impedes their behavioral intentions to correct misinformation. *PLOS ONE*, 18(7), e0287870.
- Esposito, E. (2022). *Artificial communication: How algorithms produce social intelligence*. Cambridge, MA: MIT Press.
- Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. New York: Oxford University Press.
- Medina, J. (2013). *The epistemology of resistance: Gender and racial oppression, epistemic injustice, and resistant imaginations*. New York: Oxford University Press.
- Simis, M. J., Madden, H., Cacciatore, M. A., & Yeo, S. K. (2016). The lure of rationality: Why does the deficit model persist in science communication? *Public Understanding of Science*, 25(4), 400-414.
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146-1151. <https://doi.org/10.1126/science.aap9559>.

Crisis Management Communication: A Proposal Communication Plan for a Local Aviation Company

Connie Lou I. Sorgon

STI West Negros University, Bacolod City

Email : clisorgon427@gmail.com

Abstract

Aviation schools are ground schools for those who aspire to become pilots, cabin crew, and aircraft maintenance professionals. Although air transportation is the safest mode, the industry remains among the most vulnerable during crises. Most companies acknowledge that the public expects immediate release of information when accidents occur, but matters of reputation may take precedence over this expectation. During the incident in Pangasinan on December 15, 2021, news of the accident circulated widely in print and online. The absence of public relations created a lack of framework in communicating the crisis. The purpose of this study is to develop a proposed communication plan for the local aviation company, taking into account the units and personnel involved and the communication challenges faced by the aviation industry. The study was a qualitative single-case study. The data were collected through documents to be analyzed and through interviews. The results came from a crisis management team with no public relations experience and focused solely on disaster management. There are also challenges faced by the aviation company, including overlapping responsibilities during the incident. These answers were formulated as part of a crisis communication plan for the aviation company.

Keywords: Crisis Communication, Aviation, Communication Management, Communication, Public Relations

1. Introduction

Aviation schools serve as essential ground-training institutions for aspiring pilots, cabin crew, and aircraft maintenance professionals. While air transportation is statistically the safest mode of travel, the aviation industry remains uniquely vulnerable to high-impact crises. In the Philippines, this vulnerability has been highlighted by a series of recent tragic incidents, including a fatal helicopter crash in Guimba, Nueva Ecija, on February 2, 2025; a private plane crash in Ampatuan, Maguindanao del Sur, on February 6, 2025; and the loss of a co-pilot in an FA-50 fighter jet crash in Bukidnon on March 6, 2025. Such events not only pose immediate safety risks but also threaten the long-term reputation and public trust of aviation organizations.

Crisis communication has therefore become a critical component in the aviation industry. A crisis is commonly defined as an unexpected event that threatens organizational operations and requires immediate response (Mudiardjo et al., 2022). Beyond its disruptive nature, a crisis can also provide opportunities for organizational learning and improvement when managed effectively (Nwogwugwu, 2022). In this context, crisis communication refers to the strategic dissemination of information to stakeholders in order to minimize uncertainty, manage public perception, and protect organizational credibility (Jovanovis, 2024; Grossman, 2023).

Effective communication is an indispensable competency in aviation. The Civil Aviation Authority of the Philippines (CAAP) emphasizes that the timely and accurate dissemination of information is paramount during emergencies. While major international carriers often possess robust Public Relations (PR) departments to manage these scenarios, small-scale local aviation companies frequently lack dedicated crisis communication structures. This organizational gap often leads to information blockages, public speculation, and a reliance on reactive rather than proactive communication strategies.

To address these challenges, the research is anchored in the **Situational Crisis Communication Theory (SCCT)**. SCCT provides a framework for selecting appropriate communication strategies—ranging from denial to apology and corrective action—based on the nature of the crisis and the degree of responsibility attributed to the organization. By analyzing the legal protocols, involved personnel, and specific challenges faced by a small aviation company, this study aims to develop a comprehensive communication plan. Ultimately, the proposed interventions

aim to enhance institutional transparency, meet regulatory requirements, and maintain stakeholder trust through compassionate, coordinated messaging.

2. Objectives

This research aimed to develop a proposed communication plan in crisis management for accidents for a local aviation company. It addresses the following objectives:

- 2.1 To analyze the existing legal protocols and internal communications followed by the local aviation company when disseminating information to stakeholders during a crisis
- 2.2 To identify the roles, responsibilities, and challenges of the personnel and units involved in managing crisis communication activities within a small-scale aviation setting
- 2.3 To develop a proposed communication plan and strategic interventions grounded in Situational Crisis Communication Theory (SCCT) to improve the company's performance and stakeholder trust during aviation accidents.

3. Materials and methods

This research employed a qualitative single-case study design to investigate the crisis communication practices of a local aviation company in Metro Manila, Philippines. This approach was selected to provide an in-depth exploration of the "how" and "why" behind organizational communication behaviors during real-life aviation accidents. The study was conducted at a company established in 1992 and licensed by the Civil Aviation Authority of the Philippines (CAAP), providing a relevant context for assessing the alignment between internal protocols and national regulatory standards.

Data collection involved a multi-method approach, including purposive sampling for in-depth interviews and qualitative document analysis. Six key participants were interviewed, including one top-level manager responsible for strategic oversight and five personnel from operations, quality assurance, safety, and support departments who were involved in past crisis responses. To triangulate these findings, the study analyzed primary documents: Philippine Republic Act No. 9497, which serves as the national legal framework for aviation, and the company's internal Training, Procedures, Quality, and Safety Management Systems (TPQSM) Manual.

The collected data were processed using thematic analysis to identify recurring patterns and themes related to communication laws, personnel roles, and organizational challenges. The content of the Philippine Republic Act No. 9497 also known as the "Civil Aviation Authority Act of 2008" were reviewed to determine the alignment of the company's internal communication procedures with legal requirements. Also, the interview transcripts were coded thematically to identify roles, responsibilities, and communication challenges encountered during past crises. Ethical considerations were maintained throughout the process, including obtaining informed consent for audio recording and ensuring the confidentiality of the participants and the organization. This structured methodology allowed the researcher to diagnose communication gaps and formulate a proposed intervention plan grounded in Situational Crisis Communication Theory (SCCT)

The limitations of this may not fully represent the practices and challenges of other aviation companies, particularly those of larger scale or operating in different regulatory or organizational contexts. The study focused specifically on aviation accidents and did not include other types of crises (e.g., cyberattacks, internal scandals, or health emergencies) that might also affect the company's crisis communication strategies.

4. Results

RQ # 1: Protocols Followed by the Small Aviation Company in Communicating a Crisis to Internal Stakeholders

The local aviation company's crisis communication protocols are heavily anchored in national regulatory frameworks and formalized internal systems. It is found that the organization strictly adheres to the Civil Aviation Authority Act of 2008, which sets out the legal obligations and reporting standards for aviation emergencies. These mandates are operationalized through the Training, Procedures, Quality, and Safety Management Systems (TPQSM) Manual. This serves as the primary blueprint for managing information overflow. A critical finding is the centralization of communication

authority; protocols require that all official data be channeled through the Safety Manager to ensure accuracy before dissemination.

Furthermore, it highlights a reliance on structured messaging to maintain institutional consistency and prevent public speculation. The company utilized approved media statements and scripts, with the CEO or Accountable Manager designated as the sole official spokesperson for public-facing briefings. The findings also indicate a policy of strategic coordination with the Civil Aviation Authority of the Philippines (CAAP), where the company often defers the release of technical investigation results to the regulatory body to avoid legal liability. This approach aligned with the “diminishing strategy” of Situational Crisis Communication Theory (SCCT), as the company focused its communication efforts on organizational learning and safety enhancements rather than individual fault, thereby aiming to preserve stakeholder trust and mitigate reputational damage.

RQ # 2: Units/personnel involved in the Crisis Communication Activities in the Small Aviation Company

While the CEO or Accountable Manager serves as the primary spokesperson for public and legal accountability, the Safety Manager acts as the central coordinator for all internal and external information flow. Other key personnel, including those from Operations, Quality Assurance, and Maintenance, are responsible for gathering technical data and ensuring that all messaging aligns with safety manuals and regulatory standards. These individuals form a functional crisis team focused on ensuring technical accuracy to prevent the spread of misinformation. As the Chief of Operations explained:

“The Accountable Manager is the chairman of the crisis management committee. The members of the committee include the Operations Manager, administrative personnel, and the aircraft mechanics headed by the Chief Mechanic.”

Similarly, a member of the operations control team reinforced this by stating:

“In our organization, the main individuals engaged in crisis communication consist of the Top-level Management, the Safety and Security division, along with members from Operations Control.”

Despite having no formal public relations office, the organization has functionally distributed public communication tasks among key personnel. As clarified by the Safety Manager:

“*Wala tayong public relations officer per se pero kung titingnan mo sa external communication, nahati siya sa tatlo—si Safety Manager para doon sa mga government agencies na ‘yon, si Accountable Manager sa media, si Admin sa pamilya. So in effect, parang sila na ‘yung PR team.*”

(We don’t have a public relations officer per se, but if you look at external communication, it’s divided into three—the Safety Manager handles communication with those government agencies, the Accountable Manager deals with the media, and the Admin communicates with the families. So, in effect, they function as the PR team.)”

However, several significant challenges hinder effective communication within the organization. A primary obstacle is the “fear of legal repercussions,” which often leads to a “silence policy” or to delays in releasing information while awaiting official CAAP investigation results. This lack of a dedicated Public Relations (PR) or Communications unit means safety personnel must take on complex messaging tasks for which they lack formal training, potentially leading to inconsistencies. Additionally, the study found that the “human element” – specifically the emotional toll on staff and the sensitivity required when dealing with victims’ families – poses a major hurdle. The absence of a pre-established, written crisis communication plan was identified as a critical gap, often resulting in a reactive rather than proactive communication stance during high-pressure situations.

RQ # 3: Challenges the Small Aviation Company Faced in Crisis Scenarios

This research proposed a structured framework that shifted the company from a reactive to a proactive communication stance by formalizing roles and messaging strategies. Central to these results is the creation of a crisis communication flowchart, which streamlines the reporting process from the initial accident notification to the final public briefing, ensuring that information is verified by the Safety Manager before dissemination.

“There was confusion regarding roles and responsibilities, resulting in redundant actions. For example, during the accident on December 15, 2021, the Safety Manager—unaware of parallel efforts—began communicating with the relevant CAAP/AAIIB personnel. At the same time, the COO, acting on instructions from the CEO/Accountable Manager, also initiated separate communications with CAAP’s FSIS and ORCC personnel.”

It is suggested that, by integrating Situational Crisis Communication Theory (SCCT) into its operations, the company can better select “diminishing” or “bolstering” strategies based on the severity of the incident.

It emphasized the need for capacity building, specifically recommending regular crisis simulation drills and media training for designated spokespersons to handle high-pressure inquiries with transparency and empathy.

“To address technical accuracy issues and message delays, our company has implemented the practice of involving backbenchers in all Crisis Communication Team (CCT) meetings. These backbenchers are senior representatives from the Technical, Operations, Safety, and Legal teams, who will provide immediate clarification and technical input during internal discussions.”

The proposed plan also introduces standardized templates for press releases and stakeholder notifications to minimize delays caused by legal hesitations. By establishing these predefined protocols, the research concludes that the organization can effectively balance the need for legal caution with the ethical imperative of keeping the public and victims’ families informed, ultimately protecting the institution’s long-term reputation and maintaining regulatory compliance.

RQ # 4: Communication Interventions Proposed to Help the Small Aviation Company to Improve Its Performance in Crisis Communication

Based on the findings, the small aviation company had established standardized procedures for aviation accidents. However, these procedures largely focused on internal notifications and informing affected families, falling short in comprehensive communication planning for both internal and external stakeholders.

One major intervention needed is to expand the crisis communication plan to include specific protocols on external and internal communication flows, not only compliance with CAAP (Civil Aviation Authority of the Philippines), but also proactive company-level engagement. While the company correctly deferred to CAAP as the authorized spokesperson to the media, a significant gap remained in how internal coordination was handled and how stakeholder concerns were addressed beyond regulatory requirements.

As one key insight revealed, although the company conducts regular emergency drills, these focus on technical readiness and rescue responses, not on communication processes. Therefore, it is recommended that the company design and implement communication-specific drills, particularly for public-facing and family-facing scenarios.

The following are the proposed interventions for the small aviation company:

Formalize and train a Crisis Communication team. While roles have been informally distributed, training is lacking. The Safety Manager, though technically adept, should be trained in public relations principles to align technical updates with appropriate messaging strategies. Similarly, the CEO should continue as spokesperson but must also be guided on best practices in stakeholder management, especially with bereaved families.

Establish Clear Communication Flow for Internal Stakeholders. The company should implement structured methods, such as briefing meetings, internal memoranda, and email notifications, to promptly and accurately inform all personnel. This helps prevent misinformation and aligns with SCCT's principle of maintaining organizational trust and message clarity.

Conduct Communication-Focused Simulations and Training. In addition to emergency drills, real-time crisis communication exercises should be introduced. These include tabletop simulations, mock press briefings, and internal communication rehearsals to ensure preparedness.

Assign Humanitarian Response Roles for External Stakeholders. One improvement is ensuring that top-level management, particularly the CEO, personally handles family communication. This approach humanizes the organization's response and upholds stakeholder care. As the Safety Manager clarified, only CAAP should communicate official technical information, but the company remains responsible for delivering humanitarian messages.

Institutionalize a Unified Messaging Framework. To prevent confusion and message inconsistency, the aviation company must develop template statements and designated speaking points. All internal personnel must be briefed on what can and cannot be tailored to crisis responses, based on type and stakeholder expectations.

These proposed interventions – grounded in SCCT and validated by interview data – aim to address the company's current limitations in communication preparedness, stakeholder engagement, and message clarity. A clear communication framework, supported by proper training, role clarity, and unified internal processes, will help the small aviation company not only comply with regulatory expectations but also demonstrate accountability, compassion, and professionalism in times of crisis.

5. Discussion

The findings show that the Civil Aviation Authority of the Philippines (CAAP) is the only agency authorized to communicate with the media during a crisis, especially on aviation accidents. This is because the CAAP conducts investigations and issues reports on aviation companies that fail to meet standards. Under the Civil Aviation Authority Act of 2008 (Republic Act No. 9497), the agency is responsible for authorizing technical, operational, safety, and aviation security functions. The CAAP also regulates all operations and maintains national airports and similar facilities in compliance with the International Civil Aviation Organization (ICAO). Therefore, even for major airlines, only the CAAP is permitted to issue statements to the media during crises such as aviation accidents. Although aviation companies also have the right to communicate with the media, they must wait for the investigation to conclude and release its findings and the cause of the accident. However, there are instances where they may not fully disclose what happened. A clear challenge is defining roles and responsibilities, which can lead to overlapping communication efforts. To address this, internal communication should prioritize established structures and arrangements between top-level management and personnel, ensuring accurate information and dissemination.

In the case of the December 15, 2021, aviation accident, the crisis falls under the accidental category in which the organization holds low responsibility. According to the Situational Crisis Communication Theory, in such cases, organizations are advised to use diminishing and bolstering strategies, and in some cases, compassion strategies, particularly when human lives are affected. The proposed interventions reflect these strategic responses: Tailored Communication Strategies: Compassion and Humanitarian Approach, Strengthening Internal Alignment, and Unified Messaging by Reinforcing Reputation Management.

6. Conclusion

The small aviation company has followed the legal and regulatory framework mandated by Republic Act No. 9497 and the Philippine Civil Aviation Regulations, particularly by deferring public communication to the Civil Aviation Authority of the Philippines (CAAP). However, its internal communication framework, as detailed in the TPQSM Manual, remains limited to basic internal notifications and lacks structured procedures for unified communication with all internal stakeholders.

The company had established a Crisis Management Committee. However, the lack of public relations training and a unified communication structure limits their ability to deliver consistent,

timely messages. The improvised delegation of duties, although functional, makes the system vulnerable to inefficiencies and internal confusion.

The unclear delineation of responsibilities during crisis situations, such as during the December 15, 2021, aviation accident, led to overlapping actions and conflicting communication channels. This confusion, as evidenced by simultaneous communication with CAAP from different managers, points to a structural flaw in internal coordination.

To address existing communication challenges, this study proposed a set of interventions, including structured crisis communication training for all personnel, the institutionalization of communication roles, and the development of standardized messaging protocols. These interventions should be guided by the principles of Situational Crisis Communication Theory (SCCT), particularly the use of compassion strategies in stakeholder engagement and message consistency to mitigate public confusion. Building a communication culture that emphasizes transparency, accuracy, and accountability will enhance the company's preparedness and resilience in future crisis scenarios.

In conclusion, while the small aviation company has foundational elements in place for managing crisis communication, its current practices are limited in scope, lack formal training components, and are hindered by internal role confusion. By implementing tailored communication interventions and reinforcing structures processes, the company can significantly improve its crisis communication performance – thereby aligning its operations with both regulatory expectations and stakeholder trust.

7. Acknowledgments

With profound gratitude, the researcher gratefully acknowledges the following persons who shared their valuable and selfless assistance to make this research work possible:

Dr. Brian Bantugan, for his knowledge, words of wisdom, guidance and encouragement, which provided the paper direction towards its completion.

Sir Benedicto, Sir Red, and Sir Joseph, panel members, for their intelligent criticisms, suggestions, and recommendations that contributed greatly to the improvement of this paper.

Auntie Marilyn Moscardon, for giving her all-out financial and moral support to this paper.

Emmanuel Cuenca, for their help and assistance in completing this study.

To the researcher's parents and sister, for their non-stop support, words of wisdom, love, and prayers to finish the paper.

Lastly, to STI-West Negros University for the opportunity to present this paper and for their utmost support.

8. References

- Adeyemi, A., Falobi, F., Akin-Odukoya, O., Onyejelem, T. E., & Ridwan, M. (2024). Influence of crisis communication strategies on public perception of organisations: A study of Caleb University. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 7(4), 978-989.
- Civil Aviation Authority of the Philippines. (2025, June). *Aircraft accident investigation report: RP-C8202*. <https://caap.gov.ph/wp-content/uploads/2025/06/Accident-RP-C8202.pdf>
- Crisis Management and Communication review. (2024). Fiveable Library. <https://library.fiveable.me/crisis-management-and-communication/unit-3/situational-crisis-communication-theory/study-guide/CnOakdBgbNSW94tG>
- Imad, A. R., Elbuzidi, K. J. S., & Chan, T. J. (2021). Crisis management and communication approach: A case of Boeing 737 MAX. *Journal of Arts & Social Sciences*, 4(2), 7-14.
- International Air Transport Association (IATA). (2024). *Crisis Communications and Social Media: A Best Practice Guide to Communicating in an Emergency*.
- Kyrychok, A. P. (2021). *An impact of Situational Crisis Communication Theory on the efficiency of investigations in the field of crisis communications*. Scientific European.
- Mediacraft. (2024, September 8). Best practices for crisis communication. <https://mediacraft.ng/best-practices-for-crisis-communication/>
- Mudiardjo, R., Ariantoro, M. F., Supriyadi, I., Aras, M., & Hidayat, Z. (2022). Public relations strategy in rebuilding Airline Company reputation following aircraft crash. *Fair Value: Jurnal Ilmiah Akuntansi dan Keuangan*, 5(1), 399-409.

- Mwandembo, F. (2024). Navigating the Storm; Effective Crisis Communication Strategies. *International Journal of Innovative Science and Research Technology (IJISRT)*, 2685-2697.
- Public Relations Society of America. (n.d.). *All about PR*. <https://www.prsa.org/about/all-about-pr>
- Rahmawati, A., Pratiwi, M., & Yusa, M. Y. (2024). Navigating Turbulence: Analyzing the Crisis Response of Sriwijaya Air following the SJ182 Plane Crash using Situational Crisis Communication Theory (SCCT). *CHANNEL: Jurnal Komunikasi*, 12(1), 84-93.
- Republic of the Philippines. (2008). *Republic Act No. 9497: Civil Aviation Authority Act of 2008*. Official Gazette. <https://www.officialgazette.gov.ph/2008/03/04/republic-act-no-9497/>

Improving Arithmetic Proficiency Through Ideal: Evidence from Learners' Mathematics Performance

Michelle C. Rubica*, Renith S. Guanzon

STI West Negros University, Bacolod City, Philippines

*Email : michelle.rubica@deped.gov.ph

Abstract

Numeracy requires knowledge of arithmetic, yet many learners do not reach minimum proficiency in mathematics. There is a need for innovative interventions, but a lack of rigorous quasi-experimental evidence of their effectiveness. Drawing on constructivist learning theory and previous research supporting tablet-assisted mathematics instruction, Project IDEAL was developed to provide interactive practice and immediate feedback on the four basic operations. Arithmetic challenges in Key Stage 2 may impede subsequent mathematical education; thus, this quasi-experimental study examined the impact of Project IDEAL on learners' arithmetic performance at a public elementary school in Western Visayas during the 2025–2026 school year. The study employed total enumeration in selecting 40 Grade 5 pupils from two sections. The intervention was two months long. Data were analyzed using mean and t-tests. The results revealed that learners in the control group struggled with the four basic operations, suggesting that their arithmetic skills were underdeveloped. The learners in the experimental group exhibited low arithmetic skills prior to the intervention. Both groups improved significantly after the intervention, suggesting that both instructional approaches were effective. Furthermore, the difference between the pre-test and posttest scores of the control and experimental groups, along with the posttest scores of these two groups, was not statistically significant. The effect, however, was larger for the experimental group than for the control group. The findings suggest that Project IDEAL has the potential to enhance learners' performance in arithmetic. Given the short intervention, extending its implementation may allow learners to consolidate arithmetic skills and increase the likelihood of detecting meaningful improvements. This suggests that classroom instruction, curriculum planning, and technology integration should focus on the continued use of the intervention to promote long-term mastery of arithmetic skills.

Keywords: Project IDEAL; Learners' Arithmetic Performance; Key Stage 2 Mathematics; Control Group; Experimental Group

1. Introduction

Two of the most prominent goals of the Sustainable Development Goals (SDG) are to provide learners with high-quality education (SDG 4) and foster innovation through science, technology, and digital connectivity (SDG 9). Key actions include scaling up the quality of education and building digital competencies in public institutions to help strengthen the numeracy skills of all early-grade Filipino learners (Saini et al., 2023). By prioritizing these goals, the country can ensure that its next generation learners are equipped to tackle future challenges and contribute to sustainable growth.

Numeracy is the set of abilities that a learner needs to perform mathematical operations. It involves identifying and comprehending the world's mathematical processes. As learners advance, their number-matching and critical thinking skills become highly developed. These abilities enable students to use arithmetic to make informed decisions and solve problems (Kurmaniak, 2021). The four fundamental operations—addition, subtraction, multiplication, and division—are not just about passing the test; they are about laying a strong foundation for future mathematical success. These operations serve as the building blocks for more complex concepts learned in later grades, such as algebra and geometry. However, a considerable number of children struggle with solving arithmetic problems, which can lead to difficulties in their future mathematical learning (Boz, 2024). Hence, learners need additional instructional support and remediation activities to help them improve, develop, and enhance their arithmetic skills.

Project IDEAL is a numeracy intervention program implemented in Grade 5. The intervention focuses on teaching and learning mathematical concepts and skills. In particular, the intervention aims to increase students' knowledge of mathematics and their ability to process information mathematically. By carefully integrating selected applications, such as "Math Games by Lucas and

Friends,” into the learning environment, Project IDEAL transforms traditional numeracy practice into interactive activities, making learning more engaging and enjoyable.

In the present research setting, the researcher, a mathematics teacher at the grade 5 level, has observed students struggling with the four basic operations. More than half of the Grade 5 population scored less than 50% on the Enhanced Regional Unified Test (E-RUNT), possibly due to a lack of understanding of the concept itself and insufficient parental follow-up at home. Since the DepEd provided our school with tablets, this became the researcher's motivation to develop a numeracy program that would help our learners strengthen their numeracy skills. That is why the researcher initiated a study to assess the effectiveness of Project IDEAL: Improve, Develop, and Enrich Arithmetic Skills for Learners, to address the issue and help learners master the four basic operations.

2. Objectives

This study aimed to determine the effects of the IDEAL project on learners' arithmetic performance in Key Stage 2 mathematics at a public elementary school. Specifically, it aimed to determine 1) the level of learners' arithmetic performance in the pre-test and posttest of the control group; 2) the level of learners' arithmetic performance in the pre-test and posttest of the experimental group; 3) whether a significant difference exists between the pre-test and posttest in the level of learners' arithmetic performance of the control group; 4) whether a significant difference exists between the pre-test and posttest in the level of learners' arithmetic performance of the experimental group; 5) whether a significant difference exists between the pretests in the level of learners' arithmetic performance of the control and experimental groups; and 6) whether a significant difference exists between the posttests in the level of learners' arithmetic performance of the control and experimental groups.

3. Materials and Methods

This section presents an elaborate discussion of the research methodology used, including the research design, the study's subjects, the research instruments, the validity and reliability of the instruments, the data-gathering procedure, the conduct of the study, ethical considerations, and data analysis and statistical treatment.

At the outset, this study employed a quasi-experimental design with a pretest-posttest structure. Two groups were created: A control group and an experimental group. A quasi-experiment is an empirical study used to estimate the impact of an intervention on its target group without random assignment. Rogers and Revesz (2019) noted that quasi-experimental research designs aim to establish a relationship between independent and dependent variables. In other words, it is expected that the independent variable will cause some variation or change in the dependent variable. The design has two groups of subjects: a control group and an experimental group (receiving Project IDEAL). Both groups were measured twice: the pre-test (first measurement) and the posttest (second measurement). A pre-test is necessary to assess the magnitude of the difference between the control and experimental groups and to provide baseline information on the amount of change resulting from the given treatment. The posttest measures mastery of instructional materials (tablets with math apps, games, and short videos) and is administered at the end of the study. This design compares the arithmetic performance between the control and experimental groups. It measures the degree of change resulting from the treatment, Project IDEAL. This approach allows the researcher to assess the effect of the experiment by assessing the difference between the pre-test and the posttest arithmetic performance.

The respondents of the study were 40 key stage 2 non-numerate learners. The respondents were selected using purposive sampling. According to Ames et al. (2019), purposive sampling is a nonprobability sampling method in which participants are selected based on the characteristics of the population and the study's objective. Most researchers use purposive sampling when they want to access a particular subset of people, selecting all participants in a survey who fit a specific profile.

Meanwhile, the data-gathering instruments were the pre-test and posttest, which were self-made by the researcher for four fundamental operations. The pre-test aims to measure learners' arithmetic performance in four fundamental operations prior to the commencement of the study. The learners receive the pre-test prior to the experiment. The posttest was administered to measure the effect of the intervention activities after the implementation of Project IDEAL. The researcher utilized

a validated and reliable questionnaire on four fundamental operations. The pre-test and posttest consist of forty (40) multiple-choice test items. It consists of eight (8) items per operation and two (2) items of word problems per operation, for a total of 40 items administered for 60 minutes only. The research instrument was subjected to validity (4.78-excellent) and reliability (0.827-excellent).

To facilitate the smooth conduct of the study, the researcher employed the following procedures: a letter of request was addressed to the Schools Division Superintendent for approval to conduct the study. After receiving approval, the researcher also sent a separate letter to the concerned school head. The researcher asked permission from the school head to administer the research instrument to the study respondents. The school head also approved the date the research instrument is administered, the retrieval date, and the duration of Project IDEAL's implementation prior to conducting the study.

After obtaining approval to conduct the study, the researcher also sought consent from the parents of the subject respondents and explained the purpose of Project IDEAL. Project IDEAL is a numeracy intervention project to detect gaps in learners' mathematical learning. The target of intervention is to enhance learners' arithmetic performance by exposing them to tablets with math apps, games, and short videos on numeracy skills. The intervention was conducted for 8 weeks from September 9 to October 31, 2025. The first and second weeks will cover lessons on addition involving two and three digits using the tablets; the third and fourth weeks covered topics on subtraction and worded problems involving addition and subtraction; the fifth and sixth weeks covered lessons on multiplication involving two and three digits; and the seventh and eighth weeks covered topics on division and worded problems involving multiplication and division.

To determine the subject respondents for the control and experimental groups to undergo intervention, the researcher identified 20 male and 20 female grade 5 learners with low mathematics performance in the first grading period. The learners were evenly distributed, comprising 10 male and 10 female learners in the control group and 10 male and 10 female learners in the experimental group. The subject respondents were not disclosed to promote fairness and inclusivity, protect learners' identities, and prevent bullying by peers after they participated in the intervention.

The first part of implementing Project IDEAL involves administering a pre-test to both the control and experimental groups to determine their baseline performance in four fundamental mathematical operations. The second part involved conducting actual interventions with both the control and experimental groups. The control group was exposed to traditional teaching methods, including four fundamental operations such as board work, practice drills, and flashcards. The experimental group received a daily 30-minute intervention on a tablet featuring math apps, games, and short videos on four fundamental mathematical operations. The third part involved administering posttests to both the control and experimental groups. The tests were given to the learners after the completion of the intervention program to measure their arithmetic performance in four fundamental operations. The results of the pre-test and posttest for the control and experimental groups were compared and analyzed to determine the effects of the IDEAL project, which utilized tablets with math apps, on learners' arithmetic performance.

This section now discusses the data analysis procedures and the statistical treatment used in the study. Objective No. 1 used a descriptive-analytical scheme and a weighted mean to determine the level of learners' arithmetic performance in the pre-test and posttest of the control group. Objective No. 2 used a descriptive-analytical scheme and a weighted mean to determine the level of learners' arithmetic performance in the pre-test and posttest of the experimental group. Objective No. 3 used the comparative analytical scheme and t-test to determine the significant difference between the pre-test and posttest in the level of learners' arithmetic performance of the control group. Objective No. 4 used the comparative analytical scheme and t-test to determine the significant difference between the pre-test and posttest in the level of learners' arithmetic performance of the experimental group. Objective No. 5 used a comparative-analytical scheme and a t-test to determine whether there was a significant difference in the pretest level of learners' arithmetic performance between the control and experimental groups. Objective No. 6 used a comparative-analytical scheme and a t-test to determine whether there was a significant difference in the posttest levels of learners' arithmetic performance between the control and experimental groups.

The researchers prioritized respondents' voluntary participation, informed consent, the risk of harm, confidentiality, and anonymity to prevent violations of human rights during the research process. Participation in the study was voluntary, and the respondents could withdraw at any time without any consequences. We informed them about the study's academic purpose. Only the researcher(s) had access to the research data, ensuring confidentiality. Moreover, during the study, the researcher strictly adhered to the Data Privacy Act of 2012 and its implementing guidelines to ensure that security measures were in place to protect personal and sensitive information. This commitment to ethical standards fostered trust among participants and enhanced the integrity of the research findings. By adhering to these guidelines, we aimed to uphold the highest level of professionalism in our research process.

4. Results and Discussions

In this section, the gathered data were further processed, presented, analyzed, and interpreted to focus on the study's specific objectives.

Table 1 *Level of Learners' Arithmetic Performance of the Control Group in the Pretest and Posttest*

Group	N	Pretest		Posttest	
		Mean	Interpretation	Mean	Interpretation
Control Group	20	9.25	Low Level	13.30	Low Level

As shown in Table 1, the control group scored poorly on the pretest arithmetic ($M = 9.25$), indicating they had difficulty with basic operations and word problems before instruction. This aligns with Pan and Sana (2021), who stated that low pretest scores are expected because learners have not yet mastered the material. The posttest score of the control group increased to 13.30, which is low but an increase. This agrees with Alaagib et al. (2019) and suggests that traditional lectures can improve arithmetic achievement even in resource-poor settings.

Table 2 *Level of Learners' Arithmetic Performance of the Experimental Group in the Pretest and Posttest*

Group	N	Pretest		Posttest	
		Mean	Interpretation	Mean	Interpretation
Experimental Group	20	9.90	Low Level	15.85	Low Level

Table 2 shows the arithmetic performance of the experimental group at pretest and posttest levels. The average pretest score is 9.90, indicating a low level of arithmetic proficiency. This indicates that students have not developed skills in the four fundamental operations before the intervention of using tablet-based math applications.

After the intervention with math apps on tablets, the arithmetic performance of the experimental group increased to 15.85, which is still low but a significant improvement. This shows that Project IDEAL was successful in improving the learners' skills in the four main operations. Results also suggest that greater gains might be associated with a longer intervention duration. This is consistent with Villasoto (2024) and Quilloy (2023) who reported an increase in mathematics performance post-intervention although the levels remained low frequently despite the increases.

Table 3 *Comparative Analysis on the Level of Learners' Arithmetic Performance in the Pretest and Posttest of the Control Group*

Test	Mean	Degree of Freedom	t-value	Significant Level	P-value	Interpretation
Pretest	9.25	38	-3.010	0.05	0.005	Significant
Post Test	13.30	38				

Table 3 displays a significant difference between the pretest ($M = 9.25$) and posttest ($M = 13.30$) for the control group, with $p = 0.005$ (< 0.05). This outcome led to the rejection of the null hypothesis. The findings imply that traditional lectures are an effective strategy for improving learners' arithmetic performance. Despite the limited support resources, the continued use of numeracy drills and exercises, flashcards, and board work had significantly improved learners' performance in four fundamental mathematical operations. This implies that even with limited resources, consistent practice and interactive methods can greatly improve learners' understanding and skills in basic math operations. Therefore, conventional pedagogies remain a useful tool for fostering academic development in arithmetic skills. The results, as supported by Culpable et al. (2024), showed that Project TABANG significantly improved mathematical skills through its personalized, hands-on instructional methodology alone. Meanwhile, Ismail and Maat (2020) showed considerable improvements in students' performance and productivity even without the use of iPads for teaching mathematics.

Table 4 *Comparative Analysis on the Level of Learners' Arithmetic Performance in the Pretest and Posttest of the Experimental Group*

Test	Mean	Degree of Freedom	t-value	Significant Level	P-value	Interpretation
Pretest	9.90	38	-3.649	0.05	0.001	Significant
Post Test	15.85	38				

Table 4 shows a significant difference between the experimental group's pretest ($M = 9.90$) and posttest ($M = 15.85$), with $p = 0.001$ (< 0.05), also leading to rejection of the null hypothesis.

The results show that using mathematics apps on tablets has had a significant effect on learners' arithmetic performance. Most learners, especially those who were struggling with basic fundamental operations, enjoyed learning mathematics and were motivated to improve their skills by using the tablets. In addition, several learners showed interest in exploring other math apps and games to improve their arithmetic skills. The findings suggest that such targeted interventions may be critical in helping learners overcome academic difficulties and achieve better educational outcomes.

This finding is consistent with the study of Aspiranti and Larwin (2021), Uwineza et al. (2023), Magtolis III (2023), and Munda et al. (2024) who reported significant improvements in math performance after technology-based or intervention programs.

Table 5 *Comparative Analysis of the Level of Learners' Arithmetic Performance in the Pretest of the Control Group and the Experimental Group*

Group	Mean	Degree of Freedom	t-value	Significant Level	P-value	Interpretation
Control Group	9.25	38	-0.476	0.05	0.637	Not Significant
Experimental Group	9.90	38				

Table 5 shows no significant difference between the control group ($M = 9.25$) and experimental group ($M = 9.90$) in the pretest ($p = 0.637 > 0.05$), which again leads to the acceptance of the null hypothesis. The results indicate that the two groups had the same low arithmetic performance before the intervention. This aligns with Smith (2024), who stressed the need for explicit instruction and repeated practice to overcome baseline skill deficits.

Table 6 *Comparative Analysis of the Level of Learners' Arithmetic Performance in the Posttests of the Control Group and the Experimental Group*

Group	Mean	Degree of Freedom	t-value	Significant Level	P-value	Interpretation
Control Group	13.30	38	-1.581	0.05	0.122	Not Significant
Experimental Group	15.85	38				

Table 6 presents the analysis of learners' arithmetic performance in the posttests of both groups. The result indicates no significant difference between the control group ($M = 13.30$) and experimental group ($M = 15.85$) in the posttests ($p = 0.122 > 0.05$), leading to the acceptance of the null hypothesis. The findings showed no significant difference between tablet-based and traditional instruction on posttest performance. Both methods improved arithmetic skills, with small gains for the experimental group likely driven by disruptions. Perhaps the most effective approach is a combination of traditional and technology.

5. Conclusion

The learners in the control group are struggling in four fundamental operations, indicating their arithmetic skills have not been adequately developed. The learners in the experimental group demonstrated low arithmetic skills in four fundamental operations, suggesting the need for continued exposure to Project IDEAL activities. There was an increase in learners' arithmetic performance in the control group, indicating that the traditional lecture method is effective in improving learners' performance. Additionally, there was a substantial improvement in learners' arithmetic performance in the experiment group, indicating that the Project IDEAL intervention is effective. Further, both the traditional method of instruction and the features of the math app design through tablets significantly improved the learners' arithmetic performance. To maximize its effectiveness, it is recommended that the intervention be continued for a longer period.

6. Acknowledgment

The researchers wish to express profound gratitude to the people who extended their help in different ways and made this endeavor possible- her research adviser for expert assistance, patience, and support. The members of the oral defense panels provided the researcher with helpful criticisms, insights, suggestions, and recommendations, which contributed to the refinement of this work. To the researcher's respondents, thank you for your time and for completing the test instrument to the best of your abilities. I also offer sincere appreciation and gratitude to those who, in one way or another, have contributed to the realization of this work. Above all, I thank the Divine Providence for always giving the Holy Spirit to enlighten the researcher.

7. References

- Alaagib, N.A., Musa, O.A. & Saeed, A.M. (2019). Comparison of the effectiveness of lectures based on problems and traditional lectures in physiology teaching in Sudan. *BMC Med Educ* 19, 365. <https://doi.org/10.1186/s12909-019-1799-0>
- Ames, H., Glenton, C. & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis: a worked example from a synthesis on parental perceptions of vaccination communication. *BMC Med Res Methodol* 19, 26. <https://doi.org/10.1186/s12874-019-0665-4>
- Aspiranti, K. B. & Larwin, K. H. (2021). Investigating the effects of tablet-based math interventions: A meta-analysis. *International Journal of Technology in Education and Science (IJTES)*, 5(4), 629-647. <https://doi.org/10.46328/ijtes.266>
- Barrientos, I. G. (2021). The use of math apps and the mathematics performance of grade 8 students in new normal education. *EPRA International Journal of Research and Development (IJRD)*, 6(7) DOI: 10.36713/epra2016
- Boz, S. (2024). Enhancing arithmetic skills through working memory: A review of interventions and strategies. *Journal of Mathematics and Science Teacher*, 4(3), em067. <https://doi.org/10.29333/mathsciteacher/14632>
- Canilao, C. & Gurat, M. (2023). Effect of mobile apps on students' mathematics and technology attitude. *American Journal of Educational Research*, 11(10): 722-728. doi: 10.12691/education-11-10-11.
- Culpable, C., Labrador, M., Rullan, A. & Delos Santos, M. (2024) Project tabang: a remediation in mathematics for learners at risk of failing. *Psych Educ*, 29(2): 150-165 doi:10.5281/zenodo.14534776,

- Igcasama, R., Kilag, O., Cabonilla, L., Abarias, C., Abendan, C. & Bubuli, A. (2023). Enhancing numeracy: a technological approach to improve basic math skills. *International Multidisciplinary Journal of Education*, 1(6)
- Ismail, M. and Maat, S. (2020). The effects of iPad device on students' mathematics achievement. *International Journal of Novel Research in Education and Learning*, 7(2): 17-23. www.noveltyjournals.com
- Kaur, D., Koval, A., & Chaney, H. (2017). Potential of using iPad as a supplement to teach math to students with learning disabilities. *International Journal of Research in Education and Science*, 3 (1), 114-121
- Kurmaniak, N. (2021). *The development of numeracy skills in children*. <https://study.com/academy/lesson/the-development-of-numeracy-skills-in-children.html>
- Magtolis III, D. (2023) Effectiveness of project re-enrich in improving the numeracy skills of grade 5 learners. *Psych Educ*, 2023, 9: 8-13 doi:10.5281/zenodo.7960684
- Masaganda, C. & Limpiada, R. (2023). Utilization of technology-based instructional materials in developing the least learned competencies in mathematics of learners. *Psych Educ*, 2024, 29(2): 150-165 doi:10.5281/zenodo.14534776,
- Munda, N.P., Endrinal, J.R.H. & Nequinto, M.C. (2024). Effectiveness of project COUNTS in improving students' numeracy skills. *International Journal of Science, Technology, Engineering and Mathematics*, 4 (1), 22-41. <https://doi.org/10.53378/353038>
- OECD (2024), An Evolution of Mathematics Curriculum: Where It Was, Where It Stands and Where It Is Going, OECD Publishing, Paris, <https://doi.org/10.1787/0ffd89d0-en>.
- Ondog, J., Kilag, O. K., Padilla, J., & Abendan, C. F. (2023). Understanding Numerical Intuition: An Analysis of Junior High School Students' Innate Mathematical Abilities and Number Sense Competencies. *Excellencia: International Multi-disciplinary Journal of Education (2994-9521)*, 1(5), 391-402.
- Pan, S. C., & Sana, F. (2021). Pretesting versus posttesting: Comparing the pedagogical benefits of errorful generation and retrieval practice. *Journal of Experimental Psychology: Applied*, 27(2), 237–257. <https://doi.org/10.1037/xap0000345>
- Quilloy, R. (2023). *Effectiveness of mathematics digital activities for learners' intervention game apps to the mathematics performance of learners*. <https://ssrn.com/abstract=4570177>
- Rogers, J. & Revesz, A. (2019). *Experimental and quasi-experimental designs*. The Routledge Handbook of Research Methods in Applied Linguistics. (pp. 133-143). Routledge: London, UK
- Saini, M., Sengupta, E., Singh, M., Singh, H., & Singh, J. (2023). Sustainable Development Goal for Quality Education (SDG 4): A study on SDG 4 to extract the pattern of association among the indicators of SDG 4 employing a genetic algorithm. *Education and Information Technologies*, 28(2), 2031–2069. <https://doi.org/10.1007/s10639-022-11265>
- Smith, P. (2024). *The numeracy intervention projects*. Published Capstone Projects. Northwestern College, Iowa
- UNESCO (2025). Foundational learning. https://www.unesco.org/en/quality-learning/foundational?utm_source=chatgpt.com
- Uwineza, I., Uworwabayeho, A. & Yokoyama, K. (2023). Effects of interactive mathematics software on grade 5 learners' performance. *International Journal of Learning, Teaching and Educational Research*, 22(1); 166-190. <https://doi.org/10.26803/ijlter.22.1.10>
- Villasoto, D. (2024). Mathematics performance of intermediate learners through project ways. *Psych Educ*, 2024, 21(7): 755-760, doi:10.5281/zenodo.12640502

Workload and Lifestyle Management of Clinical Instructors in Nursing Schools

Jo Ed C. Noblezada¹, Renith S. Guanzon²

¹Riverside College, Bacolod City, Philippines

²STI West Negros University, Bacolod City, Philippines

*Email : joednoblezada@gmail.com

Abstract

Clinical instructors are vital in shaping future nurses, yet their workload and lifestyle management often go unexamined. This study assessed these aspects among nursing clinical instructors and explored their relationship. A descriptive-correlational design was employed using stratified random sampling. Questionnaires were distributed to 192 clinical instructors. Data were analyzed using frequency, mean, and Spearman rho via SPSS. Workload was rated high in academic, clinical, and administrative areas. Lifestyle management showed moderate biopsychologic, and high stress management, and social life. Notably, workload showed moderate correlation with lifestyle management. Clinical instructors experience high workload and moderate to high lifestyle management. Significant correlations suggest the need for targeted support and further studies, especially in areas showing significant findings. Enhancing lifestyle management is essential to maintain instructors' well-being amid high workloads.

Keywords: Lifestyle management; Clinical instructors; Nursing education; Stress management; Biopsychological health; Social support.

1. Introduction

Clinical instructors (CIs) guide nursing students as they apply classroom lessons to patient care. In day-to-day work, CIs prepare lessons and tools, supervise students on the ward, assess performance, complete records, and coordinate with clinical partners. These tasks add up to a workload that includes teaching and clinical hours, the number of students supervised, administrative duties, travel between sites, and irregular schedules. Such demands affect the ability of educators to teach well and to support safe practice (Flaubert et al., 2021). This paper also looks at lifestyle management, understood as everyday health routines—sleep, diet, physical activity, time and stress management, help-seeking, and recovery—that help a person keep steady energy, attention, and mood. In prior descriptions, workload is the volume of tasks under set limits, while lifestyle management is the set of habits that keep daily functioning healthy (Creagh et al., 2023; Tsai, 2024; Pierce, 2024). Under the Job Demands–Resources view, workload is a job demand and lifestyle management is a personal resource that can protect against strain (Lee et al., 2022).

International and regional literature explain why CIs face overload. Altmiller (2016) reported that nurse educators often manage competing clinical, teaching, and administrative priorities that cut preparation time and raise stress. Reviews also recommend better coordination and institutional support to help educators perform well under these conditions (Halton et al., 2024). In clinical teaching, the educator must match bedside instruction to patient acuity and unit goals while keeping students and patients safe, which increases moment-to-moment cognitive load (Gcawu & van Rooyen, 2022). Non-integral sources in higher education point to rising administrative work that can crowd out core teaching tasks (Boeskens & Nusche, 2021). These demand patterns make lifestyle management important: health routines that stabilize sleep, movement, and stress responses are linked with fewer errors and better sustained attention among health workers (Firth et al., 2020; Lee et al., 2022).

The Philippine context adds further factors. Nursing programs depend on agreements with multiple hospitals and clinics. CIs often start early, travel between sites, and adjust to shifting academic calendars that compress feedback and grading. Local public health risks—such as poor diet and low physical activity—remain common and contribute to non-communicable diseases (Baclig, 2022). Cultural roles in families can offer support but also add time pressures for educators (Scroope, 2017). Non-integral sources cited in the dissertation note that unresolved workload issues can weaken teaching quality and program outcomes, but coherent policies and faculty support improve both

welfare and student results (Tarraya, 2023). Practical advisories also describe simple stress-relief routines—paced breathing, short walks, and social connection—that busy professionals can use during the day (American Lung Association, 2020; HealthLink British Columbia, 2018). In short, when workload stays high and lifestyle management is inconsistent, risks increase for fatigue, lapses in attention, and a less supportive learning environment—outcomes that matter for patient safety and for student learning.

Workload is a frequently studied topic and this issue continues to persist in the field of education as overall effectiveness and efficiency are impacted by heavy workloads (Tarraya, 2023). The crucial role of clinical instructors as teachers in preparing student nurses for professional nursing practice is their clinical teaching ability, interpersonal relationships, and compassionate behavior (Factor & de Guzman, 2017). With multiple roles and heavy workload, the growing number of administrative tasks creates major obstacles, affecting their health and ability to teach effectively. These difficulties were discovered to negatively impact their capacity to plan lessons and sustain their health. It was determined that time constraints frequently feel swamped with paperwork, data input, and administrative obligations resulting in less time for lesson preparation, student interaction, and career advancement (Pagela, 2024). In the context of lifestyle management, physical activity affects the quality of teaching, therefore clinical instructors are encouraged to stay active in their daily lives by taking proactive measures of lifestyle management to maintain physical health and alleviate stress (Del Pilar, 2023). Demographic profile doesn't impact the practice of stress management, like practices of clinical instructors, they use stress management techniques and see them as beneficial in fostering a positive, productive work environment, like physical activity that regulates mood and habits and maintaining friendships helps in handling stress (Bautista et al., 2020). In the study of Buquia et al. (2024), emotion is significant with stress. Despite this, they manage stress moderately, it was found out that a well-balanced supportive personal and professional environment results in bearable stress by handling the challenges effectively while maintaining their emotional health and overall well-being.

The Job Demand-Control Theory, developed by Robert Karasek in 1979, describes how workload impacts employees' stress and well-being. The main factors to consider are how much workload affects an individual's stress level in terms of job demands like workload, time pressure, and mental requirements. The second aspect is job control, which refers to employees' ability to have a say in their work tasks and processes (Lee et al., 2022).

The interplay of job demands and job control determines job stress levels. The theory categorizes jobs into four primary groups according to the varying levels of these dimensions. High levels of strain characterize high-stress jobs, while low-stress jobs have a workload that is easier to handle. Active jobs are demanding but provide enough control to effectively manage tasks. Passive roles can lead to feelings of being stagnant or bored. This indicates that job stress primarily occurs when there are high job demands but low job control (Karasek, 1979).

On the other hand, high-pressure jobs can become more manageable by giving employees greater control over their tasks, allowing them to handle difficulties with ease. This means that enhancing job control can help protect against the detrimental impacts of high demands and improve employees' health and well-being (Mulder, 2017). Work-related stress has impacted the design of jobs, organizational policies, and strategies aimed at enhancing employee wellness.

Occupations that are in high demand necessitate substantial exertion and are linked to heightened stress levels when they are overwhelming or ongoing. Having high job control means having the freedom to make decisions and utilize skills to oversee work. Limited job control indicates restricted authority to make decisions and decreased chances to utilize one's abilities (Gameiro et al., 2020).

Moreover, the study is also anchored on the Adaptation Theory developed by Sister Callista Roy in 1964. Roy viewed the person as a biopsychosocial being with constant interaction with the changing environment (Daniels, 2024). The person is an open, adaptive system who uses coping and management skills to deal with life circumstances. These challenges are the stimuli that affect the development of the behavior of the person. The role of a nurse is to help the person obtain integrity by decreasing, enhancing, modifying, and altering stimulus to achieve adaptation (Gonzalo, 2024). Adaptation level is the ability to respond and manage positively in a situation modulated by a person's

coping mechanism and control processes. Thus, a person does not respond passively to stimuli (Petiprin, 2023).

2. Objectives of the Study

This study aimed to determine the level of workload and level of lifestyle management of clinical instructors in nursing schools in one of the highly urbanized cities in the Central Philippines for the school year 2024-2025. Specifically, this study sought to answer the following specific questions: What is the profile of the respondents in terms of age, civil status, length of service, and employment status? What is the level of workload for clinical instructors in the areas of academic, clinical, and administrative? What is the level of lifestyle management for clinical instructors in the areas of biophysiologic, stress management, and social life. And, is there a significant relationship in the level of workload and the level of lifestyle management of clinical instructors?

Scope and Limitation

The study was limited to the academic, clinical, and administrative dimensions of workload, as well as the biophysiological, stress management, and social life dimensions of lifestyle management. It was also confined to four nursing schools, as these were the only nursing schools in the locale of the study. A total of 192 clinical instructors participated by answering a researcher-made survey instrument that underwent validation by five experts and reliability testing. The data, collected through stratified random sampling, were analyzed using SPSS with frequency count, percentage, mean, the Mann–Whitney U test, and Spearman's rho as statistical tools. Future studies may broaden the scope by including more nursing schools from different regions of the Philippines to enhance the generalizability of the findings. Researchers may also examine additional dimensions of workload and lifestyle management, incorporate variables such as burnout, job satisfaction, and organizational support, and employ qualitative, mixed-methods, or longitudinal designs to gain deeper insights and assess changes over time. Furthermore, intervention studies evaluating strategies to improve workload management of clinical instructors are recommended.

3. Research Methodology

This section presents the research design, data-gathering procedure, other instrumentation, and statistical tools. It also discusses the parameters, especially the statistical tools, the respondents, and the study's locality.

3.1 Research Design

This study utilized the descriptive research design, which determines the level of workload and lifestyle management of clinical instructors in nursing schools in one of the highly urbanized cities in the Central Philippines during the school year 2024-2025. Descriptive research aims to accurately and systematically describe a population, situation, or phenomenon. It can answer what, where, when, and how questions, but not why questions. Descriptive research is an appropriate choice when the research aim is to identify characteristics, frequencies, trends, and categories. It is useful when little is known about the topic or problem. Before you can research why something happens, you need to understand how, when, and where it happens (McCombes, 2019). This research design is suited for the study, which aims to describe, explain, and validate findings in order to achieve good results for the data or information.

3.2 Study Respondents

A total of one hundred ninety-two (192) clinical instructors from a population of three hundred eighty (380) are the respondents of the study. These respondents are clinical instructors in nursing schools in a highly urbanized city in the central Philippines. The Cochran formula was used to find the sample size. To get the percentage, the respondents coming from each school are divided by the total number of respondents and multiplied by the sample size. Since the number of respondents is quite manageable, stratified random sampling was utilized. Stratified sampling is a method of dividing a larger population into distinct subgroups, or strata, and then selecting samples from each stratum using random sampling. This approach ensures that all subgroups are adequately represented in the final sample (Bisht, 2024).

3.3 Instrument

The researchers used a self-made questionnaire as a data-collection instrument. This enabled the researchers to adequately gather the needed information to complete the study and ensure reliability. The questionnaire was divided into three parts, wherein the first part pertains to the demographic profile of participants, such as age, civil status, length of service, and employment status. Part 2 contains the questionnaire proper consisting of 5 items on each area of academic, clinical, and administrative workload. Part 3 contains the questionnaire consisting of 5 items on each area of biophysiological, stress management, and social life. Each item was rated on a scale of 1 to 5, using a 5-point Likert scale rating, with 5 as always, 4 as often, 3 as sometimes, 2 as rarely, and 1 as almost never.

3.4 Data Gathering and Procedure

After administering the validity and reliability, upon approval from the research office or the dean of the different colleges of nursing, the questionnaires were administered to target respondents. The questionnaires were gathered, recorded, and analyzed. The data gathered from the responses of the respondents was tallied and tabulated using the appropriate statistical tools. The encoded data was processed using the SPSS.

3.5 Data Analysis and Statistical Treatment

Objectives 1, 2, and 3 employed a descriptive analytical scheme, using frequency counts and percentages as statistical tools to assess the profile of respondents, means to assess the level of workload and level of lifestyle management of clinical instructors across the three areas. Objective 4 utilized a relational analytical scheme, applying the Spearman rho to determine significant relationships in the level of workload and the level of lifestyle management.

3.6 Ethical Consideration

By guaranteeing the confidentiality of the respondents' answers and upholding their anonymity during the whole research process, the study made a concerted effort to reduce the possibility of harm to its target respondents in accordance with Republic Act 10173, also known as the Data Privacy Act of 2012. The researchers also requested their free and informed consent up front.

4. Results and Discussion

This section presents, analyzes, and interprets the data gathered to carry out the predetermined objectives of this study.

4.1 Profile of Respondents

Table 1 Profile of Respondents

Variables	Categories	Frequency	Percentage
Age	Younger (below 43 years old)	107	55.73
	Older (43 years old and above)	85	44.27
Civil Status	Single	70	36.46
	Married	122	63.54
Length of Service	Shorter (less than 6 years)	143	74.48
	Longer (6 years or more)	49	25.52
Employment Status	Full-Time	77	40.10
	Part-Time	115	59.90
	Total	192	100

Table 1 presents the findings for the first objective of this study. There were one hundred seven, or 55.73 percent, of the 192 respondents who belonged to the younger age group (below 43 years old), while eighty-five, or 44.27 percent, belonged to the older age group (43 years old and above). Frequency distribution percentages were used to categorize younger and older respondents. More "younger" respondents participated in the study than "older" respondents. There were seventy (70) single respondents, or 36.46 percent, and one hundred twenty-two (122) married respondents, or

63.54 percent, which means that more married participants participated in the study. For length of service, the majority of the respondents had shorter job tenures (less than 6 years), with one hundred forty-three (143) respondents at 74.48 percent, while 25.52 percent, or forty-nine (49) respondents, had longer job tenures (6 years or more). As for employment status, there were seventy-seven respondents (77) or 40.10 percent, who had permanent full-time status, and the majority of one hundred fifteen (115) or 59.90 percent, of the respondents were part-time faculty. This implies that more respondents who participated were younger, married, shorter in tenure, and part-time clinical instructors.

4.2 Level of Workload of Clinical Instructors

Table 2 Level of Academic Workload of Clinical Instructors

Items	Mean	Interpretation
As a clinical instructor in a nursing school, I :		
1. Have long hours of lectures.	3.73	High Level
2. Teach more than one concept in lectures.	3.28	Moderate Level Very High
3. Administer quizzes, activities, and exams to students.	4.54	Level
4. Create presentations for lectures.	4.13	High Level Very High
5. Take time to check students' quizzes and output.	4.56	Level
Overall Mean	4.05	High Level

There were five issues presented in the area of academics. Table 2 presents that academic workload varies at a certain level, with an overall mean score of 4.05, interpreted as "high level." However, notable results revealed that the highest mean score of 4.56, interpreted as "very high level," is issue 5, "take time to check students' quizzes and output."

While the lowest mean score, 3.28, interpreted as "moderate level," is issue 2, "teach more than one concept." Nursing educators should be highly competent in delivering lessons during lectures and evaluating students' performance. The same discourse was found in the study by Satoh et al. (2020), which stated that academic nurse educators should be highly competent in teaching and evaluating students' performance.

With the growing number of nursing students, there is an equal number of quizzes and evaluations that the clinical instructors should process as a way to assess students' learning. In support, according to El-Hashash (2022), the administration of quizzes improved student learning outcomes. However, most clinical instructors employ a more traditional type of assessment through pen and paper, which makes it a time-consuming task, especially when handling multiple classroom sections. This is corroborated in the study of Mohanraj et al. (2024), which states that traditional types of assessment are less flexible and are often more time-consuming. Still, they offer a controlled environment that discourages cheating and allows for direct observation by teachers.

Table 3 Level of Clinical Workload of Clinical Instructors

Items	Mean	Interpretation
As a clinical instructor in a nursing school, I :		
1. Render at least 8 hours of hospital duty per shift.	4.08	High Level
2. Evaluate the return demonstrations of students.	4.42	High Level
3. Evaluate student performance in the clinical area.	4.18	High Level
4. Closely monitor student procedures in clinical duties.	4.20	High Level
5. Schedule student-patient assignment.	4.40	High Level
Overall Mean	4.26	High Level

Table 3 shows a result that issues in the clinical area all revealed a "high level" of clinical workload, with an overall mean score of 4.26, interpreted also as a "high level." Issue 2 "evaluate return demonstrations of students," with a mean score of 4.42 interpreted as "high level," yielded the

highest mean score. Although interpreted as "high level," Issue 1, which requires at least 8 hours of hospital duty per shift, had the lowest mean score of 4.08.

It is imperative that clinical instructors' main work is to educate nursing students in a clinical setting to develop competence and bridge the theory-practice gap. The best way is through a return demonstration of clinical procedures. According to Gcawu & van Rooyen (2022), nurse educators are important in the development of the clinical competence of undergraduate nursing students by equipping them to face the challenges of the complex and dynamic healthcare delivery system.

Clinical workload comprises clinical hospital duty and other clinical-related learning experiences, like return demonstrations, where the clinical instructor constantly engages to equip nursing students with competence in certain hospital-related procedures. As agreed, according to Msosa et al. (2022), return demonstrations contribute effectively to learning and help students build a strong foundation of clinical competence.

Table 4 Level of Administrative Workload of Clinical Instructors

Items	Mean	Interpretation
As a clinical instructor in a nursing school, I :		
1. Allot specific times for student consultations.	4.19	High Level
2. Allot specific times for parent consultations.	3.54	High Level
3. Compute and submit my student grades on time.	4.52	Very High Level
4. Participate in the enrollment process.	3.51	High Level
5. Accept committee assignments.	3.76	High Level
Overall Mean	3.90	High Level

Results in Table 4, in administrative workload, revealed an overall mean score of 3.90, interpreted as a "high level." Issue 3 "compute and submit my student grades on time," has the highest mean score of 4.52 interpreted as a "very high level." Issue 4 "participate in the enrollment process," yielded the lowest mean of 3.51 interpreted as a "high level."

Nursing educators not only juggle academic and clinical work but also multitask in the administrative aspect. Due to pressure to meet deadlines, clinical instructors spent most of their time on grade computation and submission. This is supported by the study of Villamor et al. (2024), which suggests that time pressure in meeting deadlines contributes to a high level of workload and can potentially cause burnout. Additionally, the study by Songcayawon (2024) discussed that school heads have excellent administrative skills, but educators were never mentioned as having expertise in this area.

4.3 Level of Lifestyle Management of Clinical Instructors

Table 5 Level of Biophysiologic Lifestyle Management of Clinical Instructors

Items	Mean	Interpretation
As a clinical instructor in a nursing school, I :		
1. Eat nutritious balanced meals and avoid fatty foods.	3.70	High Level
2. Have enough sleep each night.	3.45	Moderate Level
3. Exercise regularly.	3.05	Moderate Level
4. Avoid taking caffeine.	3.05	Moderate Level
5. Avoid taking alcohol.	3.78	High Level
Overall Mean	3.40	Moderate Level

Table 5 shows that the level of lifestyle management in biophysiological area varies to a certain level with an overall mean score of 3.40 interpreted as "moderate level". Issue 5 "avoid taking alcohol" has the highest mean score of 3.78 interpreted as "high level" while Issue 3 "exercise regularly" and Issue 4 "avoid taking caffeine" tied up as the lowest mean scores of 3.05 interpreted as "moderate level."

Clinical instructors as healthcare professionals may be aware of healthy lifestyle practices. The relatively lower scores for exercise and caffeine avoidance reflect challenges in balancing

personal health with demanding schedules or stress. They may teach nursing students to avoid caffeine consumption and to exercise regularly but they may not be actually doing it. Interestingly, according to Guest et al. (2021) caffeine has consistently been shown to improve exercise performance. However, with the demanding nature of work, clinical instructors do not have enough time for physical exercise. In the study of Balatoni et al. (2023), it was collaborated that healthcare professionals do not engage in physical activity or exercise, as 72.67% reasoned out the lack of time.

Caffeine consumption among clinical instructors is predominantly unavoidable, with emerging local coffee shops and variety of flavors and taste to choose from, it is simply non-resistible. They simply love coffee or a way to keep them awake all throughout the day. Especially since their days usually start at six in the morning, or sometimes at ten in the evening. This is in collaboration with the study of Pauchon et al. (2024), as the result of their study found that caffeine increased the number of long awakenings. Also, supported in the study of Davisaraei et al. (2024), coffee can help with alertness in the morning consuming it at the right times can assist in preserving healthy sleep patterns even while enjoying coffee.

Table 6 Level of Lifestyle Management of Clinical Instructors in Stress Management Domain

Items	Mean	Interpretation
As a clinical instructor in a nursing school, I :		
1. Refrain from smoking or vaping after a stressful day.	3.60	High Level
2. Take time to rest and sleep after a long day.	3.75	High Level
3. Take time for my hobbies and interests.	3.61	High Level
4. Refrain from dwelling on personal problems.	3.61	High Level
5. Do relaxation techniques like deep breathing exercises.	3.94	High Level
Overall Mean	3.70	High Level

The result in Table 6 showed an overall mean score of 3.70 interpreted as “high level” with Issue 5 “do relaxation techniques like deep breathing exercise” has the highest mean score of 3.94 interpreted also as “high level.” While Issue 1 “refrain from smoking or vaping after a stressful day” yielded the lowest mean score of 3.60 interpreted as “high level.”

Smoking or vaping yielded a high level, although still, the lowest mean score. Nursing educators are aware and cautious of their health as they need to stay healthy to perform the job and an annual physical exam is required to evaluate their health status. But, after a stressful day, they need to have an outlet when being overwhelmed by taking in air through inhale and exhale, with smoke. In the study of Jahnel et al. (2019), it agrees that people engage in smoking as a means of coping with stress. Executive Order 26 may have slowed down the incidence but as an academic institution, it is prohibited to smoke more ironically a healthcare professional. According to Catalano & Gilleskie (2021), a ban on smoking in the workplace protects people from second hand smoke, helps smokers quit and reduce smoking incidents.

Table 7 Level of Lifestyle Management of Clinical Instructors in the Social Life Domain

Items	Mean	Interpretation
As a clinical instructor in a nursing school, I :		
1. Talk and mingle with friends to rant out feelings.	3.81	High Level
2. Talk to significant others to voice out feelings.	3.91	High Level
3. Have good connections with my colleagues.	4.29	High Level
4. Have good connections with my superiors.	4.27	High Level
5. Have a love life or special someone to rely on.	4.12	High Level
Overall Mean	4.08	High Level

Table 7 revealed results that social life in the area of lifestyle management all revealed “high level” with an overall mean score of 4.08. Issue 3 “have good connections with my colleagues” with a

mean score of 4.29 interpreted as “high level” yielded as the highest. While Issue 1 “talk and mingle with friends to rant out feelings” with a mean score of 3.81 interpreted as “high level” yielded as the lowest.

With heavy workloads and multiple responsibilities in both personal and professional life, clinical instructors do not have the time to mingle with friends, especially in the workplace that gives a doubt of who are friends and who are not. As supported by the study of Durrah (2022), colleagues do not always trust each other, as friendships can blur boundaries and can sometimes be a distraction from the job resulting in less time spent at work and more time spent on socializing. According to Miles (2023), humans are fundamentally social creatures. Also, in the study of Buquia et al. (2024), a well-balanced supportive personal and professional environment results in bearable stress.

4.4 Relational Analysis in the Level of Workload and the Level of Lifestyle Management of Clinical Instructors

Table 8 Relationship between the Level of Workload and the Level of Lifestyle Management of Clinical Instructors

Variable	rho	p-value	<i>Sig. level</i>	Interpretation
Level of Workload				
Level of Lifestyle Management	0.413	0.000	0.01	Significant

The fifth objective of this study presented in Table 14 was to identify a significant relationship in the level of workload and the level of lifestyle management of clinical instructors. The results show $r = 0.413$ and a p -value of 0.00 with 0.01 level of significance. This signifies a significant relationship in moderate correlation. Therefore, the null hypothesis is rejected. There is a significant relationship in the level of workload and the level of lifestyle management of the clinical instructors.

The higher the workload, the higher the lifestyle management. In the study of Sarac et al. (2023), healthy lifestyle behaviors lead to increased productivity in the workplace. In contrast, the study of Lee et al. (2021), found that the amount of working hours are associated with unhealthy lifestyles. Clinical instructors' heavy workload and constant pressure is a demanding yet a critical challenge. They often navigate tight deadlines and multiple responsibilities while striving to perform at their peak. Without effective lifestyle management, this pressure can lead to health issues and reduced productivity. Thus, having a greater control in maintaining a healthy lifestyle management such as diet, sleep, and exercise can signify a positive adaptation and improved ability to cope and perform consistently. With heavier workload, more extensive lifestyle management is needed. When clinical instructors are overwhelmed with duties and responsibilities, they take a break, they take a deep breath, and they connect with others. According to Anderson (2025), effective lifestyle strategies for managing high workload ensure professionals not only to survive but thrive in their careers.

5. Conclusion

Several key conclusions may be drawn concerning the workload and lifestyle management of clinical instructors in nursing schools in a highly urbanized city in the central Philippines in 2024–2025 based on the targeted objectives and results of this study.

The majority of the respondents were younger, married, and had shorter lengths of service, with a large number being part-time clinical instructors. This profile sheds light on the growing reliance on younger and part-time faculty members to meet the increasing demands of nursing education, especially in urban areas where the college population of nursing students has been on the rise. The presence of mostly part-time faculty members implies that institutions might be employing them on a contractual basis to keep up with the growing student population due to the shortage of qualified full-time instructors.

Clinical instructors carry persistently high academic, clinical, and administrative loads handling numerous teaching, clinical duties, and administrative tasks, which may lead to stress, reduced effectiveness, and potential burnout. A high level of lifestyle management means clinical

instructors effectively balance work, health, and personal life, promoting well-being and sustained performance.

High demand work and overwhelming responsibilities can predispose to a high level of workload of clinical instructors, regardless of age, civil, status, length of service, and employment status. The demanding job by receiving an overload as they fill the gap of scarcity of clinical instructors to cater the needs of an overflowing number of nursing students that needs to be exposed to the clinical area in strengthening the clinical competence of students contributes to heavy workload.

The study found a moderate correlation between workload and lifestyle management, indicating that as workload increases, adjustments in lifestyle follow to some degree. With the high workload being experienced, they exhibit a high level of socialization.

Although stress is inevitable, clinical instructors highly manage their stress, by practicing healthy habits and modifying their lifestyle including diet and activities.

Being tenure on the job and receiving a full-time load is exhausting, therefore a high level of biophysiological lifestyle management is needed to compensate for the effects on health. Lifestyle management is generally strong and rises with heavier workload, but consistent gaps appear in exercise and caffeine control. A moderate workload–lifestyle link suggests many instructors adapt their routines as demands intensify.

With this, they obtained the optimum wellness or high level of well-being that reflects a strong resilience.

Based on the study's results and conclusions, recommendations are made to curb the heavy work burdens on clinical teachers in nursing schools located in a highly urbanized area. These recommendations are meant toward the promotion of faculty well-being and improve teaching and learning outcomes in the interest of sustainability in nursing education.

Management of academic workload should be given priority by administrators of schools. With more nursing students being admitted, institutions must search for ways to enable a fair balance in the proportion of teaching loads assigned to both full-time and part-time faculty. Such methods may include hiring full-time instructors with suitable qualification levels, preventing faculty members from taking on too many subjects or sections, and allowing the use of some technological tools to lessen the preparation time for lectures and grading processes. Schools may also want to implement automated systems for grading and test administration to reduce repetitive and mechanical academic tasks.

Second, because the clinical load is high, there should be strong collaboration between nursing schools and hospital partners in coming up with organized clinical schedules to maintain the recommended CHED faculty-to-student ratio. Allowing some instructors to be overburdened by student supervision will diminish hands-on training and also lead among the instructors. The clinical instructors may also undergo training and workshops so that they will be informed of the best clinical teaching practices and be strengthened in guiding the students in the hospitals.

Third, administrative tasks must be rationalized and streamlined to prevent overwhelming clinical instructors. Administrative skill-building tasks like committee work, reports, grades, and others must be well spread out with special concern for full-time faculty. The application of digital platforms for record-keeping, communication, and reporting will serve considerably to lessen handwork and allow the instructors more time to devote to teaching and mentoring. This should be supported by management establishing clear policies on administrative tasks and support staff for these tasks.

Adding on, for the well-being of clinical instructors to be maintained, policies, intervention plans, and institutional support must be put in place. Schools should come up with workload policies that coincide with CHED standards and are based on evidence-based practices. Periodic evaluation of workload distribution and faculty feedback mechanisms should be institutionalized to ensure that faculty concerns are being addressed on time. Furthermore, wellness programs, counseling services, and stress management workshops must be made available for clinical instructors in the interest of promoting mental health and work-life balance. Should these measures be put into effect, a supportive and efficient environment can be created for clinical instructors to thrive in their many roles while maintaining professional satisfaction and well-being.

Lastly, to sustain performance, implement fair load allocation, cap simultaneous assessments, and audit schedules before approval. Add administrative support and monitor policy compliance on teaching and clinical assignments. Provide targeted time-management seminars, routine health checks,

and low-friction wellness supports (sleep windows, brief movement breaks, healthy food access). Encourage regular exercise, adequate sleep, balanced diet, and avoidance of excess caffeine, sugar, alcohol, and smoking/vaping. Expand hiring to reduce overload and fund programs that normalize daily health routines across all faculty. Modify lifestyle to maintain their well-being by engaging to a healthy lifestyle by doing regular exercise; getting enough sleep; eating a healthy diet; avoiding caffeine, too much sugar, alcohol, cigarette and vape smokes, and drugs. They can have a routine check-up once every 6 months to monitor their health as schools should initiate, support, or create programs or health initiatives that promote healthy lifestyle and well-being of clinical instructors that ultimately contributes to a stronger healthcare education system, a well-prepared nursing workforce, and improved public health outcomes.

7. Acknowledgment

The researcher would like to express his special gratitude to his adviser for a tremendous mentor, her advice to the researcher was priceless. The members of the oral defense panel, their brilliant ideas were very helpful in the study. To the researcher's respondents, thank you for their trust, time and participation in the study. Above all, to God Almighty, bestowing the strength and wisdom to overcome the difficulties, this study might not have been completed.

8. References

- Altmiller, G. (2016, June). Strategies for Providing Constructive Feedback to Students. www.nursingcenter.com; Nurse Educator.
- American Lung Association. (2020, July 13). Health effects of secondhand smoke. www.lung.org; American Lung Association.
- Anderson, D. (2025). Strategies for Managing High Workload and Stress. www.corporatewellnessmagazine.com.
- Bacilig, Cristina Eloisa. "In First Ever Report on Physical Inactivity, WHO Warns of Diseases, Costs." INQUIRER.net, 21 Oct. 2022,
- Balaton, I., Szépné, H. V., Kiss, T., Adamu, U. G., Szulc, A. M., & Csernoch, L. (2023). The Importance of Physical Activity in Preventing Fatigue and Burnout in Healthcare Workers. *National Library of Medicine*, 11(13). <https://doi.org/10.3390/healthcare11131915>
- Bautista, Raquel C, et al. "Stress Management Practices among Clinical Instructors in University of Bohol." *University of Bohol Multidisciplinary Research Journal*, vol. 8, no. 1, 2020, pp. 42–57, <https://doi.org/10.15631/ub.mrj.v8i1.128>.
- Bisht, R. (2024). What is Stratified Sampling? Definition, Types & Examples | Researcher.Life. [Researcher.life](https://researcher.life).
- Boeskens, L., & Nusche, D. (2021). Not enough hours in the day: Policies that shape teachers' use of time. *OECD Education Working Papers*, 245, 55. <https://doi.org/10.1787/15990b42-en>
- Buquia, W., Gador, J., & Cañete, D. (2024). Teachers' Stress and Coping Mechanisms in the New Normal. *Kalamboan*, 2. <https://doi.org/10.61864/kalamboan.v2i1.102>
- Catalano, M. A., & Gilleskie, D. B. (2021). Impacts of local public smoking bans on smoking behaviors and tobacco smoke exposure. *Health Economics*, 30(8). <https://doi.org/10.1002/hec.4280>
- Creagh, Sue, et al. "Workload, Work Intensification and Time Poverty for Teachers and School Leaders: A Systematic Research Synthesis." *Educational Review*, vol. 1, no. 1, 24 Apr. 2023, pp. 1–20
- Daniels, Chloe. "The Nurse behind the Name." American National University, 30 Apr. 2024, an.edu/the-nurse-behind-the-name/.
- Davisaraei, Y. B., Nateghi, S., Rashidipour, H., Rase-Abdollahi, P., & Rashidy-Pour, A. (2024). Coffee and sleep: Benefits and risks. *Progress in Brain Research*, 288, 81–114. <https://doi.org/10.1016/bs.pbr.2024.06.014>
- Del Pilar, Levann Dulf D. (2023). "Physical Activity Domains and Teaching Effectiveness in the New Normal - IIARI." Institute of Industry and Academic Research Incorporated
- Durrah, O. (2022). Do we need friendship in the workplace? The effect on innovative behavior and mediating role of psychological safety. *Current Psychology*, 42. <https://doi.org/10.1007/s12144-022-03949-4>

- El-Hashash, A. (2022). Weekly Quizzes Reinforce Student Learning Outcomes and Performance in Biomedical Sciences in-course Assessments. *Open Journal of Educational Research*, 168–178. <https://doi.org/10.31586/ojer.2022.273>
- Factor, Elisa Monette R., and Allan B. de Guzman. “Explicating Filipino Student Nurses’ Preferences of Clinical Instructors’ Attributes: A Conjoint Analysis.” *Nurse Education Today*, vol. 55, Aug. 2017, pp. 122–127
- Firth, J., Gangwisch, J. E., Borsini, A., Wootton, R. E., & Mayer, E. A. (2020). Food and mood: how do diet and nutrition affect mental wellbeing? *BMJ*, 369(1). <https://doi.org/10.1136/bmj.m2382>
- Flaubert, J. L., Menestrel, S. L., Williams, D. R., & Wakefield, M. K. (2021). Supporting the Health and Professional well-being of Nurses. In
- Gameiro, Mafalda, et al. “A Person-Centered Approach to the Job Demands–Control Model: A Multifunctioning Test of Addictive and Buffer Hypotheses to Explain Burnout.” *International Journal of Environmental Research and Public Health*, vol. 17, no. 23, 29 Nov. 2020, p. 8871
- Gcawu, S. N., & van Rooyen, D. (2022). Clinical teaching practices of nurse educators: An integrative literature review. *Health SA Gesondheid*, 27(27). <https://doi.org/10.4102/hsag.v27i0.1728>
- Gonzalo, Angelo. “Sister Callista Roy - Adaptation Model of Nursing - Nurseslabs.” *Nurseslabs*, 30 Apr. 2024, nurseslabs.com/sister-callista-roys-adaptation-model/.
- Guest, N. S., Van Dusseldorp, T. A., Nelson, M. T., Grgic, J., Schoenfeld, B. J., Jenkins, N. D. M., Arent, S. M., Antonio, J., Stout, J. R., Trexler, E. T., Smith-Ryan, A. E., Goldstein, E. R., Kalman, D. S., & Campbell, B. I. (2021). International Society of Sports Nutrition Position stand: Caffeine and Exercise Performance. *Journal of the International Society of Sports Nutrition*, 18(1). <https://doi.org/10.1186/s12970-020-00383-4>
- Halton, J., Ireland, C., & Vaughan, B. (2024). The transition of clinical nurses to nurse educator roles – A scoping review. *Nurse Education in Practice*, 78, 104022–104022. <https://doi.org/10.1016/j.nepr.2024.104022>
- HealthLink British Columbia. “Healthy Lifestyle Actions to Reduce and Manage Stress | HealthLink BC.” www.healthlinkbc.ca, Sept. 2018,
- Jahnel, T., Ferguson, S. G., Shiffman, S., & Schüz, B. (2019). Daily stress as link between disadvantage and smoking: an ecological momentary assessment study. *BMC Public Health*, 19(1). <https://doi.org/10.1186/s12889-019-7631-2>
- Lee, D., Jang, T., Kim, H., & Kang, M. (2021). The relationship between working hours and lifestyle behaviors: Evidence from a population-based panel study in Korea. *Journal of Occupational Health*, 63(1). <https://doi.org/10.1002/1348-9585.12280>
- Lee, Seung-Yeon, et al. (2022). “Status of Workers’ Health Behavior and the Association between Occupational Characteristics and Health Behavior.” *International Journal of Environmental Research and Public Health*, vol. 19, no. 20, 11 Oct. 2022, p. 13021
- Lee, Wonil, et al. (2022). “The Job Demand-Control-Support Model and Work-Related Musculoskeletal Complaints in Daytime and Nighttime Janitors: The Mediating Effect of Burnout.” *Applied Ergonomics*, vol. 105, Nov. 2022, p. 103836
- McCombes, Shona. “Descriptive Research Design | Definition, Methods and Examples.” *Scribbr*, 15 May 2019
- Miles, M. (2023, June 16). Interpersonal Relationships: Tips to Improve and Maintain Them.
- Mohanraj, P. S., Das, A., Rajendran, V., Gopal, N., Saravanan, K., & Balan, Y. (2024). Evaluating the Effectiveness of Online Assessments and Their Parameters as Predictors of Academic Performance in Undergraduate Medical Education. *Cureus*. <https://doi.org/10.7759/cureus.62129>
- Msosa, A., Bruce, J., & Crouch, R. (2022). Qualitative perspectives of teaching and learning in clinical skills laboratories in a developing country. *International Journal of Africa Nursing Sciences*, 16, 100410. <https://doi.org/10.1016/j.ijans.2022.100410>
- Mulder, Patty. “Job Demand Control Model by Robert Karasek.” *Toolshero*, 12 Oct. 2017
- Pagela, Rolando. “Challenges and coping mechanisms of select filipino public school teachers on administrative workload.” *ISRG Journal of Arts, Humanities and Social Sciences*, vol. Volume – II, no. Issue-III, 20 June 2024, isrgpublishers.com/wp-content/uploads/2024/06/ISRGJAHSS4892024.pdf,

- Pauchon, B., Beauchamps, V., Gomez-Mérino, D., Erblang, M., Drogou, C., Beers, P. V., Guillard, M., Michaël Quiquempoix, Léger, D., Mounir Chennaoui, & Fabien Sauvet. (2024). Caffeine Intake Alters Recovery Sleep after Sleep Deprivation. *Nutrients*, 16(20), 3442–3442. <https://doi.org/10.3390/nu16203442>
- Petiprin, Alice. “Sister Callista Roy - Nursing Theorist.” *Nursing Theory*, 2016, [nursing-theory.org/nursing-theorists/Sister-Callista-Roy.php](https://nursing-theorists/Sister-Callista-Roy.php).
- Pierce, Renee. “Compassion Fatigue in Nurse Educators: Understanding and Addressing Emotional Burnout in Healthcare Teaching.” *Faculty Focus | Higher Ed Teaching & Learning*, 9 Sept. 2024
- Sarac, E., Yildiz, E., & Odabas, D. (2023). The impact of healthy lifestyle behaviors on productivity at work: A factory example. *Turk Journal Public Health*. doi: 10.20518/tjph.1232243
- Satoh, M., Fujimura, A., & Sato, N. (2020). Competency of academic nurse educators. *SAGE Open Nursing*, 6(1). <https://doi.org/10.1177/2377960820969389>
- Scroope, Chara. “Filipino Culture.” *Cultural Atlas, Mosaica*, 2017, culturalatlas.sbs.com.au/filipino-culture/filipino-culture-family.
- Songcayawon, M. A. (2024). School Heads’ Administrative Skills and Teachers’ Performance. *Kalamboan*, 2. <https://doi.org/10.61864/kalamboan.v2i1.103>
- Tarraya, Hilger Ojos. Teachers’ Workload Policy: Its Impact on Philippine Public School Teachers. *Puissant*, 24 Apr. 2023.
- Tsai, Allison. “How to Maintain a Healthy Lifestyle: 12 Effective Tips.” *Healthline*, 6 Mar. 2024
- Villamor, K. J. A., Abne, D. F. M., Bajalan, J. C. D., Jara, C. K., & Linda, J. A. D. (2024). Balancing Burdens: Examining Workload, Time Pressure, and Burnout Among Bank Employees. *Psychology and Education: A Multidisciplinary Journal*, 18(5), 444–446. <https://doi.org/10.5281/zenodo.10909327>

Perceived Effectiveness of Police Visibility Strategies in Barangay 32, Bacolod City

Jessa S. Brillantes*, Wilfredo O. De La Cruz, Liza Joy B. Barican

College of Criminal Justice Education, STI West Negros University, Bacolod City, Philippines

*Email : jessabrillantes68@gmail.com

Abstract

Police visibility strategies are vital in maintaining peace and order by deterring crime, enhancing public safety, and strengthening community trust in law enforcement. However, limited evidence exists on how residents perceive the effectiveness of these strategies at the barangay level. This study assessed the perceived effectiveness of police visibility strategies in maintaining peace and order among residents of Barangay 32, Bacolod City, Philippines, and determined whether perceptions significantly differed according to demographic characteristics. Employing a descriptive quantitative research design, data were gathered from 253 residents selected through simple random sampling using a validated and reliable survey instrument. Weighted mean, independent samples t-test, and one-way ANOVA were used for data analysis. Findings revealed that police visibility strategies were perceived as highly effective, with an overall mean of 3.99. Enforcement received the highest rating (4.24), indicating strong public confidence in the police's ability to uphold peace and order, while police-community relationship building received the lowest, although still rated highly. A significant difference in perceptions was found according to sex ($p = 0.031$), with female respondents expressing greater confidence in police visibility initiatives, whereas no significant differences were observed based on age or years of residence. The findings underscore the importance of sustaining visible police presence and strengthening community-oriented and gender-responsive policing strategies to enhance public trust, improve police effectiveness, and support evidence-based peace and order initiatives.

Keywords: police visibility; peace and order; crime prevention; community policing; public safety

1. Introduction

Maintaining peace and order remains a fundamental challenge in contemporary urban governance, particularly in densely populated communities where social dynamics and environmental conditions influence crime vulnerability. In Barangay 32, Bacolod City, Philippines, police visibility strategies comprising foot patrols, mobile patrols, and sustained community engagement serve as proactive mechanisms designed to deter criminal activity, enhance perceived safety, and strengthen institutional trust. These strategies are grounded in the principle that consistent and observable law enforcement presence not only discourages potential offenders but also reinforces the psychological assurance of safety among residents.

Empirical evidence strongly supports the effectiveness of police visibility in crime prevention and community reassurance. Studies have shown that visible patrols significantly increase perceived safety and reduce criminal opportunities (Ejoc & Alferez, 2018), while reductions in police presence are associated with increased crime incidence, underscoring the importance of sustained visibility (Weisburd, 2021). In the Philippine context, targeted initiatives such as bike patrols and rapid-response anti-crime units have demonstrated measurable reductions in crime rates (Samonte, 2023), while reallocating officers from administrative duties to active patrol functions further enhances deterrence outcomes (De Kock & Christo, 2022). Moreover, strategic deployment based on temporal and spatial crime patterns, as well as data-driven resource allocation, has been shown to significantly improve operational efficiency and public trust (Dau et al., 2021; Sukanya et al., 2021).

Further research emphasizes that the effectiveness of police visibility is maximized when it is adaptive, strategic, and intelligence-led. Intensified patrols during high-risk periods reduce theft and violence (Caliwan, 2022), while real-time data integration strengthens proactive crime prevention and socio-economic stability (Ramakrishnan et al., 2024). In addition, sustained visibility fosters stronger community confidence and cooperation with law enforcement institutions (Breva, 2024; Pilar, 2023), reinforcing the role of police presence as both a deterrent mechanism and a trust-building instrument. Despite these advancements, most existing studies remain concentrated on macro-level or city-wide

analyses, with limited empirical focus on barangay-level implementation where policing outcomes are most directly experienced by residents.

Addressing this critical gap, this study advances a localized and evidence-integrated framework by examining both community perceptions and the empirical effectiveness of police visibility strategies in Barangay 32, Bacolod City. Unlike prior research that treats visibility either as a perceptual construct or an operational metric in isolation, this study uniquely integrates both dimensions to evaluate how patrol strategies influence perceived safety and actual public order outcomes at the grassroots level. Anchored in Sustainable Development Goal 16: Peace, Justice, and Strong Institutions, the study contributes to strengthening inclusive, accountable, and data-informed policing systems by generating context-specific evidence that can guide more effective and community-responsive law enforcement policies.

2. Objectives

This study aimed to evaluate the perceived effectiveness of police visibility strategies in maintaining peace and order among residents of Barangay 32, Bacolod City. Specifically, it sought to describe the respondents' demographic profile in terms of age, sex, and years of residence, assess the level of effectiveness of police visibility strategies as perceived by the community, and determine whether significant differences exist in these perceptions when respondents are grouped according to their demographic characteristics. By providing a localized assessment of police visibility initiatives, the study offers empirical insights that can inform community-oriented policing and strengthen evidence-based peace and order strategies.

3. Materials and methods

3.1 Research Design

This study employed a descriptive quantitative research design to evaluate the perceived effectiveness of police visibility strategies in maintaining peace and order among residents of Barangay 32, Bacolod City. This design was deemed appropriate as it enabled the systematic collection and analysis of numerical data to describe respondents' demographic characteristics and assess their perceptions regarding the effectiveness of police visibility. Furthermore, the design facilitated the examination of differences in perceived effectiveness across demographic groups, providing empirical evidence to support community-oriented policing and local crime prevention strategies.

3.2 Participants and Sampling

The respondents consisted of 253 residents of Barangay 32, Bacolod City, selected from a population of 759 through simple random sampling to ensure that each resident had an equal chance of participation and to minimize sampling bias. Respondents were categorized according to age, sex, and years of residence to facilitate the analysis of differences in the perceived effectiveness of police visibility strategies.

3.3 Research Instrument

A self-developed questionnaire served as the primary data-gathering instrument. It underwent expert validation by three police officers with master's degrees, yielding an overall validity rating of 3.96 (Excellent). A pilot test involving 30 non-participating residents from Barangay Mandalagan produced a Cronbach's alpha coefficient of 0.881, indicating very good internal consistency and confirming the instrument's reliability.

3.4 Data Collection Procedure

Following approval from the Research Coordinator, the Dean of the College of Criminal Justice Education, and the Barangay Captain of Barangay 32, questionnaires were administered to selected residents who voluntarily participated after providing informed consent. Completed questionnaires were securely stored for data processing and subsequently disposed of in accordance with the Data Privacy Act of 2012 to ensure confidentiality and data security.

3.5 Data Analysis

Various statistical tools were used to analyze the data and address the study's objectives. Frequency counts and percentages were used to describe the respondents' demographic profile in terms of age, sex, and years of residence. Mean and standard deviation were employed to assess the

perceived effectiveness of police visibility strategies, while independent samples t-test and one-way ANOVA were used to determine significant differences in perceived effectiveness when respondents were grouped according to their demographic characteristics.

3.6 Ethical Considerations

The study adhered to the ethical guidelines of the College of Criminal Justice Education of STI West Negros University, the Declaration of Helsinki, and the Data Privacy Act of 2012. Participation was voluntary and supported by informed consent, while respondents' identities and responses were kept confidential. To ensure data privacy and security, all hard-copy questionnaires were properly destroyed after data processing.

4. Results

4.1 Demographic Profile of the Respondents

Table 1 presents the demographic profile of the respondents in terms of age, sex, and years of residency. Descriptive analysis using frequency and percentage was employed to describe the distribution of respondents across the different demographic categories.

Variables	Frequency	Percentage
Age		
Younger than 31 years old	84	33.2
31 – 35 years old	91	36.0
36 years old or older	78	30.8
Sex		
Male	100	39.5
Female	153	60.5
Years of Residency		
7 years or less	131	51.8
More than 7 Years	122	48.2
Total	253	100.0

In terms of age, the largest proportion of respondents belongs to the 31–35 years old group (36.0%), followed closely by those younger than 31 years old (33.2%), while the smallest group is those aged 36 years and older (30.8%). Regarding sex, the majority of respondents are female (60.5%), while males account for 39.5%. In terms of years of residency, respondents are almost evenly split between those who have lived in the barangay for 7 years or less (51.8%) and those who have resided for more than 7 years (48.2%).

4.2 Perceived Effectiveness of Police Visibility Strategies

Table 2 presents the perceived effectiveness of police visibility strategies in maintaining peace and order in Barangay 32. Descriptive analysis using weighted mean was conducted to determine the level of effectiveness of each indicator.

Statement		Mean	Std. Deviation	Verbal Description
1	How effective is the visiting frequency of police patrols in your area?	3.97	0.791	High
2	How effective is the current level of police presence in your community. How do you feel it impacts overall peace and order?	3.95	0.843	High
3	How effective the police communication about safety initiatives in your area?	3.98	0.797	High
4	How effective does police officers build relationship toward the residents in your area?	3.93	0.877	High
5	How effective the police address community concerns and complaints?	3.95	0.820	High
6	How effective is the response time of police to community concerns?	3.98	0.792	High
7	How effective are the police mobile patrol to secure the safety of the community?	4.02	0.833	High
8	How effective are the police foot patrol to secure the safety of the community?	3.98	0.955	High
9	How effective are the police motorcycle patrols to secure the safety of the community?	4.04	0.758	High
10	How effective are police officers in enforcing laws for maintaining peace in your area?	4.24	0.701	Very High
Total		3.99	0.525	High

Table 2 presents the effectiveness of police visibility strategies in maintaining peace and order in Barangay 32. The overall weighted mean of respondents' responses was 3.99, interpreted as high, which indicates that respondents perceive police visibility strategies as quite effective in maintaining peace and order within the community.

In line with this, police officers' efforts in building relationships with residents obtained the lowest mean score of 3.93, interpreted as high. Meanwhile, police officers' effectiveness in enforcing laws obtained the highest mean score of 4.24, interpreted as very high. The remaining indicators, including patrol frequency, presence, communication, response time, and mobile and foot patrols, were all interpreted as high.

4.3 Analysis of Variance for the Significant Difference in Perceived Effectiveness When Grouped According to Age

Table 3 Inferential analysis was conducted to determine if demographic variables influenced the respondents' perceptions. The ANOVA test for age indicated no significant differences in perceived effectiveness.

Group	Mean	t-value	p-value	Interpretation
Younger than 31 years old	4.03	2.003	0.137	Not Significant
31 – 35 years old	4.05			
Older than 35 years old	3.89			

Table 3 shows the ANOVA for the significant difference in the level of effectiveness of police visibility in preventing crimes as perceived by the community when respondents are grouped according to age. As observed, the p-value (0.137) is greater than the alpha level of 0.05. *Thus, there is insufficient evidence to reject the null hypothesis.* Therefore, at a 5% level of significance, there are no significant differences in the perceived effectiveness of police visibility in preventing crimes when respondents are grouped according to age, indicating that perceptions are generally consistent across different age groups.

4.4 Test of Significant Difference in Perceived Effectiveness When Grouped According to Sex

Table 4 Inferential analysis was conducted to determine if demographic variables influenced the respondents' perceptions. The t-test for sex reveals a significant difference among the respondents.

Group	Mean	t-value	p-value	Interpretation
Male	3.90	-2.172	0.031	Significant
Female	4.05			

Table 4 presents the t-test for the significant difference in the level of effectiveness of police visibility in preventing crimes as perceived by the community when grouped according to sex. As observed, the p-value (0.031) is less than the alpha level of 0.05. *Thus, the null hypothesis is rejected.* This indicates that there is a significant difference in the perceived effectiveness of police visibility in preventing crimes when respondents are grouped according to sex, suggesting that male and female respondents differ in how they assess police visibility strategies.

4.5 Test of Significant Difference in Perceived Effectiveness When Grouped According to Years of Residence

Table 5 Inferential analysis was conducted to determine if demographic variables influenced the respondents' perceptions. The t-test for years of residence indicated no significant differences in perceived effectiveness.

Group	Mean	t-value	p-value	Interpretation
7 years or less	3.99	-0.063	0.950	Not Significant
More than 7 years	3.99			

Table 5 shows the t-test for the significant difference in the level of effectiveness of police visibility in preventing crimes as perceived by the community when respondents are grouped according to years of residency. As observed, the p-value (0.950) is greater than the alpha level of 0.05. *Thus, there is insufficient evidence to reject the null hypothesis.* Therefore, at a 5% level of significance, there are no significant differences in the perceived effectiveness of police visibility in preventing crimes when respondents are grouped according to years of residency, indicating that perceptions are generally consistent regardless of length of stay in the community.

5. Discussion

The findings demonstrate that police visibility strategies are perceived as highly effective in maintaining peace and order in Barangay 32, Bacolod City. This is firmly supported by the overall high rating of police visibility strategies, with law enforcement receiving the highest evaluation. The results reinforce the widely accepted assumption that visible police presence deters criminal activity, increases residents' sense of safety, and strengthens confidence in law enforcement. These findings are consistent with the work of Ejoc and Alferez (2018), who found that visible police patrols contribute significantly to crime prevention and public reassurance. Likewise, Weisburd (2021) emphasized that sustained police presence is associated with lower crime rates, while Samonte (2023) and De Kock and Christo (2022) reported that proactive and highly visible policing discourages criminal behavior and enhances public order. The present findings further support the

systematic review of Dau et al. (2023), which resolved that strategically deployed police presence improves both crime prevention and public confidence.

Although all indicators were rated highly, police officers' ability to build relationships with residents received the lowest mean score. While this result does not diminish the overall effectiveness of police visibility, it suggests that operational visibility alone may not be sufficient to maximize public trust. This interpretation is supported by Trojanowicz (1990), who argued that community policing extends beyond police-community relations and requires sustained collaboration between police officers and citizens. Similarly, Pilar (2023) emphasized that peace and order are strengthened when communities actively participate in policing initiatives, while Bрева (2024) demonstrated that public perceptions improve when police visibility is complemented by meaningful community engagement. Studies by Sukanya et al. (2022) and Ramakrishnan et al. (2024) further suggest that effective police patrols should combine visible presence with strategic deployment and community interaction to maximize public safety outcomes. Collectively, these studies support that strengthening police-community relationships can enhance the effectiveness of already successful visibility strategies.

The inferential findings revealed that sex was the only demographic variable associated with a significant difference in perceived effectiveness, with female respondents expressing more favorable perceptions of police visibility than male respondents. This conclusion is supported by the statistical evidence but does not establish causation. A possible explanation is provided by Girija (2020), who reported that increased police visibility enhances women's perception of safety by reducing opportunities for harassment and encouraging crime reporting. However, the findings differ from those of Viernes (2025), who found no significant gender differences in perceptions of police visibility, suggesting that demographic influences may vary depending on community context and policing practices. In contrast, the absence of significant differences according to age and years of residence indicates that residents generally share similar perceptions regardless of demographic background. This finding supports the observations of Valenzuela and Tamayo (2024) and Villa (2021), who argued that perceptions of police visibility are often shaped by shared community experiences rather than individual demographic characteristics. However, contrasting evidence from Gomez et al. (2022) and Da Silva et al. (2024) suggests that contextual factors, crime patterns, and local social conditions may influence perceptions in other settings.

Overall, the findings strengthen existing evidence that police visibility remains a fundamental component of effective community policing. They support current policing models that emphasize visible patrols as both a crime deterrence mechanism and a means of enhancing public confidence while highlighting the importance of integrating enforcement with stronger community partnerships. The study also contributes localized empirical evidence at the barangay level, where policing outcomes are directly experienced but remain underrepresented in the literature. Future research should examine the factors underlying gender differences in perceptions through qualitative or mixed-method approaches, compare police visibility strategies across barangays with varying crime rates, and investigate how patrol frequency, community engagement, and intelligence-led deployment interact to influence both perceived and actual public safety. Such studies would provide stronger evidence for developing more responsive, inclusive, and evidence-based policing policies aligned with Sustainable Development Goal 16 on Peace, Justice, and Strong Institutions.

6. Conclusion

The study concludes that police visibility strategies in Barangay 32, Bacolod City are highly effective in maintaining peace and order, as reflected by the high level of confidence expressed by residents. The findings reveal that all dimensions of police visibility, including patrol presence, communication, responsiveness, and enforcement, are positively perceived, with enforcement emerging as the strongest aspect of police operations. However, the relatively lower rating for police-community relationship building suggests the need to strengthen community-oriented policing initiatives to further enhance trust, cooperation, and public engagement. The significant difference in perceptions according to sex indicates that police visibility may be particularly effective in enhancing

women's sense of safety, while the absence of significant differences based on age and years of residency suggests that these strategies are broadly recognized and appreciated across demographic groups. In light of these findings, it is recommended that law enforcement agencies sustain highly rated patrol and enforcement activities while placing greater emphasis on community engagement programs and gender-responsive policing approaches. Future studies are encouraged to expand the scope to other barangays in Bacolod City, compare communities with varying crime rates, and examine the factors underlying gender-based differences in perception to provide deeper insights for developing more responsive and inclusive public safety policies.

7. Acknowledgements

The researchers would like to express their sincere gratitude to the faculty members and research personnel for their guidance and support throughout the conduct of this study. Special appreciation is extended to the Research and Publication Office for its invaluable assistance and coordination during the research process. The researchers also wish to acknowledge Busaing, Genesis M., Lo, John Paul B., Oblido, Welven E., Semellano, Cristian G., and Tadeja, Shanric Kyle V. for their generous help and cooperation during the data collection phase, which greatly contributed to the successful completion of this study. Finally, heartfelt thanks are extended to all individuals who, in one way or another, provided encouragement, guidance, and unwavering support throughout this academic endeavor. Above all, the researchers offer their deepest gratitude to Almighty God for His wisdom, strength, and countless blessings bestowed upon them throughout this journey.

8. References

- Adams, T. (2010). *Police field operations*. Course Hero. <https://www.coursehero.com/file/pe9onir/Theoretical-and-Conceptual-Framework-In-his-book-Police-Field-Operations-Thomas>
- Breva, A. V. (2024). Police visibility and public perceptions towards an enhanced policy on police patrol. *International Journal of Research Studies in Education*, 13(18). <https://doi.org/10.5861/ijrse.2024.24140>
- Caliwan, C. L. (2022). More cops in streets, public places as “ber” months begin. *Philippine News Agency*. <https://www.pna.gov.ph/articles/1182661>
- Dau, P. M., Vandeviver, C., Dewinter, M., Witlox, F., & Beken, T. V. (2023). Policing directions: A systematic review on the effectiveness of police presence. *European Journal on Criminal Policy and Research*, 29(2), 191–225. <https://doi.org/10.1007/s10610-021-09500-8>
- Ejoc, J. M., & Alferez, J. A. L. (2018). Police visibility in the prevention of crimes, Pinamungajan Police Station, Cebu: Implications to effective law enforcement service. *International Journal of Social Science and Humanities Research*, 6(4), 1013–1016. <https://www.researchpublish.com/upload/book/Police%20Visibility%20in%20the%20Prevention-7784.pdf>
- Friedman, B. (2022). Are police the key to public safety? The case of the unhoused. *American Criminal Law Review*, 59, 1597–1648. <https://www.law.georgetown.edu/american-criminal-law-review/in-print/volume-59-number-4-fall-2022/are-police-the-key-to-public-safety-the-case-of-the-unhoused/>
- Girija. (2020). Street police patrolling to reduce crime against women in public spaces in India. *J-PAL*. <https://www.povertyactionlab.org/evaluation/street-police-patrolling-reduce>
- McGrew, BM (2016, March 24). Koper curve and SmartForce. *SmartForce Blog*. <https://smartforcetech.com/blog/adventos/koper-curve-and-smartforce>
- Newzroom Afrika. (2022). *Policing expert Christo de Kock speaks about police visibility in crime hotspots* [Video]. YouTube. <https://www.youtube.com/watch?v=NnIY4BUGjBg>
- Pilar. (2023). When there is peace, there is order: Bacolod City’s cognizance on the implementation of peace and order. *Puissant*. <https://puissant.stepacademic.net/puissant/article/view/270/96>
- Ramakrishnan, R., Chilakamarri, S., Budda, R. M., & Anifa, M. (2024). A quantitative study on real-time police patrol route optimization using dynamic hotspot allocation. *International Journal of Advanced Computer Science and Applications*, 15(6). <https://doi.org/10.14569/IJACSA.2024.0150603>

- Samonte, S. (2023). Importance of police visibility in crime prevention in Quezon City. *Philippine News Agency*. <https://www.pna.gov.ph/opinion/pieces/786-importance-of-police-visibility-in-crime-prevention-in-quezon-city>
- Sukanya, S., Sen, G., & Ghosh, S. K. (2022). A literature review on police patrolling problems. *Annals of Operations Research*, 316(2), 1063–1106. <https://doi.org/10.1007/s10479-021-04167-0>
- Trojanowicz, R. C. (1990). Community policing is not police-community relations. *FBI Law Enforcement Bulletin*, 59(10), 6–11. <https://www.ojp.gov/ncjrs/virtual-library/abstracts/community-policing-not-police-community-relations>
- Valenzuela, R. V. V., & Tamayo, M. R. B. (2024). *Effects of police visibility as crime reduction measure*. Lyceum of the Philippines University. https://www.researchgate.net/publication/385565120_Effects_of_Police_Visibility_as_Crime_Reduction_Measure
- Viernes, M. P. (2025). Effectiveness of police visibility strategies as crime prevention initiatives against criminality in the Municipality of San Manuel, Isabela. *International Journal of Research in Engineering, Science and Management*, 8(2), 19–24. <https://journal.ijresm.com/index.php/ijresm/article/view/3407>
- Weisburd, S. (2021). Police presence, rapid response rates, and crime prevention. *Review of Economics and Statistics*, 103(2), 280–293. https://doi.org/10.1162/rest_a_00889

Science Teachers' Readiness and Resilience in the Implementation of MATATAG Curriculum

Genovie Gatdula-Tagumand*, Leni Carpintero - Francisco

STI West Negros University, Philippines

*Email : genovie.tagum@deped.gov.ph

Abstract

This study examined Science teachers' readiness and resilience in the implementation of the MATATAG Curriculum as perceived by school heads and science head teachers or coordinators in one medium-sized schools division in the National Capital Region during School Year 2025 to 2026. Using a quantitative descriptive design, the study focused on four domains: instructional designers, advocates of lifelong learning, promoters of ethical digital literacy, and catalysts of transformation. The respondents were 70 school heads and science head teachers or coordinators from 22 public elementary schools and 13 public junior high schools, identified through total enumeration. Data were gathered through a structured, self-made questionnaire, using descriptive and relational analytical schemes and analyzed using mean, and Spearman's rho. The findings showed that Science teachers were rated High to Very High in both readiness and resilience across the four domains. The results also revealed a very strong positive relationship between readiness and resilience. Based on these findings, an enrichment plan was proposed to strengthen MATATAG implementation.

Keywords: Enrichment Plan; MATATAG Curriculum; Readiness; Resilience; Science Teachers

1. Introduction

Secondary education now carries a double burden. Schools are expected to teach subject knowledge well, but they are also expected to form learners who can think, solve problems, use technology wisely, and respond to a world that keeps changing. In science education, this pressure is sharper because science classes do not only transmit facts. They also require inquiry, evidence use, ethical judgment, and real-world application. The urgency of this concern can be seen in large-scale assessment results. In PISA 2022, only 23% of 15-year-old students in the Philippines reached at least Level 2 proficiency in science, compared with the OECD average of 76%, and almost no Filipino learners reached the highest proficiency levels. These results suggest that science learning remains weak in many settings and that stronger instructional support is badly needed.

Within this national condition, the Department of Education pushed curriculum reform through the MATATAG Curriculum. Its key features include a decongested curriculum, stronger focus on foundational skills, more balanced cognitive demands, clearer articulation of 21st-century skills, fewer learning areas, stronger emphasis on Values Education and Peace Education, and closer alignment with international standards (DepEd Memorandum No. 054, s. 2023). By School Year 2025 to 2026, the curriculum had already entered actual classroom implementation in elementary and junior high school levels. This made the issue immediate rather than theoretical. Science teachers were already carrying out the revised curriculum in real schools, with real learners, limited time, uneven resources, and growing accountability pressures.

The present study centered on two concerns that matter greatly in curriculum change: readiness and resilience. Readiness referred to how prepared science teachers were to carry out MATATAG-aligned work. Resilience referred to their capacity to sustain that work, adjust when problems arose, and continue performing under pressure. These two concerns were examined through four roles that fit the present demands of science teaching: instructional designers, advocates of lifelong learning, promoters of ethical digital literacy, and catalysts of transformation. These roles are highly relevant in science because science teachers are expected to design inquiry-based lessons, strengthen reflective learning, promote responsible use of information and technology, and connect science learning with values, citizenship, and everyday problem solving.

A key feature of the study is that science teachers were not asked to rate themselves directly. Instead, the study examined science teachers' readiness and resilience as perceived by school heads and science head teachers or coordinators from public elementary and junior high schools. This decision was grounded in function, not convenience. These school leaders and subject coordinators

observe instruction, monitor implementation, review teachers' work, identify recurring strengths and difficulties, and provide support across schools. Because of these roles, they are in a good position to offer a broader assessment of how science teachers are implementing MATATAG in daily school practice.

The conduct of the study was also supported by actual field conditions. Based on the researcher's experience as an education program supervisor, training for the MATATAG Curriculum was limited to only a few days, while schools differed in resources, implementation plans, and support systems. Such variation likely affects science teaching more strongly because science requires alignment among content, inquiry work, assessment, materials, laboratory procedures, and technology use. Previous studies have shown that insufficient preparation, inadequate resources, and uneven institutional support can hinder the effective implementation of science curriculum reforms (Lowe & Appleton, 2015; Öztürk Akar, 2014; Ryder & Banner, 2013)

Two clear gaps also justified the study. First, local evidence remained limited on science teachers' readiness and resilience as perceived by school heads and science head teachers or coordinators within the specific work of MATATAG implementation. Second, division-level evidence from public elementary and junior high schools remained scarce, even though these respondents carry major responsibility in curriculum translation, teacher support, and instructional monitoring. For this reason, the study examined the perceived readiness and resilience of science teachers in one medium-sized schools division in the National Capital Region during School Year 2025 to 2026 as basis for an enrichment plan.

2. Objectives

This study examined the science teachers' level of readiness and resilience in the implementation of the MATATAG Curriculum in one medium-sized schools division in the National Capital Region during School Year 2025 to 2026.

Specifically, it sought to answer the following questions:

1. What is the level of science teachers' readiness in the implementation of the MATATAG Curriculum in the following areas?
 - a. instructional designers
 - b. advocates of lifelong learning,
 - c. promoters of ethical digital literacy
 - d. catalysts of transformation?
2. What is the level of science teachers' resilience in the implementation of the MATATAG Curriculum according to the aforementioned areas?
3. Is there a significant relationship existed between the levels of science teachers' readiness and resilience in the implementation of the MATATAG Curriculum?

Hypothesis of the Study

There is no significant relationship existed between the level of science teachers' readiness and resilience in the implementation of the MATATAG Curriculum?

Assumption of the Study

Science teachers' readiness and resilience in the implementation of the MATATAG Curriculum varies to some levels.

Science teachers' readiness may influence their resilience in the implementation of the MATATAG Curriculum.

3. Materials and Methods

3.1 Research Design

The study used a descriptive research design to examine science teachers' readiness and resilience in implementing the MATATAG Curriculum in one medium-sized schools division in the National Capital Region during School Year 2025 to 2026. Readiness and resilience were examined across four areas: instructional designers, advocates of lifelong learning, promoters of ethical digital literacy, and catalysts of transformation. This design was appropriate because the study aimed to describe existing conditions in actual school settings rather than manipulate variables. It also provided

a clear picture of how school heads and science head teachers or coordinators perceived science teachers' readiness and resilience. Kennedy and Sundberg (2020) noted that quantitative descriptive approaches provide objective measurement and statistical support for educational findings.

3.2 Locale of the Study

The study was conducted in the public elementary and junior high schools of a schools division in the National Capital Region. This division was selected because it provided a concrete setting where DepEd policies were translated into actual school practice and where MATATAG implementation could be observed under varied public school conditions. The division had 22 public elementary schools and 13 public junior high schools, with schools differing in resources, needs, and local conditions. It also had a strong record in academic and co-curricular performance, including the Regional and National Schools Press Conferences, the Regional and National Festivals of Talents, and the Science and Technology Fair, and was among the stronger divisions in literacy and numeracy within the NCR.

3.3 Respondents of the Study

The respondents were 70 school leaders from the 35 participating public schools in the selected schools division, consisting of school heads and science head teachers or coordinators from 22 elementary schools and 13 junior high schools. Of the total, 44 came from the elementary level and 26 came from the junior high school level. The study used total enumeration, which means all eligible respondents were included. This approach ensured full coverage of the target group, reduced sampling error, and reflected the actual composition of school heads and science coordinators across the participating schools.

3.4 Data-Gathering Instrument

The primary instrument was a structured, self-made questionnaire with three parts. Part I gathered the respondents' demographic profile in terms of age, civil status, plantilla position, and average family monthly income. Part II measured science teachers' readiness in implementing the MATATAG Curriculum through 40 items distributed across four domains: instructional designers, advocates of lifelong learning, promoters of ethical digital literacy, and catalysts of transformation. Part III measured science teachers' resilience through another 40 items across the same four domains. All items were rated using a five-point Likert scale from 1 for Very Low to 5 for Very High, which allowed direct comparison of readiness and resilience scores.

3.5 Validity and Reliability

According to Thorndike and Hagen, as cited by Laguda (2011), validity is the suitability of the test for its purposes. It must yield the kind of result it needs. A test is valid if it yields scores that help accomplish the purpose for which it was intended.

Reliability refers to the research instruments' consistency, accuracy, stability, dependency, and predictability. A reliable measuring device is one that, if used for the second time, will yield the same result as it did for the first time (Creswell, 2017).

Content validity was established through expert review by five validators who examined the questionnaire for relevance, clarity, and coverage of the study variables and domains. Their comments were used to revise unclear items and strengthen alignment with the research questions. Using the criteria of Good and Scates, the instrument obtained a mean rating of 4.90, interpreted as Excellent, which indicated strong content validity. Reliability was established through pilot testing with 30 respondents from a neighboring schools division who were not included in the main study. Cronbach's alpha yielded 0.964 for the readiness scale and 0.977 for the resilience scale, both interpreted as excellent internal consistency, showing that the instrument was reliable and suitable for full administration.

3.6 Data-gathering Procedure

Before the administration of the questionnaire, the researcher secured approval from the Schools Division Superintendent. After approval was granted, the researcher coordinated with the school heads and science head teachers or coordinators of the participating schools to arrange suitable schedules for the administration of the instrument. On the agreed dates, a short orientation was

conducted to explain the purpose of the study, the structure of the three-part questionnaire, and the instructions for answering each section. The respondents were also informed that participation was voluntary and that their responses would be kept confidential.

The questionnaire was administered through an online platform to reduce encoding errors and make data consolidation easier. Before the respondents answered the instrument, the platform was explained so that unfamiliarity with its features would not affect their responses. Each respondent was given about 30 minutes to complete the 80 items. After retrieval, the raw data were submitted to a statistician for processing and analysis through SPSS. The resulting descriptive and inferential outputs served as the basis for interpreting science teachers' readiness and resilience in the implementation of the MATATAG Curriculum.

3.7 Research Ethics Protocol

Ethical safeguards were observed throughout the study because it involved the collection of professional and personal data from school heads and science head teachers or coordinators. Informed consent was secured before data collection through a consent letter that explained the purpose of the study, the procedures involved, the type of data to be gathered, and the intended use of the results. Only those who gave voluntary consent were included in the study. Confidentiality and anonymity were also protected by assigning codes instead of using respondents' names in data processing and reporting.

The study was designed to avoid harm and to respect the rights of the respondents at all times. The questionnaire was framed in a way that would not cause psychological discomfort, and participants were informed that they could withdraw from the study at any point without penalty. Data handling and reporting were carried out with care and transparency. Access to the raw data was limited to the researcher and the statistician, the data were stored securely, and the findings were reported faithfully based on the responses gathered.

3.8 Analytical Schemes

This study has two analytical schemes based on the research objectives, which were descriptive and relational.

Objective No.1 used descriptive analytical schemes to determine the level of science teachers' readiness in the implementation of the MATATAG Curriculum across four areas: instructional designers, advocates of lifelong learning, promoters of ethical digital literacy, and catalysts of transformation.

Objective No.2 used the descriptive analytical scheme to determine the level of science teachers' resilience in the implementation of the MATATAG Curriculum according to the aforementioned areas.

Objective No. 3 used a relational analytical scheme was used to examine the relationship between readiness and resilience in the implementation of the MATATAG Curriculum

3.9 Statistical Tools

The data gathered was processed statistically using SPSS. These will be statistically analyzed to answer the study-specific objectives and test the hypotheses presented in Chapter 1.

Objective No. 1, the mean was used to determine the level of science teachers' readiness in the implementation of the MATATAG Curriculum across four areas: instructional designers, advocates of lifelong learning, promoters of ethical digital literacy, and catalysts of transformation.

Objective No. 2, the mean was used to determine the level of science teachers' resilience in the implementation of the MATATAG Curriculum according to the aforementioned areas.

Objective No.3, the Spearman's rho was used to determine the relationship between readiness and resilience in the implementation of the MATATAG Curriculum.

4. Results

This section presents the study's findings drawn from data gathering, statistical analysis, and careful interpretation. The results are arranged according to the three objectives of the study: the level of science teachers' readiness, the level of science teachers' resilience, and the relationship between readiness and resilience in the implementation of the MATATAG Curriculum..

Level of Science Teachers' Readiness in the Implementation of the MATATAG Curriculum

Table 1 *Level of Science Teachers' Readiness in the Implementation of the MATATAG Curriculum in the Area of Instructional Designers*

Items	Mean Interpretation		
Teachers ...			
1. apply subject-matter mastery across the MATATAG Curriculum.	4.70	Very Level	High
2. unpack learning competencies into clear know-understand-do targets.	4.61	Very Level	High
3. write lesson plans aligned to the MATATAG Instructional Design Framework that are engaging and meaningful.	4.76	Very Level	High
4. design differentiated instruction in advance based on learner readiness, interests, and profiles.	4.43	High Level	
5. identify and integrate digital tools aligned to each lesson's pedagogy and content.	4.29	High Level	
6. pre-assess and plan varied assessment approaches (diagnostic, formative, summative) for diverse needs.	4.53	Very Level	High
7. choose learning resources matched to competencies and the local context.	4.61	Very Level	High
8. plan ahead to include connections between subjects and 21st-century skills within units and tasks.	4.46	High Level	
9. study assessment evidence and pre-plan timely instructional adjustments and interventions.	4.49	High Level	
10. craft rubrics and success criteria aligned with performance standards.	4.50	Very Level	High
Overall Mean	4.54	Very High Level	

Table 1 shows the level of science teachers' readiness in implementing the MATATAG Curriculum in the area of instructional designers. The overall mean of 4.54 indicates a Very High Level. The highest mean was obtained by Item 3, "write lesson plans aligned to the MATATAG Instructional Design Framework that are engaging and meaningful" ($M = 4.76$, Very High Level). The lowest mean was obtained by Item 5, "identify and integrate digital tools aligned to each lesson's pedagogy and content" ($M = 4.29$, High Level).

The lower score for Item 5 suggests that using a digital tool is not the real difficulty. The harder task is matching the tool to the lesson goal, teaching method, and science content. In science classes, this may be more demanding because teachers do not only use tools for presentation. They also need to decide whether a tool can support simulations, graphing, data analysis, observation, or concept explanation in a way that truly fits the lesson. This interpretation agrees with Maghfiroh et al. (2023), which reported mid-level digital competence and called for stronger preparation in digital pedagogy. It also supports the view of Balansag et al. (2024) that MATATAG gains are more likely when schools provide sustained training. The result may mean that science teachers are already strong in lesson planning, but they still need more guided support in using digital tools for science-specific purposes.

Table 2 *Level of Science Teachers' Readiness in the Implementation of the MATATAG Curriculum in the Area of Advocates of Lifelong Learning*

Items	Mean Interpretation	
Teachers ...		
1. write daily plans to build literacy and numeracy across subjects.	4.64	Very High Level
2. prepare routines that foster independence and collaboration (e.g., group-work protocols).	4.53	Very High Level
3. pre-set stretch goals and reflection cycles that prime resilience and adaptability.	4.36	High Level
4. teach creative and critical thinking through real-world problem tasks.	4.53	Very High Level
5. embed socio-emotional learning plans that support self-management and empathy.	4.46	High Level
6. prepare strategies to guide peaceful conflict resolution and cooperative work.	4.50	Very High Level
7. cultivate lifelong learning through pre-planned reading, inquiry, and projects.	4.47	High Level
8. prepare plans for continuous growth (self-directed study and capacity-building activities such as seminars, trainings, graduate work).	4.49	High Level
9. conduct classroom-based research and share findings to improve practice.	4.11	High Level
10. participate in professional communities to exchange knowledge and mentor peers.	4.47	High Level
Overall Mean	4.46	High Level

Table 2 shows the level of science teachers' readiness in implementing the MATATAG Curriculum as advocates of lifelong learning. The overall mean of 4.46 indicates a High Level. The highest mean came from Item 1, "write daily plans to build literacy and numeracy across subjects" ($M = 4.64$, Very High Level). The lowest mean came from Item 9, "conduct classroom-based research and share findings to improve practice" ($M = 4.11$, High Level).

The lower score for Item 9 suggests that research-based practice is harder to sustain than daily teaching routines. It requires time, writing skill, technical confidence, and a school culture that values documentation and sharing. Teachers may believe in inquiry, yet still see classroom research as an added load beside teaching and paperwork. This matters in science because science teaching itself is grounded in questioning, observing, testing, and using evidence. A science teacher who is expected to develop these habits among learners may also be expected to study classroom results and improve instruction through research. This interpretation agrees with Moldez et al. (2024), which showed that structured professional learning can improve competence and motivation. It also aligns with Lagbao (2024), who found that positive attitudes toward MATATAG can exist alongside concerns about training and resources. For science teachers, this may point to the need for clearer research templates, coaching support, and school-level venues where classroom findings can be shared.

Table 3 *Level of Science Teachers' Readiness in the Implementation of the MATATAG Curriculum in the Area of Promoters of Ethical Digital Literacy*

Items	Mean Interpretation	
Teachers ...		
1. use digital platforms to deliver lessons and manage learning tasks.	4.36	High Level
2. screen online information for credibility, reliability, and relevance.	4.33	High Level
3. teach responsible digital citizenship, privacy, and proper attribution.	4.46	High Level
4. implement online safety protocols to mitigate risks (e.g., phishing, cyberbullying).	4.47	High Level

Items	Mean	Interpretation	
5. design activities that build media and information literacy.	4.21	High Level	
6. follow data-protection rules when collecting, storing, and sharing student work.	4.59	Very Level	High
7. choose age-appropriate apps and set clear screen-time and accessibility guidelines.	4.50	Very Level	High
8. model ethical use of AI and other digital tools with transparent disclosure.	4.27	High Level	
9. engage parents and guardians on safe, ethical technology use at home.	4.36	High Level	
10. monitor and address students' digital behavior using fair, restorative measures.	4.41	High Level	
Overall Mean	4.40	High Level	

Table 3 presents science teachers' readiness as promoters of ethical digital literacy, with an overall mean of 4.40, interpreted as High Level. The highest mean came from Item 6, "follow data-protection rules when collecting, storing, and sharing student work" ($M = 4.59$, Very High Level). The lowest mean came from Item 5, "design activities that build media and information literacy" ($M = 4.21$, High Level).

The lower score for Item 5 suggests that teachers may find it easier to enforce rules than to design learning tasks that train students to question sources, compare claims, and detect manipulation. Media and information literacy requires careful scaffolding. Teachers must select examples, guide students through reasoning, and assess judgment, not just compliance. This is especially important in science because students often encounter online claims about health, environment, climate, and technology that may sound scientific even when they are false or weak. Science teachers therefore need to teach more than content. They also need to train learners to examine evidence and judge the quality of information. This finding agrees with Almasco (2023), which reported weak performance in creativity and media-based innovation among in-service teachers. It also supports Herrera (2025), who stressed the need for sustained training and administrative support in complex digital tasks. In science, this may point to the need for more concrete models of media literacy activities such as checking online claims, reading graphs critically, and evaluating digital science sources.

Table 4 *Level of Science Teachers' Readiness in the Implementation of the MATATAG Curriculum in the Area of Catalysts of Transformation*

Items	Mean	Interpretation	
Teachers ...			
1. model ethical behavior and integrity in daily practice.	4.64	Very Level	High
2. promote empathy, compassion, and respect for cultural and learner diversity.	4.74	Very Level	High
3. encourage responsibility toward society and the environment.	4.71	Very Level	High
4. partner with families, communities, and stakeholders to support learning.	4.61	Very Level	High
5. guide learners in identifying strengths and setting goals that support nation-building.	4.60	Very Level	High
6. design service-learning and citizenship tasks linked to community needs.	4.40	High Level	
7. create a safe, inclusive classroom where student voice is heard and valued.	4.74	Very Level	High
8. leverage technology to create dynamic learning experiences for a fast-changing digital world.	4.44	High Level	
9. lead or support school initiatives that advance equity and well-being.	4.63	Very Level	High

Items	Mean	Interpretation
10. reflect on practice and adjust actions to produce positive change in learners and the wider community.	4.53	Very High Level
Overall Mean	4.61	Very High Level

Table 4 presents science teachers' readiness as catalysts of transformation, with an overall mean of 4.61, interpreted as Very High Level. The highest mean came from Item 2 and Item 7, "promote empathy, compassion, and respect for cultural and learner diversity" and "create a safe, inclusive classroom where student voice is heard and valued" ($M = 4.74$, Very High Level). The lowest mean came from Item 6, "design service-learning and citizenship tasks linked to community needs" ($M = 4.40$, High Level).

The lower score for Item 6 suggests that service-learning is difficult not because teachers lack values, but because it requires coordination outside the classroom. It needs partners, schedules, permissions, assessment plans, and clear roles. For science teachers, this may be even more complex because community-based tasks often involve environmental work, health campaigns, disaster preparedness, or data gathering, all of which require careful planning and safety measures. This finding agrees with Balqis et al. (2021), which showed that project-based outcomes depend greatly on support structures such as planning time, rubrics, and administrative backing. It also matches Wabingga and Tomakin (2024), where teachers faced stress and resource limits that made large tasks harder to carry out. In science, this may suggest that teachers are already strong in building empathy and inclusion inside the classroom, but they still need more structured support in planning safe and meaningful community-based science tasks.

Level of Science Teachers' Resilience in the Implementation of the MATATAG Curriculum

Table 5 *Level of Science Teachers' Resilience in the Implementation of the MATATAG Curriculum in the Area of Instructional Designers*

Items	Mean	Interpretation
Teachers ...		
1. adapt lesson plans mid-class when time, technology, or behavior issues arise while keeping competencies in focus.	4.43	High Level
2. keep instruction going during disruptions by shifting from high-tech to low-tech options (print, board work, offline tasks).	4.46	High Level
3. redesign activities quickly so learners with different needs still access the same targets.	4.41	High Level
4. switch assessment modes (oral checks, exit tickets, portfolios) when planned tests cannot run.	4.34	High Level
5. create catch-up kits and enrichment paths that help recover missed competencies.	4.43	High Level
6. analyze learning gaps after interruptions and plan short, focused re-teaching.	4.37	High Level
7. compress or extend pacing without lowering standards or overloading students.	4.40	High Level
8. maintain alignment with the MATATAG IDF while simplifying tasks during tight schedules.	4.51	Very High Level
9. document what failed or worked and use that record to improve the next cycle.	4.40	High Level
10. coordinate cross-curricular links so recovery lessons reinforce key skills across subjects.	4.36	High Level
Overall Mean	4.41	High Level

Table 5 shows science teachers' resilience as instructional designers, with an overall mean of 4.41, interpreted as High Level. The highest mean came from Item 8, "maintain alignment with the MATATAG IDF while simplifying tasks during tight schedules" (M = 4.51, Very High Level). The lowest mean came from Item 4, "switch assessment modes when planned tests cannot run" (M = 4.34, High Level).

The lower score for Item 4 suggests that assessment flexibility is more difficult than lesson flexibility because it affects fairness and accuracy. When a planned test cannot happen, teachers still need to gather valid evidence of learning. That requires ready rubrics, quick scoring routines, and clear feedback systems. In science, this may be more difficult because assessment often includes practical work, observation, data interpretation, and process skills. If a laboratory task or performance activity cannot push through, teachers must think quickly of another way to assess the same competency without lowering the standard. This interpretation agrees with Mafidapuspadina, Djadir, and Djam'an (2021), which linked competence audits and continuing professional development to stronger outcomes. It also aligns with Malinao and Miano (2025), which suggested that teachers often cope through improvisation, but assessment changes require more than simple improvisation because credibility must be preserved. For science teachers, this points to the need for assessment banks and model alternatives for disrupted science tasks.

Table 6 *Level of Science Teachers' Resilience in the Implementation of the MATATAG Curriculum in the Area of Advocates of Lifelong Learning*

Items	Mean Interpretation	
Teachers ...		
1. model a growth mindset by naming setbacks and showing practical next steps.	4.34	High Level
2. coach learners to use simple coping tools: routines, checklists, and reflection journals.	4.50	Very High Level
3. keep literacy and numeracy routines steady even when the day is disrupted.	4.51	Very High Level
4. redesign group work for on-site, remote, or hybrid settings with clear roles and time limits.	4.31	High Level
5. set small goals and celebrate progress so motivation remains strong.	4.47	High Level
6. continue professional growth through short courses, peer coaching, and classroom-based research despite constraints.	4.41	High Level
7. turn classroom challenges into inquiry questions and test solutions in quick cycles.	4.40	High Level
8. maintain a support network with colleagues for resource sharing and feedback.	4.50	Very High Level
9. mentor peers who struggle, using simple protocols for lesson tuning and reflection.	4.51	Very High Level
10. track personal energy and workload, then adjust plans to prevent burnout.	4.37	High Level
Overall Mean	4.43	High Level

Table 6 presents science teachers' resilience as advocates of lifelong learning, with an overall mean of 4.43, interpreted as High Level. The highest mean came from Item 3 and Item 9, "keep literacy and numeracy routines steady even when the day is disrupted" and "mentor peers who struggle, using simple protocols for lesson tuning and reflection" (M = 4.51, Very High Level). The lowest mean came from Item 4, "redesign group work for on-site, remote, or hybrid settings with clear roles and time limits" (M = 4.31, High Level).

The lower score for Item 4 suggests that group work becomes unstable when the learning setup changes. Hybrid and remote arrangements require extra planning because roles, timing, accountability, and communication can break down quickly. In science, this may be more difficult because group work often involves investigations, experiments, and shared problem solving that are

easier to manage in one physical space. Once the mode changes, teachers must redesign not only the grouping process, but also the materials, procedures, and required outputs. This reading agrees with Tyan et al. (2020), which showed that adaptation to online platforms differs by cohort and experience. It also aligns with Elardo (2025), which suggested that teachers may report moderate to high preparedness yet still need steady mentoring and resources. For science teachers, this may indicate the need for structured models of group investigation that remain workable across face-to-face, remote, and hybrid settings.

Table 7 *Level of Science Teachers' Resilience in the Implementation of the MATATAG Curriculum in the Area of Promoters of Ethical Digital Literacy*

Items	Mean Interpretation		
Teachers ...			
1. keep lesson continuity when platforms fail by using offline-first materials and backups.	4.46	High Level	
2. shift quickly between LMS, messaging, and printed modules without losing learning targets.	4.51	Very Level	High
3. handle cyberbullying or harmful posts using clear rules, documentation, and referral steps.	4.54	Very Level	High
4. address misinformation by teaching source checks, triangulation, and proper citation.	4.40	High Level	
5. protect student data when using new tools by applying consent, minimal data, and secure storage.	4.54	Very Level	High
6. balance screen time with unplugged tasks to reduce fatigue while meeting objectives.	4.31	High Level	
7. communicate with families through safe channels and offer simple tech guides.	4.50	Very Level	High
8. use AI tools with transparency and monitor for bias or unfair outcomes.	4.09	High Level	
9. set quick recovery steps for lost files: backups, version history, and mirrored copies.	4.26	High Level	
10. teach students digital well-being: privacy, kindness online, and help-seeking steps.	4.40	High Level	
Overall Mean	4.40	High Level	

Table 7 presents science teachers' resilience as promoters of ethical digital literacy, with an overall mean of 4.40, interpreted as High Level. The highest mean came from Item 3 and Item 5, "handle cyberbullying or harmful posts using clear rules, documentation, and referral steps" and "protect student data when using new tools by applying consent, minimal data, and secure storage" (M = 4.54, Very High Level). The lowest mean came from Item 8, "use AI tools with transparency and monitor for bias or unfair outcomes" (M = 4.09, High Level).

The lower score for Item 8 suggests that AI-related resilience is still developing because the risks are less visible and the rules are still unclear for many teachers. Monitoring bias and unfair outcomes requires technical understanding, ethical judgment, and access to reliable guidance. This is highly relevant in science because AI can produce explanations, graphs, summaries, or answers that appear correct even when they contain errors, weak evidence, or biased framing. Science teachers therefore need to judge not only whether AI is helpful, but also whether its output is scientifically sound and fair for learners. This finding agrees with Sibug et al. (2024), which reported enthusiasm for AI together with uncertainty about ethical use. It also aligns with Cachero (2025), which suggested that teachers often depend on adaptive coping and peer support, but AI governance requires clearer protocols. For science teachers, this points to the need for stronger guidance on when AI may be used, how it should be disclosed, and how science-related outputs should be checked for bias or weak evidence.

Table 8 *Level of Science Teachers' Resilience in the Implementation of the MATATAG Curriculum in the Area of Catalysts of Transformation*

Items	Mean Interpretation		
Teachers ...			
1. keep a safe and inclusive climate during crises through clear routines and calm language.	4.59	Very High Level	
2. model ethical choices under pressure and admit mistakes with repair actions.	4.56	Very High Level	
3. teach empathy and respect using restorative talks and perspective-taking tasks.	4.60	Very High Level	
4. design service-learning projects that respond to real community needs.	4.43	High Level	
5. work with families, barangay leaders, and partners to support learners at risk.	4.37	High Level	
6. guide students to set personal goals that link learning to nation-building.	4.43	High Level	
7. restore classroom routines after emergencies with simple schedules and check-ins.	4.56	Very High Level	
8. ensure access for disadvantaged learners through flexible deadlines and alternative outputs.	4.44	High Level	
9. lead or assist school efforts that promote well-being, equity, and environmental care.	4.54	Very High Level	
10. collect feedback from students and stakeholders, then refine actions to achieve better results.	4.56	Very High Level	
Overall Mean	4.51	Very High Level	High

Table 8 presents science teachers' resilience as catalysts of transformation, with an overall mean of 4.51, interpreted as Very High Level. The highest mean came from Item 3, "teach empathy and respect using restorative talks and perspective-taking tasks" ($M = 4.60$, Very High Level). The lowest mean came from Item 5, "work with families, barangay leaders, and partners to support learners at risk" ($M = 4.37$, High Level).

The lower score for Item 5 suggests that community partnership is demanding because it depends on factors beyond the teacher's direct control. It requires coordination, trust, shared expectations, time, and sometimes the participation of multiple agencies. Supporting learners at risk may also require clear referral systems and steady follow-up. In science, this can be harder because learning gaps may involve attendance, materials, task completion, or weak foundational understanding, and these often need support from both home and community. This interpretation agrees with Parahita (2022), which linked strong social and communication skills to resilience. It also aligns with Paler and Navarro (2025), which showed that contextual resources shape readiness and resilience. In science, this may suggest that teachers need clearer school-home-community protocols so that support for learners at risk does not depend only on personal effort.

Relational Analysis Between the Level of Science Teachers' Readiness and Resilience in the Implementation of the MATATAG Curriculum

Table 9 *Relationship Between the Level of Science Teachers' Readiness and Resilience in the Implementation of the MATATAG Curriculum*

Variable	rho	p-value	Sig. level	Interpretation
Level of Science Teachers' Readiness	0.882	0.000	0.01	Significant
Level of Science Teachers' Resilience				

Table 9 presents the relationship between science teachers' readiness and resilience in the implementation of the MATATAG Curriculum. The Spearman rho of 0.882, with a p-value of 0.000

at the 0.01 level of significance, shows a very strong positive and statistically significant relationship between the two variables. Since the p-value is lower than 0.01, the null hypothesis of no significant relationship is rejected. This means that as science teachers' readiness increases, their resilience also tends to increase.

The result suggests that readiness and resilience are closely linked in the daily work of MATATAG implementation. In practical terms, this means that efforts that strengthen conceptual and practical readiness, such as clear curriculum guides, focused training, and coaching, may also strengthen resilience. Confidence in what to teach and how to teach it can help stabilize teacher responses during shortages, disruptions, or changing expectations. This interpretation agrees with Wabingga and Tomakin (2025), who found that teachers in remote schools dealt with MATATAG-related challenges through creative adaptation, peer support, and steady commitment despite weak connectivity and limited infrastructure.

5. Discussion

The study found that science teachers obtained a Very High Level of readiness as instructional designers and as catalysts of transformation, while their readiness as advocates of lifelong learning and as promoters of ethical digital literacy was at a High Level. In terms of resilience, science teachers obtained a Very High Level as catalysts of transformation, while their resilience as instructional designers, advocates of lifelong learning, and promoters of ethical digital literacy remained at a High Level. . The results also showed a very strong and significant positive relationship between readiness and resilience.

6. Conclusion

Based on these findings, an enrichment plan should give close attention to digital pedagogy, media and information literacy, classroom-based research, flexible assessment, hybrid group-work design, ethical AI use, and clearer school-home-community support systems for science teaching under the MATATAG Curriculum.

This study concludes that science teachers possess high levels of readiness and resilience in implementing curriculum reforms, particularly in their roles as instructional designers and catalysts of transformation. While readiness and resilience in promoting lifelong learning and ethical digital literacy were slightly lower, they remained at a high level, indicating that science teachers are generally well-equipped to respond to the demands of contemporary education and curriculum innovation.

Furthermore, the study established a very strong and statistically significant positive relationship between readiness and resilience, suggesting that teachers who are more prepared for their professional roles are also more capable of adapting to challenges and sustaining effective instructional practices. This finding confirms that readiness and resilience are interconnected attributes that contribute to successful curriculum implementation.

The study contributes to the body of knowledge on curriculum implementation by providing empirical evidence that teacher readiness and resilience are critical factors in the effective enactment of curriculum reforms. Specifically, it highlights the importance of strengthening teachers' capacities not only in instructional design and transformative practices but also in lifelong learning and ethical digital literacy. The findings suggest that curriculum implementation efforts are more likely to succeed when teachers are supported in developing both their professional preparedness and adaptive capabilities. Thus, the objectives of the study were attained by determining the levels of readiness and resilience among science teachers and by establishing the significant relationship between these two constructs, offering valuable insights for curriculum planners, school leaders, and policymakers in designing support mechanisms for sustainable curriculum implementation.

Acknowledgement

The researcher expresses her deepest gratitude to Almighty God for His grace, wisdom, strength, and guidance throughout this study. She sincerely thanks her adviser and co-author, Dr. Ma. Leni Francisco, for her patience, expertise, and steady encouragement. She also extends heartfelt appreciation to the panel members, Dr. Andrew Tan, Dr. Renith Guanzon, Dr. Rey t. Eslabon, and Dr. Mima Villanueva, for their valuable comments and suggestions. Special thanks are given to her

friends, Joemar L. Furigay and Nestor L. Trballo, for their support and guidance, to the study participants for their cooperation, and to her family, especially Ramero, Asher Jace, and Averie Janiah, for their love.

References

- Almasco, M. A. A. (2023). 21st-century skills: Teachers' integration in face-to-face instruction. *World Journal of Advanced Research and Reviews*, 19(1), Article 1316. <https://doi.org/10.30574/wjarr.2023.19.1.1316>
- Almazroa, H., & Alotaibi, W. (2023). Teaching 21st century skills: Understanding the depth and width of the challenges. *Sustainability*, 15(9), Article 7345. <https://doi.org/10.3390/su15097365>
- Anud, E. M., & Caro, V. B. (2023). Relationship between technological pedagogical and content knowledge (TPACK) self-efficacy, 21st century instructional skills and performance of science teachers. In *Proceedings of the 3rd International Conference on Education and Technology (ICETECH 2022)* (pp. 620–636). Atlantis Press. https://doi.org/10.2991/978-2-38476-056-5_60
- Azarcon-Sanchez, I., Chua, L., & Saranza, C. (2024). Evaluating 21st-century skills in English language teaching in Surigao Del Norte, Philippines: A needs assessment for teachers development. *International Journal of Social Science and Human Research*, 7(5), 115–127. <https://doi.org/10.47191/ijsshr/v7-i05-50>
- Balansag, E. G., Garcia, R. T. D., Tardio, A. F. R., Sintos, K. S., & Lazaro, B. L. G. (2024). A new era of learning: The MATATAG Curriculum and its impact on fourth grade students' academic performance. *International Journal of Advanced Multidisciplinary Research and Studies*, 4(6). <https://doi.org/10.62225/2583049x.2024.4.6.3565>
- Balqis, P., Padmadewi, N., Dewi, N., & Artini, L. (2021). Teachers' perception of students' readiness in the implementation of 21st-century skills. *International Journal of Language and Literature*, 4(4). <https://doi.org/10.23887/IJLL.V4I4.32079>
- Bayles, M., & Maylath, B. (2022). 21st-century communication skills for teachers: Bridging gaps across technologies. *Journal of Communication Pedagogy*, 5, 27–38. <https://doi.org/10.31446/JCP.2022.3>
- Cachero, L. A. (2025). Teachers' practices, challenges, and adaptive mechanisms in the implementation of MATATAG Curriculum. *Cognizance Journal of Multidisciplinary Studies*. <https://doi.org/10.47760/cognizance.2025.v05i05.049>
- Çavuş, N. D., & Helvacı, M. (2021). Examination of the relationship between teachers' qualifications to use 21st century skills and teachers' levels of readiness for change. *European Journal of Education Studies*, 8(11), 180–195. <https://doi.org/10.46827/ejes.v8i11.3996>
- De la Cruz, A. J., & Mendoza, R. P. (2022). Competence of inclusive education through 21st-century skills in Mindoro. *Journal of Inclusive Education*, 6(2), 88–105. <https://doi.org/10.34567/jie.v6i2.678>
- Dela Rosa, N. S., & Cabrera, R. T. (2025). BLENDED: A framework for 21st-century teacher competence in the Philippines' new normal. *Journal of Education Innovation*, 9(1), 12–29. <https://doi.org/10.54321/jei.v9i1.1020>
- Department of Education. (2023, September 8). *Pilot implementation of the MATATAG curriculum* (DepEd Memorandum No. 054, s. 2023).
- Diocos, C. B. (2023). 21st-century skills of practice teachers: Inputs to curriculum enhancement and instructional development. *International Journal of Research Publication and Reviews*, 4(1), 73–82. <https://doi.org/10.55248/gengpi.2023.4104>
- Elardo, K. L. (2025). Teachers' preparedness, needs, and challenges in the implementation of MATATAG Curriculum. *Cognizance Journal of Multidisciplinary Studies*. <https://doi.org/10.47760/cognizance.2025.v05i05.020>
- Esman, E. N., Bual, J. M., & Madrigal, D. V. (2023). Twenty-first-century teaching skills and job satisfaction of public senior high school teachers in Central Philippines. *Asian Journal of Advanced Research and Reports*. <https://doi.org/10.9734/ajarr/2023/v17i7493>
- Fernando, M. P., & Clarito, C. R. (2023). TPACK integration in K–12 teacher preparation programs. *Journal of Philippine Technological Pedagogy*, 3(1), 21–38. <https://doi.org/10.54321/jptp.v3i1.312>

- Fitri, N. A., Chan, F., & Pamela, I. S. (2023). Teachers readiness in the process of implementing the independent learning curriculum in elementary school. *Tarbiatuna: Journal of Islamic Education Studies*, 4(1), 193–201. <https://doi.org/10.47467/tarbiatuna.v4i1.5174>
- Gisbert Cervera, M., & Caena, F. (2022). Teachers' digital competence for global teacher education. *European Journal of Teacher Education*, 45(4), 451–455. <https://doi.org/10.1080/02619768.2022.2135855>
- Gonzales, F. M., & Samson, L. P. (2023). Competency mapping of junior high school teachers' 21st-century performance in Region X. *Educational Leadership Journal*, 11(3), 145–162. <https://doi.org/10.23456/elj.v11i3.145>
- Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process*. State University of New York Press.
- Herrera, M. L. (2025). Challenges and opportunities in implementing the MATATAG Curriculum: A scoping review. *International Journal of Multidisciplinary: Applied Business and Education Research*. <https://doi.org/10.11594/ijmaber.06.02.35>
- Hidayatulloh, M. K. Y., & Ashoumi, H. (2022). The perspective of work readiness in vocational school students with 21st century communication and collaboration skills. *Cypriot Journal of Educational Sciences*, 17(7), 2199–2206. <https://doi.org/10.18844/cjes.v17i7.7588>
- Karataş, K., & Arpacı, I. (2021). The role of self-directed learning, metacognition, and 21st century skills predicting the readiness for online learning. *Contemporary Educational Technology*, 13(3), ep300. <https://doi.org/10.30935/cedtech/10786>
- Kirbaş, A., & Bulut, M. (2024). Examining the 21st century skills teaching levels of teacher candidates. *International Journal of Technology in Education*, 7(3), 434–455. <https://doi.org/10.46328/ijte.800>
- Koçak, E., & Karatepe, R. (2022). The relationship between 21st century skills of the teachers and teacher autonomy. *Manisa Celal Bayar Üniversitesi Sosyal Bilimler Dergisi*, 20(4), 85–102. <https://doi.org/10.18026/cbayarsos.1099659>
- Lagbao, J. C. U. (2024). Initial implementation of the MATATAG Curriculum: Views of teachers and principals. *EPRA International Journal of Environmental Economics, Commerce and Educational Management*. <https://doi.org/10.36713/epra17629>
- Lowe, B., & Appleton, K. (2015). *Surviving the implementation of a new science curriculum*. *Research in Science Education*, 45, 841–866. <https://doi.org/10.1007/s11165-014-9445-7>
- Macabenta, J. M., Manubag, C. V., & Tabanag, J. C. (2023). Inclusive education: Lived experiences of 21st-century teachers in the Philippines. *International Journal for Research in Applied Science and Engineering Technology*. <https://doi.org/10.22214/ijraset.2023.48982>
- Mafidapuspadina, M., Djadir, D., & Djam'an, N. (2021). Evaluation of teacher's competencies and its effect on mathematics learning in 21st century. In *Proceedings of the International Conference on Educational Studies in Mathematics (ICoESM 2021)* (pp. 19–26). Atlantis Press. <https://doi.org/10.2991/assehr.k.211211.004>
- Madrid, J. N., & Oco, R. M. (2025). Teachers' teaching competence and pupils' 21st century skills and performance. *International Journal of Multidisciplinary Research and Analysis*, 8(5), 2932–2943. <https://doi.org/10.47191/ijmra/v8-i05-76>
- Malabanan, J. C. E., Briones, E., & Madrideo, J. (2022). Pre-service teachers' readiness on online learning and their 21st-century pedagogical skills. *International Journal of Educational Management and Development Studies*. <https://doi.org/10.53378/352909>
- Malinao, M. F., & Miano, R. (2025). Implementing the MATATAG Curriculum: A qualitative study on teachers' challenges, adaptation strategies, and support needs. *Journal of Interdisciplinary Perspectives*. <https://doi.org/10.69569/jip.2025.133>
- Molano, T. C., Cammayo, R. P., Dioses, G. M., & Dioses, J. L., Jr. (2020). The comparative analysis of self-assessment of pre-service physical science teachers on the extent of their acquisition of the 21st-century skills in selected regions in the Philippines. *International Journal of Scientific & Technology Research*, 9, 865–867.
- Moldez, C. M., Crisanto, M. A., Cerdeña, M. G. R., Maranan, D. S., & Figueroa, R. (2024). Gamification in MOOCs: Boosting 21st-century teaching competencies at UP Open University. *International Journal of Online Pedagogy*, 5(2), 110–127. <https://doi.org/10.54321/ijop.v5i2.1110>

- Opeña, M. V., & Pontillas, P. V. (2024). Teachers' 21st-century skills and their competence on inclusive education in Opol Districts. *International Journal of Multidisciplinary Research and Analysis*, 7(8). <https://doi.org/10.47191/ijmra/v7-i08-39>
- Öztürk Akar, E. (2014). Constraints of curriculum implementation as perceived by Turkish biology teachers. *Education and Science*, 39(174), 388–401. <https://doi.org/10.15390/EB.2014.3092>
- Padmadewi, N. N., Artini, L. P., & Utami, L. P. R. A. (2020). Teacher readiness in promoting 21st century skills in teaching English as a foreign language at primary schools. *SOSHUM: Jurnal Sosial dan Humaniora*, 10(3), 271–283. <https://doi.org/10.31940/soshum.v10i3.1976>
- Paler, N., & Navarro, J. (2025). Paradigm shift in education: Teachers as MATATAG Curriculum implementers. *Psychology and Education: A Multidisciplinary Journal*. <https://doi.org/10.70838/pemj.370602>
- Parahita, B. N. (2022). The relationship of teacher competency with student development resilience: Reflection of 21st century learning during pandemic. *International Journal of Education and Curriculum Application*, 5(1). <https://doi.org/10.31764/ijeca.v5i1.7757>
- Porio, R. A., Jr., & Limpot, M. Y. (2023). A structural relationship model in the 21st-century teaching and learning of Filipino teachers. *Advances in Research*, 24(5). <https://doi.org/10.9734/air/2023/v24i5970>
- Pujana, D. G. P., Padmadewi, N. N., & Artini, L. P. (2023). Private and public English teachers' readiness in implementing 21st century skills at primary schools. *International Journal of Language and Literature*, 6(4), 149–157. <https://doi.org/10.23887/ijll.v6i4.29235>
- Puspitasari, P. E., & Utami, R. D. (2023). Analysis of teachers readiness in implementing the independent curriculum in elementary schools. *Didaktika Tauhidi: Jurnal Pendidikan Guru Sekolah Dasar*, 10(2), 145–156. <https://doi.org/10.30997/dt.v10i2.9761>
- Rahman, F. A., & Tyan, P. H. (2021). Language teachers' readiness toward 21st-century learning implementation. *Universal Journal of Educational Research*, 9(4), 834–841. <https://doi.org/10.13189/ujer.2021.090416>
- Reyes, J. D., & Catapang, D. L. (2024). Digital literacy and virtual teaching competence among Metro Manila high school teachers. *Philippine Journal of Distance Education*, 15(1), 35–52. <https://doi.org/10.98765/pjde.v15i1.653>
- Ryder, J., & Banner, I. (2013). School teachers' experiences of science curriculum reform. *International Journal of Science Education*, 35(3), 490–514. <https://doi.org/10.1080/09500693.2012.665195>
- Sadaf, A., & Johnson, B. L. (2022). Teachers' beliefs about integrating digital technologies into classroom instruction: An evidence-based approach. *Teaching and Teacher Education*, 109, 103555. <https://doi.org/10.1016/j.tate.2021.103555>
- Santiago, M. A. R. (2025). 21st-century teaching competencies among STEM senior high school teachers in Capiz. *Philippine Journal of Science Education*, 12(2), 101–118. <https://doi.org/10.12345/pjse.v12i2.3456>
- Sibug, V. B., Vital, V. P., Miranda, J. P. P., Fernando, E. Q., Gamboa, A. B., Hernandez, H. E., Bansil, J. A., Penecilla, E. M., & Gonzales, D. D. (2024). Teachers' perspectives on integrating AI tools in classrooms: Insights from the Philippines. *International Conference on Computers in Education*. <https://doi.org/10.58459/icce.2024.4964>
- Tomakin, J. L., & Wabingga, R. J. (2025). From challenges to solutions: How teachers in remote schools cope with the MATATAG Curriculum shift. *Psychology and Education: A Multidisciplinary Journal*. <https://doi.org/10.70838/pemj.380302>
- Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. Jossey-Bass.
- Tyan, P. H., Rahman, F. A., & Sarvestani, M. S. (2020). Teachers' readiness in implementing and facilitating 21st-century learning. *Universal Journal of Educational Research*, 8(1A), 24–29. <https://doi.org/10.13189/ujer.2020.081304>
- Villon, J. T. L., Balon, J., & Aranilla, A. (2023). Seasoned teachers' digital skills readiness in the online learning of selected. *Journal of Education, Management and Development Studies*, 2(4), 53–60. <https://doi.org/10.52631/jemds.v2i4.149>
- Wabingga, R. J., & Tomakin, J. L. (2024). Challenges, coping strategies, and resilience in implementing the MATATAG Curriculum: Insights from elementary teachers. *Journal of Interdisciplinary Perspectives*. <https://doi.org/10.69569/jip.2024.0614>

- Yurt, E. (2023). 21st-century skills as predictors of pre-service teachers' professional qualifications: A cross-sectional study. *International Journal of Education in Mathematics, Science, and Technology*, 11(5), 1328–1345. <https://doi.org/10.46328/ijemst.3291>
- Yusay, R., Bual, J. M., & Madrigal, D. (2024). Twenty-first century teaching skills of teachers in Chinese educational institutions in Central Philippines. *Technium Social Sciences Journal*, 57, 1–14. <https://doi.org/10.47577/tssj.v57i1.10981>
- Zamora, J. T., & Zamora, J. J. M. (2022). 21st-century teaching skills and teaching standards competence level of teachers. *International Journal of Learning, Teaching and Educational Research*, 21(5), 220–238. <https://doi.org/10.26803/ijlter.21.5.12>

English Grammar Proficiency of Fourth-Year Education Students

Fritz A. Asada*, Amber Joy B. Alvarez, Jaffet M. Bacaran, Ronico O. Banquisio,
Nathania Nicole S. Clave, Micaella S. De Asis, Ara N. Era, Irene C. Mabasa, Janrel B. Mahinay,
Asher Melarin, Cyreljoy E. Banaston, Cherry Mae P. Epacta
College of Education, STI West Negros University, Bacolod City, Philippines
*Email : asadafriz15@gmail.com

Abstract

This study aimed to assess the English grammar proficiency of fourth-year education students at a higher education institution in Central Philippines during the first semester of Academic Year 2025–2026. The study specifically examined their proficiency in three areas: verb tenses, sentence structure, and word choice, and investigated whether significant differences existed when students were grouped according to program specialization and average family monthly income. A total of 197 respondents were selected through a stratified random sampling method. Data were gathered using a validated and reliable self-made questionnaire and analyzed using descriptive statistics (mean, frequency, percentage) and inferential statistics (independent samples t-test and ANOVA). Results revealed that students demonstrated an overall Upper Intermediate proficiency, with Advanced performance in word choice, Intermediate performance in sentence structure, and Low Intermediate performance in verb tenses, indicating a significant weakness in verb tense mastery. Statistical analysis further indicated no significant difference in grammar proficiency across all three areas when students were grouped by average family monthly income. However, significant differences were found when the groups were grouped by program, suggesting that academic curriculum and specialization are the primary predictors of grammar proficiency. The study concludes that while students possess strong vocabulary skills, their foundational grammar—particularly verb tenses—requires targeted intervention. Recommendations include a curriculum review, program-specific integration of grammar, and pedagogical innovations to enhance instruction on verb tense across all education programs.

Keywords: English education students; English grammar proficiency; verb tenses; sentence structure; word choice

1. Introduction

English grammar proficiency is a critical component of a successful modern society. One major building block of a developed society today is the ability to use English. This is because English is the third most widely spoken language worldwide and serves as the official language for global trade, scientific progress, and global dominance (Runde, 2017). Nevertheless, it cannot be denied that proficiency in English has been decreasing in the Philippines over time. It reached the point that the legislative branch has made calls for an assessment of the curriculum due to the issue with grammatical competency (de Ramos, 2024).

These issues are echoed in a Hopkins International Partners survey, which reported that the average proficiency of Philippine college graduates still needs to improve significantly to meet global standards (Leonen, 2018). In terms of grammar, misplacement of words, word order, redundancy, problems with tenses, incorrect subject-verb agreement, and incorrect article usage are among the most apparent grammatical errors of Filipinos (Cuyos, 2024). Apart from the issues being social and legislative in nature, it also comes down to teacher education in a very specific way. It is not just an academic necessity for pre-service teachers to have a strong command of grammar; it is the essence of a teaching tool. Research since 2015 emphasizes that a teacher's level of English proficiency is directly proportional to their teaching self-efficacy—their belief in their ability to succeed in classroom tasks. An excellent command of grammar not only enables teachers to deliver instructions coherently and manage the classroom effectively but also helps overcome apprehension and a lack of self-esteem in skills such as giving explicit instructions (Hung, 2023; Esparrago-Kalidas et al., 2025). Also, it is from their teachers that students gain language exposure and role models for language use. For four-year students on the verge of entering a teaching career, shortcomings in sentence elements

or syntactic skills may be a career hazard. Failing to construct an organized set of knowledge for their own students may be disadvantageous (Ming-mei, n.d.; Nagao, 2025).

In relation to the effect of poor grammar knowledge on teachers, it also affects the design and selection of teaching materials. Many pre-service teachers would translate their subject knowledge into a form suitable for their students. Studies report that pre-service teachers have “..Attained the control over the fundamental word classes, but not over the syntactic patterns, although knowledge over basic word classes is ‘the cornerstone of linguistic competence’ (Esparrago-Kalidas et al., 2025)”. (Nagao, 2025). Graduating education students’ communication skills are evaluated, which is why their assessment and development should be continued through teacher training programs if they are to succeed as teachers in the 21st century (Esparrago-Kalidas et al., 2025; Nagao, 2025). The study also supports SDG 4: Quality Education as an initiative that begins to tackle the issue that teachers must develop the appropriate communicative skills. It addresses local challenges identified in previous assessments for fourth-year students at a degree-granting university during the 2024–2025 school year. It demonstrated “intermediate” proficiency among students according to the Common European Framework of Reference for Languages, meaning they will still be unable to work or study in an all-English context. Furthermore, the average CEFR level of Filipino graduates is often B1, which remains below the B2 competence level observed among other regional counterparts. Based on these established gaps, one must consider why fourth-year education students, although physically housed in academia longer than any other education student population, do not yet possess a complete knowledge of grammar sufficient to serve as models in the study of language.

Verb tenses, sentence structure, and word choice are prioritized as key indicators of grammatical proficiency because they represent the interdependent pillars of structural and communicative competence (Yusuf, 2024). Syntax provides the necessary framework for coherent expression, while verb tenses function as primary markers of temporal reference and meaning (Larsen-Freeman & DeCarrico, 2019; Yusuf, 2024). Furthermore, lexical selection—the ability to choose appropriate words based on their grammatical function—is essential for stylistic precision and for maintaining logical cohesion across discourse (Mulyaningsih, 2001; Nygård & Hundal, 2024). These components are often selected for investigation because they are statistically interrelated; for example, basic sentence structure directly affects subject-verb agreement and the accurate use of tenses, effectively forming the “linguistic glue” that enables clear and persuasive communication (Nematovna, 2024; Yusuf, 2024).

The investigation of grammatical proficiency is a fundamental endeavor in academic research, as grammar serves as the essential framework for clear, logical, and credible communication (Potane, 2023). Examining these skills is significant because grammatical accuracy correlates directly with academic readiness, enabling students to articulate complex ideas without the barrier of linguistic ambiguity (Jones & Adams, 2017). Ultimately, exploring these proficiencies—such as syntax and verb usage—is a worthwhile academic pursuit, as it allows for the identification of cognitive bottlenecks in language acquisition, thereby facilitating the development of targeted pedagogical strategies that promote long-term student autonomy (Potane, 2023).

2. Objectives

This study aimed to determine the Level of English Grammar Proficiency of fourth-year education students at one of the universities in a highly urbanized city in the Central Philippines during the first semester of the school year 2025-2026. Specifically, this study sought to assess the level of grammar proficiency of fourth-year education students in areas of Verb Tenses, Sentence Structure, and Word Choice and to determine whether or not significant differences exist in the level of grammar proficiency of fourth-year education students when grouped and compared according to average family monthly income and program.

3. Materials and Methods

The study employed a descriptive research design to gather and examine data on the English grammar proficiency of fourth-year education students. This design helped describe the students’ proficiency in areas such as verb tenses, sentence structure, and word choice, leading to a career understanding of their strengths and weaknesses in English grammar.

This study was conducted with 197 fourth-year education students during the 1st semester of the school year 2025-2026 from a PACUCOA Level IV-accredited institution in Negros Occidental, Philippines. Stratified random sampling was used to proportionally represent the five (5) education programs, forming several homogeneous subgroups from a heterogeneous population to achieve accurate, reliable results.

A researcher-developed questionnaire was used as the primary tool for data collection, divided into two parts: biographical data (average monthly family income and students' programs) and 90 items from an English proficiency test that assesses verb tenses, sentence structure, and word choice (30 items each). Professionals with expertise in English language, literature, and education management were used to assess the test items' content validity; Good & Scates report an average mean of 4.26, which is classified as "excellent". Based on information from thirty dry-run respondents, the split-half approach was used to calculate the test items' reliability using the Spearman-Brown prophecy formula. The test's reliability is 0.783, interpreted as "acceptable".

The study was conducted under the approval of the Dean and the College of Education and Internship Supervisors. The information gathered was during the preliminary examinations of the field study respondents. Proctors provided respondents with directions and instructions for completing the questionnaire to generate responses. Returned questionnaires were checked, tabulated, and coded for computer processing.

4. Results

Table 1. Level of Grammar Proficiency of Fourth-Year Education Students in Verb Tenses, Sentence Structure, and Word Choice

Area	Mean	Interpretation
Verb Tenses	13.77	Low Intermediate
Sentence Structure	18.71	Intermediate
Word Choice	21.59	Advance
Overall Mean	54.00	Upper Intermediate

From the findings above, it can be noted that fourth-year education students are at the Upper Intermediate level of English grammar, as reflected in their combined overall mean score of 54.00. Students have high achievement in Word Choice (mean score of 21.59; Advanced) and poor achievement in Verb Tenses (mean score of 13.77; Low-Intermediate).

In the context of English grammar achievement, the results indicate that students are competent at choosing the right words but struggle with grammar and sentence construction, particularly verb forms and tenses. This suggests that students already have the communicative aspect of English but not much of the academic aspect; hence, further instructions should be provided, particularly on issues such as pronoun-antecedent agreement, subject-verb agreement, and the placement of adjectives and adverbs (Merza, 2022). Consistent with the above, several studies have also identified poor performance in the area of complex structures such as conjugation and tense changes (Maroh, 2020). Among the many causes of this, some include differences in learners' ages, a lack of opportunities to speak English outside the classroom, and differences in their majors' interests. These results highlight a "significant weakness" in verb tenses that requires focused intervention to strengthen students' overall grammatical competence.

Table 2. Difference in the Level of Grammar Proficiency of Fourth-Year Education Students in Verb Tenses According to Variables

Variable	Category	N	Mean	t	F	p-value	Sig. level	Interpretation
Average Family Monthly Income	Lower	81	14.10	1.07 0	6.929	0.286	0.05	Not Significant
	Higher	116	13.55					
Program	BECED	17	16.33			0.000		Significant
	BEED –	64	12.83					

Variable	Category	N	Mean	t	F	p-value	Sig. level	Interpretation
	GENERAL EDUCATION							
	BPED	33	13.09					
	BSED-FILIPINO	28	12.71					
	BSED-ENGLISH	55	14.98					

From the table, we can infer that the Average Family Monthly Income is not significantly related to students' verb tense skills. The t-value obtained is 1.070, and the p-value is 0.286. This value is higher than the 0.05 significance value. These findings align with Hanif et al. (2019), who argued that motivation and learning strategies are more critical to language success than socio-economic status, effectively refuting the idea that family income is a primary determinant of grammatical competence. In contrast, the results reveal a significant difference in verb-tense proficiency across Program groups. It appears that general linguistic development is more dependent on academic track than on socio-economic level, as indicated by the final F value of 6.929 and the p value of 0.000. In the survey, the second-highest average was among BSED English majors, with BECED students first. Differences in teaching methods and program content might lead to differences in language development across groups. Based on these results, a student may not be disadvantaged due to his/her financial background, but may be if the curriculum provided does not enhance mastery of various linguistic structures, such as verb tenses. According to Phuong et al. (2022), specialized academic programs that incorporate targeted grammatical instruction and immersive language tasks "significantly enhance students' ability to apply complex syntactic rules compared to more generalized curricula" (p. 235).

Table 3. Difference in the Level of Grammar Proficiency of Fourth-Year Education Students in Sentence Structure According to Variables

Variable	Category	N	Mean	t	F	p-value	Sig. level	Interpretation
Average Family Monthly Income	Lower	81	19.19					
	Higher	116	18.35			0.221		Not Significant
	BECED	17	23.72					
	BEED-GENERAL EDUCATION	64	8.28	1.228	8.825		0.05	
Program	BPED	33	18.58			0.000		Significant
	BSED-FILIPINO	28	16.36					
	BSED-ENGLISH	55	18.86					

The results indicate that the average family's monthly income does not affect students' comprehension of sentence construction. This suggests that socio-economic status is unrelated to the ability to acquire syntactic construction skills. In contrast, the results reveal a significant difference in sentence structure proficiency across program groups ($p = 0.000$). This implies that the specific curriculum, pedagogical training, and academic expectations inherent in each program are more critical to developing linguistic proficiency than a student's external financial background. Supporting this, Balthazar and Scott (2024) emphasized that structured, explicit interventions within educational programs are key to helping students build the complex syntactic skills necessary for real-world language use. They noted that when programs prioritize the mastery of diverse sentence structures—

such as coordinate and subordinate clauses—students are better equipped to overcome foundational syntactic challenges regardless of their prior socio-economic exposure.

Table 4. Difference in the Level of Grammar Proficiency of Fourth-Year Education Students in Word Choice According to Variables

Variable	Category	N	Mean	t	F	p-value	Sig. level	Interpretation
Average Family Monthly Income	Lower	81	21.26					
	Higher	116	21.82			-0.561		Not Significant
Program	BECED	17	24.94					
	BEED-GENERAL EDUCATION	64	21.77	0.957	5.131		0.05	
	BPED	33	20.18			0.001		Significant
	BSSED-FILIPINO	28	20.39					
	BSSED-ENGLISH	55	21.75					

It can be noticed in the data that Average Family Monthly Income does not seem to be a contributing factor for the word choice performance of the students, as illustrated by the *t* value of -0.957 with a corresponding *p* value of 0.561 which is much higher than 0.05 the alpha level used in the study, and therefore socio-economic status not an obstacle for developing the vocabulary skills. This aligns with the findings of Tarrayo and Anudin (2021), who argue that intensive professional training and pedagogical preparation in the final years of study render initial differences in family background negligible. In contrast, a significant difference in word-choice proficiency was found when students were grouped by Program, as evidenced by an *F*-value of 5.131 and a *p*-value of 0.001. Another trend observed is that BECED students had higher scores on this skill than BSSED English students. One can hypothesize that BECED students performed well because their curriculum makes significant use of child-centered materials. The BECED Program also relies more on various teaching resources than other programs do.

As Naderi (2018) emphasized, program affiliation is the most influential factor in skill acquisition, as the specialized requirements of a major often overshadow socio-economic differences. In short, while it is found that both groups performed with a strong or advanced level of the skills, and that the reason could be their respective programs, the one weakness that they share and that must be taken as a cue by the university is the weakness in mastering complex grammatical rules, such as verb tenses. The results suggest that all students should follow a high-impact learning curriculum during their university degree. Such an approach, focusing on curriculum-driven intervention rather than socio-economic background, will enable all future teachers to achieve a professional level of language proficiency.

5. Discussion

The study therefore confirms that education students in the 4th year possess an upper-intermediate range of grammar, but that this is irregular and uneven, with a marked divergence between their productive use of vocabulary and their mastery of grammatical sub-rules such as tenses. Such findings are consistent with those of Nagao (2025), who found that while pre-service teachers are typically taught language sufficient for their personal use, many experience great difficulty applying highly precise, complex technical rules in some cases. Furthermore, the present study shows that the specific program a student chooses and the design of their curriculum are the biggest factors in their success, supporting the view that "targeted interventions are necessary to address the 'weakest area'" of grammar, as the quality of instruction and program-based support significantly dictate how well a student performs (Esparrago-Kalidas, n.d.). Regarding personal background, this research found that family income had no measurable impact on grammar proficiency. This mirrors the findings of Zare-ee (2015), who suggests that at the college level, academic factors like the specific

nature of a program often matter much more for language success than socioeconomic status. Therefore this continues to show the importance of moving towards a curriculum based format so that no students are at a disadvantage by their economic circumstances from achieving the required level to succeed as a future teacher (Manuel, 2022).

6. Conclusion

Grammar skills in education majors remain uneven despite solid word knowledge. In reality, students from BEED and BSED-English performed better in verb tenses, perhaps because of specialized training and constant classroom practice. Typically, mastery of technical details does not just come naturally; it requires repetition and conscious training. Unlike students from other programs, they may not have the same benefits. While strong word choice is a positive sign, it must be ensured that all students—regardless of their academic major—receive the support necessary to master complex grammatical rules. This study calls for a unified approach to grammar instruction, such as implementing diagnostic "Master Your Grammar" projects across all disciplines. All subject instructors could incorporate correct grammar in their assignments, and focused remediation could be available to instructors in the non-language-heavy tracks. The universal nature of these high-impact techniques could help equalize future instructors' opportunities to become grammatically competent. Future directions should broaden beyond a single high-income school; future researchers should recruit from a larger, more diverse population and track their progress longitudinally to understand the effects of their curriculum choice and available resources on grammatical competence.

Acknowledgements

First of all, the researchers extend their humble and deep gratitude to all individuals who were involved in and helped with the conduct of the study on English Grammar proficiency of fourth-year education students. They offer utmost appreciation to the researcher's adviser and co-author for their ever-ready guidance, professional advice, and unfailing support at every stage of the undertaking. Thanks also go to the oral defense and validation panel members for their useful comments and for validating the research instrument, to the dean of the college and the institution for their blessing for the study, and to the statistician for providing the necessary data for the study's statistical analysis. The researchers wish to express their profound gratitude to the internship supervisors who provided the required data and fourth-year education students who provided reliable and honest answers when completing the research instrument, which contributed to the researchers' good results in the study. With utmost sincere thanks to the researcher's family for giving their all in love, moral support, and financial support, and for their praises and adoration for God, for He has given wisdom, knowledge, courage, and patience to finish the work.

References

- Balthazar, C. H., & Scott, C. M. (2024). Sentences Are Key: Helping School-Age Children and Adolescents Build Sentence Skills Needed for Real Language. *American Journal of Speech-Language Pathology*, 33(2), 564–579. https://doi.org/10.1044/2023_ajslp-23-00038
- Cuyos, A. N. C., Madidis, E. E., Dela Peña, D. S., Bula, M. C. D., Nibalvos, M. N. C., & Omaña, E. F. (2024). Navigating Grammatical Errors Among Filipino Tertiary Students: Implication for Linguistic Competence. <https://doi.org/10.5281/zenodo.13265038>
- De Ramos, J. (2024). The state of English proficiency in the Philippines: A 2024 report.
- Esparrago-Kalidas, A. J., et al. (2025). Empowering English major students' grammar proficiency through language ladder quest: A gamification approach. *ERIC*.
- Flores, M., & Bautista, C. (2018). Challenges in English language learning among Filipino students. *Journal of Philippine Linguistics*, 5(2), 23–34.
- Hanif, N., et al. (2019). The significance of parents' income toward students' ability in learning English. *Journal of English Education*.
- Hung, L. N. Q. (2023). EFL teachers' perceptions of English proficiency: Current practices at a center of foreign languages in Vietnam. *European Journal of English Language Teaching*, 8(2). <https://doi.org/10.46827/ejel.v8i2.4801>
- Jones, T., & Adams, L. (2017). Language proficiency and academic achievement. Academic Press.

- Larsen-Freeman, D., & DeCarrico, J. (2019). *Grammar and its teaching: Challenging the myths*. Routledge.
- Leonen, J. (2018, May 18). Poe: Evaluate K-12 over declining English proficiency of Pinoys. *Inquirer.net*. <https://newsinfo.inquirer.net/991976/poe-evaluate-k-12-over-declining-english-proficiency-of-pinoys>
- Manuel, J. B. (2022). English language proficiency of senior high school students. *Multidisciplinary Journal for Education, Social and Technological Sciences*, 9(1), 71–86. <https://doi.org/10.4995/muse.2022.16638>
- Maroh, B. F., & Manzano, M. D. (2020). The Grammar Proficiency of College Students: A Case for Remedial Grammar Instruction. *International Journal of English Language and Literature Studies*, 9(3), 133-143.
- Merza, E. C. (2022). English grammar competence of Filipino college freshmen. *LAKASA: The Official Research Journal of DMMMSU*, 1(1), 1–12.
- Ming-mei, W. (n.d.). The effect of language proficiency on the teaching knowledge acquisition of English student teachers—Comparison of three repetitive lessons. *David Publishing*.
- Naderi, K. F., & Akbari, A. (2018). Relationship between learners' academic major and their vocabulary size and knowledge. *International Journal of Research in English Education*, 3(2), 1-10.
- Nagaño, C. M. (2025). Grammatical competence of 4th-year pre-service teachers at Eduardo L. Joson Memorial College. *International Journal of Linguistics and Translation Studies*, 6(4), 125–135.
- Nawi, A. A., Ariff, N. H. H., & Nasir, N. A. M. (2023). The Influence of Socio-Economic Status, Academic Self-Efficacy, and Field of Study on English Proficiency of University Students. *International Journal of Education and Pedagogy*, 5(2), 291-300.
- Nematovna, S. S. (2024). The role of grammar in effective communication and writing. *Journal of Multidisciplinary Sciences and Innovations*.
- Nygård, M., & Hundal, A. K. (2024). Features of grammatical writing competence among early writers in a Norwegian school context. *Languages*, 9(1), 29. <https://doi.org/10.3390/languages9010029>
- Phuong, L. T., et al. (2022). Empowering English Major Students' Grammar Proficiency Through Language Ladder Quest: A Gamification Approach. *Educational Research and Reviews*, 17(5), 233-242.
- Potane, J. G. (2023). Grammatical accuracy on the students' communication skills and performance. *International Journal of Multidisciplinary Research and Publications*, 8(1), 77–82.
- Runde, D. F. (2017). The English language and global competition. Center for Strategic and International Studies.
- Tarrayo, V. N., & Anudin, A. (2021). Grammar proficiency and pedagogical challenges among pre-service teachers. *Asia-Pacific Social Science Review*, 21(3).
- Yusuf, F. (2024). Unveiling the role of grammar mastery: How sentence structure, verb usage, and subject-verb agreement shape tenses proficiency in English learning. ResearchGate.
- Zare-ee, A. (2015). Sustained effects of socioeconomic status on proficiency and academic writing in English as a foreign language. *TELL*, 4(2).

Presidential Candidates' Rhetorical Self-Presentation in the 2022 Philippine Elections

Janeson G. Maambong*, Sheena Bea L. Deligero, Emmanuel Ken Heloctog

Faculty of the College of Arts and Sciences, STI West Negros University, Bacolod City, Philippines

*Email : ninemaambong99@gmail.com

Abstract

The 2022 Philippine presidential election established social media as a central arena for political self-presentation, yet limited research has examined how classical rhetorical appeals are mediated by digital platform affordances in candidates' online communication. This study aimed to analyze how five leading presidential candidates—Ferdinand “Bongbong” Marcos Jr., Maria Leonor “Leni” Robredo, Emmanuel “Manny” Pacquiao, Francisco “Isko Moreno” Domagoso, and Panfilo “Ping” Lacson—constructed their public identities through the interaction of classical rhetoric and digital rhetoric. Using qualitative rhetorical-discourse analysis, the study analyzed twenty-five purposively selected posts from the candidates' verified public social media accounts through a transparent qualitative scoring framework. The analysis examined the rhetorical appeals of ethos, pathos, and logos alongside the digital rhetorical principles of multimodality, interactivity, circulation, and rhetorical velocity. The results showed that ethos and pathos were the dominant appeals in self-presentation, logos was a less dominant and effective when modified into short, visually strong, and concise messaging. Subsequent analyses showed that platform design, algorithmic dissemination, and controlled interactivity facilitated optimization of message visibility and persuasive effectiveness. The analysis demonstrates how modern political self-presentation is determined by an intersection of classical rhetorical appeals and digital platform affordances. Such, the study offers a productive framework for analyzing political persuasion in the digital age and extends research on digital rhetoric, political communication, and digital literacy in the Philippines.

Keywords: Classical Rhetoric; Digital Rhetoric; Self-Presentation; Social Media Campaigning; 2022 Philippine Elections

1. Introduction

The 2022 Philippine presidential election was a significant moment in the development of Philippine digital political communication. Rallies, television appearances, and traditional news coverage remained significant, but the campaign was also mediated through Facebook, TikTok, YouTube, and X, as everyday spaces where candidates performed their identities, mobilized supporters, and circulated competing political narratives. The Carter Center (2024) called the election a “pivotal one for Philippine democracy” with a record 83.07 percent voter turnout, but also pointed out that “disinformation and the rehabilitation of political images online remain concerns.” In this context, the election provides an interesting example for studying the changes in political persuasion that result from platform-based communication.

Research on elections in the Philippines has pointed to personalized politics, weak party institutionalization, and the growing importance of social media influencers and platform publics (Arugay and Baquisal 2022). Arugay and Baquisal (2022) contend that social media was crucial in the creation, dissemination, and reception of stories that galvanized and polarized voters in the 2022 elections. Gaw and Arugay (2024) elaborate that political influencers have become permanent fixtures in Philippine electoral politics, especially as they can serve as brokers of candidate narratives within entertainment-based platform cultures. These findings imply that social media not only transmitted campaign messages but also reconfigured the production of credibility, emotion, and visibility.

The study tackles this situation by relating classical rhetoric to digital rhetoric. The artistic proofs of Aristotle—ethos, pathos, and logos—are still useful for understanding persuasion because candidates still need to appear credible, emotionally compelling, and reasonable (Aristotle, 2007). But these appeals don't work the same way on social media. Eyman (2015) stresses that circulation, interaction, and multiple symbol systems of digital objects need to be integrated into digital rhetoric. A campaign post is thus not only a text or an image but also a multimodal artifact that is designed for visibility and engagement, for sharing and possible recomposition.

This research had a general objective of analyzing the use of classical rhetorical appeals and digital rhetorical affordances by leading presidential candidates in the 2022 Philippine elections in constructing political self-presentation on social media. The present study contributes to filling a research gap by providing a limited empirical account of the specific mediation of ethos, pathos, and logos by multimodality, interactivity, circulation, and rhetorical velocity in official, verified candidate posts. While studies on disinformation, influencer networks, and campaign polarization have been conducted, there has been little work on a structured rhetorical-discourse model that combines classical appeals with platform-specific modes of digital persuasion in the setting of the Philippine election (Arugay & Baquisal, 2022; Bunquin & Gaw, 2022; Eyman, 2015; Gaw & Arugay, 2024).

2. Related Literature

2.1 Political Campaigning and the Hybrid Media Landscape in the Philippines

The terrain of Filipino electoral politics has long been characterized by personalization, dynastic power, and weak party discipline, and these structural features are now augmented by social media's ability to circumvent traditional gatekeepers and substitute them with direct, curated performances. Bunquin and Gaw (2022) and the Digital Public Pulse project observe that the hybrid media environment is a complex web of platform-specific content that voters see on Facebook, X, and YouTube. The 2022 elections, in this space, showed how influence operations, historical revisionism, and affective narratives (Arugay and Baquisal 2022; Caparas 2024) shape political discourse through the successful combination of collective memory and emotion. This ecosystem is centered around political influencers, who have become key players in spreading campaign messages, as unregulated intermediaries between candidates and the public. The ability of influencers to generate intense emotional engagement and catalyze participation across networks indicates that the best political messaging today is that which is most integrated into the official candidate strategy and the grassroots, digital environment driven by influencers.

2.2 Classical Rhetoric and the Affective Economy of Digital Campaigns

Although the digital leads to a reconfiguration of the elements of ethos (credibility), pathos (emotional resonance), and logos (rational argument), classical rhetoric, traditionally framed by Aristotle, remains a vital lens for analyzing political persuasion. In modern campaign communication, these classical pillars are often reused, for example, through the performance of a moralized ethos via family or religious imagery, so as to generate particular responses from the audience. But today's digital arenas disrupt the game by privileging speed, shareability, and the flow of "digital affect," in which feelings circulate among users and symbols to support narratives of national unity or divisive polarization (Ahmed, 2004; Boler et al., 2024). Thus, the study of political rhetoric should extend beyond slogans to analyze how a multimodal spectrum of words, images, sounds, and platform affordances serve as rhetorical devices, where persuasive power is not only in formal logic but in the capacity of content to establish trust, evoke strong affective responses, and deliver seemingly persuasive evidence within a digital ecosystem that is predicated on rapid circulation (Eyman, 2015; Kress & van Leeuwen, 2006).

2.3 Ethos, Pathos, and Logos: Description and Classification Used in the Analysis

This study aims to clarify classification by identifying each Aristotelian appeal through observable indicators in the social media posts analyzed. These indicators form the basis for assigning a high, medium, or low analytical rating in rhetorical-discourse analysis.

Appeal	Operational Description	Typical Indicators in Posts	Classification Basis
Ethos	The construction of candidate credibility, character, authority, sincerity, competence, or moral worth.	Service record, family/religious identity, endorsements, leadership images, fieldwork, debate presence, and honesty and integrity claims.	High when credibility is the main persuasive force; medium when credibility supports another appeal; low when credibility cues are weak or incidental.
Pathos	The activation of emotion, identification,	Crowd imagery, emotionally loaded	High when emotion drives the post; medium

Appeal	Operational Description	Typical Indicators in Posts	Classification Basis
	belonging, moral outrage, nostalgia, compassion, humor, pride, fear, or hope.	captions, music, color symbolism, personal stories, suffering, sacrifice, unity slogans, and humorous trends.	when emotion supports evidence/credibility; low when emotional cues are minimal.
Logos	The use of evidence, reasoning, programs, policy claims, facts, issue framing, or structured arguments.	Policy promises, program details, debate clips, statistics, infographics, cause-effect reasoning, and reform proposals.	High when argument/evidence structures the message; medium when evidence is simplified or secondary; low when claims lack proof or are absent.

2.4 Digital Rhetorical Principles: Circulation, Interactivity, and Multimodality

In an effort to accomplish the second aim of the study, a powerful analytical framework for digital self-presentation should not be confined to static content, but should concentrate on the mechanics of digital rhetoric: circulation, interaction and multimodality. This approach, based on Eyman (2015) and Jewitt et al. (2016), examines how candidates' production of posts mixes visual, verbal, and audio modes to fulfill specific affordances of these platforms—using TikTok's trending audio and verticality versus Facebook's shareable photo sets. The analysis focuses on a concept of "rhetorical velocity," defined by Ridolfo and DeVoss (2009), that strategic campaign communication is created not only for consumption but for future recomposition by supporters via screenshots, quote cards, and fan edits. This framework underscores how candidates' anticipation and facilitation of the viral circulation of their messaging is evident in their treatment of posts as modular, emotionally resonant, and highly shareable artifacts, recognizing that success in digital spaces is increasingly dependent on a post's ability to be easily circulated and engaged with across a wider, user-driven network.

2.5 Visual Grammar and Multimodal Political Communication

The study uses Kress and van Leeuwen's (2006, 2020) visual grammar to analyze the visual aspects of political campaign posts; a framework that explores how images create meaning through representational, interactive, and compositional levels. Representational meaning identifies the subjects and actions represented, compositional meaning considers the arrangement and salience of visual elements, and interactive meaning, which is the main concern here, considers the relational dynamics established by gaze, distance and angle. The study's ability to distinguish between "demand" images, in which eye contact is used to solicit a connection, and "offer" images, in which the subject is viewed from a distance, enables the categorization of candidates' strategic presentation of themselves as intimate, powerful or service-oriented figures. This visual grammar is essential for contemporary multimodal discourse analysis, as Zhang (2023) highlighted, offering a concrete methodology to unravel how the convergence of visuals, text, motion, and platform cues persuades audiences across different online environments like Facebook, TikTok, YouTube, and X.

2.6 Synthesis of Literature and Research Gap

The reviewed literature shows that influencers, disinformation narratives, affective identity, and platform-specific visibility shape Philippine digital campaigning. However, the gap remains in explaining how official candidate posts combine classical rhetorical appeals with digital affordances at the level of the post itself. This study addresses that gap by using rhetorical-discourse analysis supported by multimodal analysis, controlled interactivity, and rhetorical velocity. In doing so, it provides a clearer method for interpreting candidate self-presentation as a structured, visual, affective, and platform-mediated performance.

2.7 Objectives

This paper aimed to investigate how leading presidential candidates in the 2022 Philippine elections constructed rhetorical self-presentation on verified social media accounts by combining classical rhetorical appeals with digital rhetorical affordances.

Specifically, this study aimed to:

1. Analyze the nature of the presidential candidates' use of ethos, pathos, and logos as self-presentation strategies.
2. **Examine how circulation, interactivity, multimodality, rhetorical velocity, and platform-specific strategies framed and amplified these self-presentations.**

3. Materials and Methods

3.1 Research Design and Paradigmatic Framing

The present inquiry is grounded in the interpretivist-constructivist paradigm because it fits with Guba and Lincoln's (1994) view that meanings are socially constructed, different and context-dependent. Crotty (1998) emphasizes the significance of interpretive engagement in the construction of social meanings. Social media posts are understood as public rhetorical artifacts in this study. The meaning of a post is created through the interplay of the candidate's messaging, the platform design, visual symbols, and audience engagement. Its qualitative design also enables an exploration of the construction of rhetorical identity, rather than a quantitative assessment of the impact on voters. The aim is to demonstrate how posts make candidates credible, emotional or rational in social media campaigning. Clear coding rubric is supported by explicit definitions and visual evidence.

3.2 Corpus and Sampling Strategy

This study examined twenty-five social media posts from the verified accounts of the five leading candidates for the 2022 Philippine presidential elections: Ferdinand "Bongbong" Marcos Jr., Maria Leonor "Leni" Robredo, Emmanuel "Manny" Pacquiao, Francisco "Isko Moreno" Domagoso, and Panfilo "Ping" Lacson. Selected posts were from Facebook, TikTok, YouTube and X, based on the posts' visibility and relevance to candidates' self-presentation. A purposive sampling strategy was adopted to focus on posts that emphasized candidate identity, political values, public image and policy stance during the official campaign period. The study acknowledges its limitations, in that it does not represent all campaign communications, focusing on high-engagement, visible posts and excluding low-engagement content, targeted ads and deleted posts. The results are thus a reflection of official self-presentation and not of the entire campaign ecosystem.

3.3 Research Instrument: Rhetorical-Discourse Analysis Combined with the Scoring Rubric

The study employed Rhetorical Discourse Analysis (RDA) and a qualitative scoring rubric. The two methodologies are distinguished. RDA to evaluate the rhetorical situation, audience orientation, persuasive appeals, visual design, and platform context. Rhetoric is seen as discourse meant to accomplish persuasive action in a given situation (Gill & Whedbee, 1997). The researchers coded each post for exigence, audience, purpose, and appeal and then analyzed for ethos, pathos, logos, multimodality, interactivity, and platform-specific strategy. The scoring rubric, based on the standards of qualitative content analysis, was based on Schreier's emphasis on transparent coding frames and Mayring's rule-based approach. This framework enabled systematic comparability without sacrificing interpretations to mere numerical values, for clear comparative assessments.

3.4 Data Gathering and Analysis Procedure

The study followed a six-step methodological approach, starting with an extensive literature review on classical and digital rhetoric, Philippine digital campaigning, and multimodal analysis. After identifying verified public accounts, the researchers conducted a systematic data collection, capturing screenshots or key metadata (platforms, dates, formats, engagement metrics) for each selected post. The artifacts were then subjected to a two-cycle coding analysis. The first-cycle coding was focused on foundational elements, such as ethos, pathos, logos, and platform-specific strategies. The second-cycle interpretation was based on a Rhetorical-Discourse Analysis (RDA) framework that combined Kress and van Leeuwen's visual grammar with elements of rhetorical velocity. This process resulted in a cross-candidate synthesis of dominant rhetorical appeals and digital strategies, providing a targeted analysis of the impact of platform-mediated communication on candidate presentation.

3.5 Ethical Considerations

The study included only public posts made by verified official candidate accounts. No private messages, personal voter profiles, or nonpublic data were obtained. Screenshots were provided solely as visual evidence for academic analysis, and the identities of candidates were released because they are public political figures, making candidate identification necessary for interpreting rhetorical self-presentation. The study did not claim to know private intentions, and interpretations were limited to the visible and public rhetoric of the posts.

3.6 Trustworthiness and Analytical Transparency

Trustworthiness was addressed by using transparent operational definitions, visible evidence in the form of screenshots, and a clear coding framework. Claims were supported by observable post features such as color, framing, gaze, caption, platform format, and engagement affordances. The same coding categories were applied to all candidates to support dependability. Transferability was considered by providing a sufficient description of the platform and political context to enable future researchers to compare findings with other election contexts.

4. Theoretical and Analytical Framework

4.1 Integrated Framework

This study proposes an integrated framework of classical rhetoric, digital rhetoric and multimodal discourse analysis. According to Aristotle (2007), classical rhetoric is the elements of ethos, pathos and logos that persuade. Eyman (2015) writes digital rhetoric as a way to understand the circulation of digital texts, the invitation to participate, and the integration of various symbol systems, bringing the concepts of circulation, interactivity, and multimodality. At the same time, multimodal analysis (Kress and van Leeuwen, 2006, 2020) offers visual methods to investigate the ways in which visual elements such as images, camera angles, gaze, colour, captions and layouts help to create meaning in digital texts.

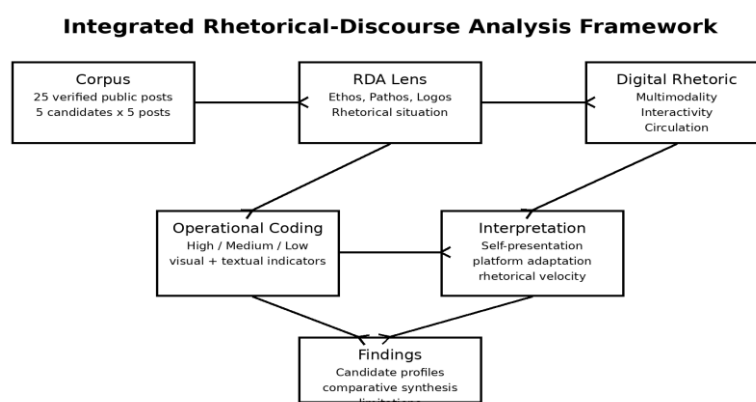


Figure 1. This rhetorical-discourse analysis uses an integrated analytical framework.

4.2 Framework Application to the Analysis

Three analytical moves were made using the framework. The study first pinpointed the predominant rhetorical appeal each post employed, whether ethos, pathos, logos, or a blend of the three. Second, it examined how the visual and platform affordances of the post helped produce this appeal. Third, it examined the design of the post for circulation and controlled interaction. Instead, an image of a rally was not just coded as “crowd support” but was analyzed as a multimodal construction of ethos and pathos through color, scale, social distance, crowd density, framing of captions, hashtags, and shareability.

4.3 Classification for High, Medium, and Low Ratings

Post indicators were classified into high, medium, and low ratings based on the number, clarity, and centrality. The rating reflects analytical strength within the sample and is not a statistical score of electoral success.

Rating	Meaning	Minimum Basis	Example of Application
High	The strategy is the primary rhetorical vehicle of the post.	Multiple reinforcing indicators are present across text, image/video, platform feature, and audience cue.	The post features a rally image with color symbolism, a unity caption, a massive crowd display, hashtags, and high shareability, all of which enhance its pathos and circulation.
Medium	The strategy contributes to the post but is secondary to another appeal or mode.	At least one clear indicator is present, but it does not dominate the message.	A policy hint embedded in an endorsement graphic serves as a medium for logos, provided the main emphasis remains on credibility.
Low/None	The strategy is weak, absent, or requires heavy interpretation.	Few or no visible indicators are present.	A personality-centered post with no evidence, policy, or argument is low for logos.

5. Analysis Models and Operationalization

5.1 Multimodal Analysis Model

Based on Kress and van Leeuwen's (2006, 2020) visual grammar, the Multimodal Analysis Model provides an in-depth tool for analyzing the multifaceted, multi-layered nature of social media campaign content. This model goes beyond a purely linguistic analysis to the synergistic production of meaning across multiple modalities, as political communication on platforms like Facebook, TikTok and X relies on the convergence of visuals, audio, typography and platform-specific metrics. This process is shaped by its tripartite construction. Representational meaning enumerates the events portrayed in the ad, such as rallies, public service, or familial settings. Interactive meaning employs the "offer" and "demand" dichotomy to map the relational power dynamics between the candidate and viewer. Compositional meaning examines the strategic placement of elements such as color, framing, and salience. This study investigates the details of a self-presentation using a focus on interactive meaning, but also uses representational and compositional analyses as an important piece of supporting evidence—as, for example, in the case of a low-angle shot, which simultaneously signifies mass support and positions the viewer as a participant in a candidate's larger narrative of power and influence.

5.2 Controlled Interactivity Model

The Controlled Interactivity Model, based on Stromer-Galley's (2004, 2019) conceptual framework, differentiates between "interactivity-as-product" (the technical affordances of liking, sharing, or hashtagging) and "interactivity-as-process," which calls for authentic reciprocal deliberation. Understanding this model is important to understanding contemporary campaigns, which often have a strategic interest in promoting digital participation to increase reach, while at the same time limiting interactive forms that may expose the candidate to message risk or unpredictable discourse. From this perspective, the study classifies candidate posts by the degree to which they invite participation, coding posts as "high controlled interactivity" if they actively invite fan participation, trend imitation, or sharing across the network to increase visibility while maintaining tight control over the candidate's story; by contrast, posts with "lower interactivity" are those that emphasize passive viewing over active, audience-driven participation.

5.3 Circulation and Rhetorical Velocity

The circulation framework brings together Eyman's (2015) work on digital rhetoric with the notion of "rhetorical velocity" from Ridolfo and DeVoss (2009), illustrating how contemporary campaign communication is intentionally designed to be moved, recomposed, and reused in the future. In this digital world, the success of a post isn't defined by how much it's seen at first, but by how much it gets shared, memed, clipped and recontextualized across vast networks. Therefore, this study aims to study circulation by looking at how specific artifacts such as TikTok clips using trending audio, crowd imagery ready for Facebook, or short, modular quote graphics, exploit platform fit, emotional intensity, and visual clarity in an effort to maximize their circulation. This model recognizes that high rhetorical velocity often is achieved by emotionally appealing and easily malleable content, suggesting a strategic trade-off in political messaging: dense policy statements may offer strong logos, but they tend to have lower velocity than the highly shareable, simplified content that is dominant in the digital attention economy.

5.4 Operational Analysis Matrix

The following matrix shows how the major models were used in the analysis.

Model	Publication Basis	Main Concepts	Operational Question	Application in This Study
Classical Rhetoric	Aristotle; modern translation by Kennedy (2007)	Ethos, pathos, logos	What persuasive appeal is dominant?	Identifies credibility, emotion, and evidence in each post.
Rhetorical-Discourse Analysis	Gill and Whedbee (1997)	Rhetorical situation, audience, purpose, constructed discourse	How is persuasion organized in context?	Links appeal to candidate persona, audience, and campaign purpose.
Multimodal Analysis	Kress and van Leeuwen (2006; 2020)	Representational, interactive, compositional meanings	How do visual and verbal modes construct meaning?	Examines gaze, angle, framing, color, salience, and visual evidence.
Controlled Interactivity	Stromer-Galley (2004; 2019)	Media interaction, interactivity-as-process, message control	Does the post invite dialogue or controlled engagement?	Distinguishes likes/shares/hashtags from genuine deliberative interaction.
Circulation and Rhetorical Velocity	Ridolfo and DeVoss (2009); Eyman (2015)	Movement, remix, recomposition, platform visibility	How is the post built to circulate?	Assesses shareability, modularity, hashtag use, trend fit, and platform-native format.

6. Results and Analysis

6.1 Ferdinand "Bongbong" Marcos Jr.

Bongbong Marcos Jr. strategically crafted his online persona by leaning on ethos and pathos, presenting himself as a symbol of unity, continuation and popular support. His collection of images, like rally crowds, celebrity patrons and emotionally charged mass rallies, utilized these aspects to project him as a candidate with a united electorate. The strategy relies on ethos, where credibility is built on public approval, as seen in the visual record, rather than on policy discussion. The campaign used a multimodal strategy, blending color, size and emotional crowd displays. The use of red and warm tones linked his campaign to a broader emotional narrative of national recovery. Images

function as ‘offers’ in the sense described by Kress and van Leeuwen (2006), inviting viewers to acknowledge mass support and perceive legitimacy without skepticism. The posts primarily showcased themes of symbolic unity, resilience, sacrifice, and gratitude, while containing minimal logos, indicating that the campaign's persuasive power leaned more on affective resonance than on concrete policy discussion. This is in line with the argument that narratives of authoritarian nostalgia and affective identity were central to the construction of the terrain of persuasion in the 2022 elections (Arugay & Baquisal, 2022; Caparas, 2024; Gaw & Arugay, 2024).

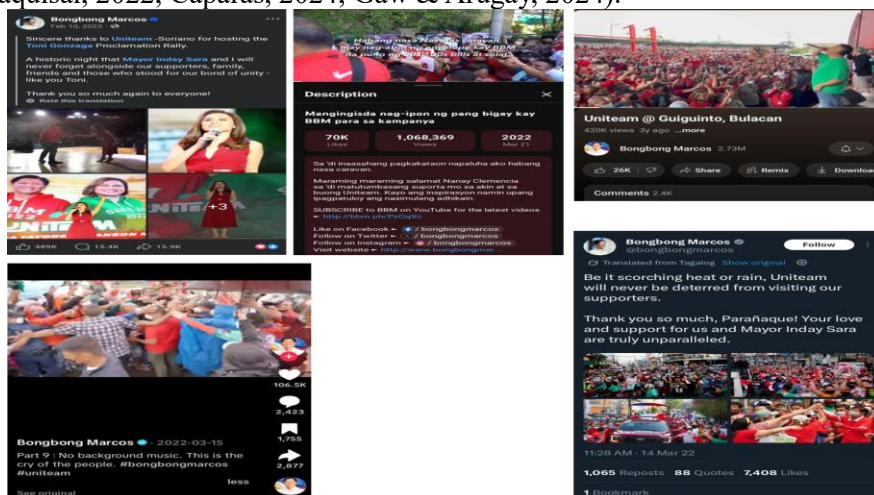


Figure 2. Screenshots of selected Bongbong Marcos Jr. posts used for rhetorical and multimodal analysis.

6.2 Maria Leonor “Leni” Robredo

The artful fusion of institutional ethos and participatory pathos characterized the self-presentation of Leni Robredo’s campaign. Her stuff — mass rallies, endorsement graphics, and TikTok contributions — cast her as capable and compassionate. The public spaces were filled by visual representations and symbols of the digital campaign co-constructed by the supporters. Its participatory multimodality was another important characteristic, with pink branding, rally photography, hashtags and pop-culture references that turned supporters into visible co-authors of the campaign identity. The official campaign offered the advantages of slogan consistency and message discipline. The “Pink Movement” was characterized by horizontal audience participation, such as fan videos and memes, resulting in a controlled, yet distributed interactivity. Robredo’s logos was most prominent in posts that tackled the issues of corruption and good governance. These posts were often accompanied by aesthetically pleasing clips and emotionally charged slogans. The strongest appeal of the campaign was the combination of ethical credibility and collective emotional engagement, which proved the ability of digital platforms to transform professional competence into active public participation, employing multimodal symbols (Bunquin & Gaw, 2022; Eyman, 2015).

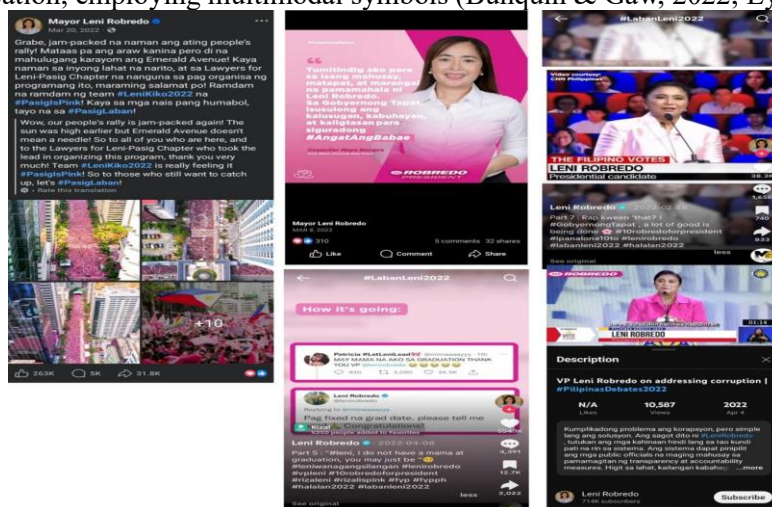


Figure 3. Screenshots of selected Leni Robredo posts used for rhetorical and multimodal analysis.

6.3 Emmanuel “Manny” Pacquiao

Manny Pacquiao’s campaign was a presentation of self based on moral ethos and religious pathos. His messaging included anti-corruption rhetoric, family prayer and worker recognition, all couched in themes of faith, sacrifice and national struggle. His biography as a boxer who rose from poverty made him credible. But his campaign amplified that with moral and spiritual images rather than detailed policy arguments. His tweets had an emotional appeal that was accessible, with references to God, family, workers, and anti-corruption issues that offered voters simple emotional access points. He was both a politician and a morally grounded family man, an image of prayer with his spouse creating public intimacy. His logos was not especially high; he largely framed issues as moral claims, rather than policy specifics. The digital success of the campaign was based on emotional clarity, and an effective identification of values that created highly shareable posts, which resonated with the religious and working-class electorate, due to their short and culturally familiar messages.

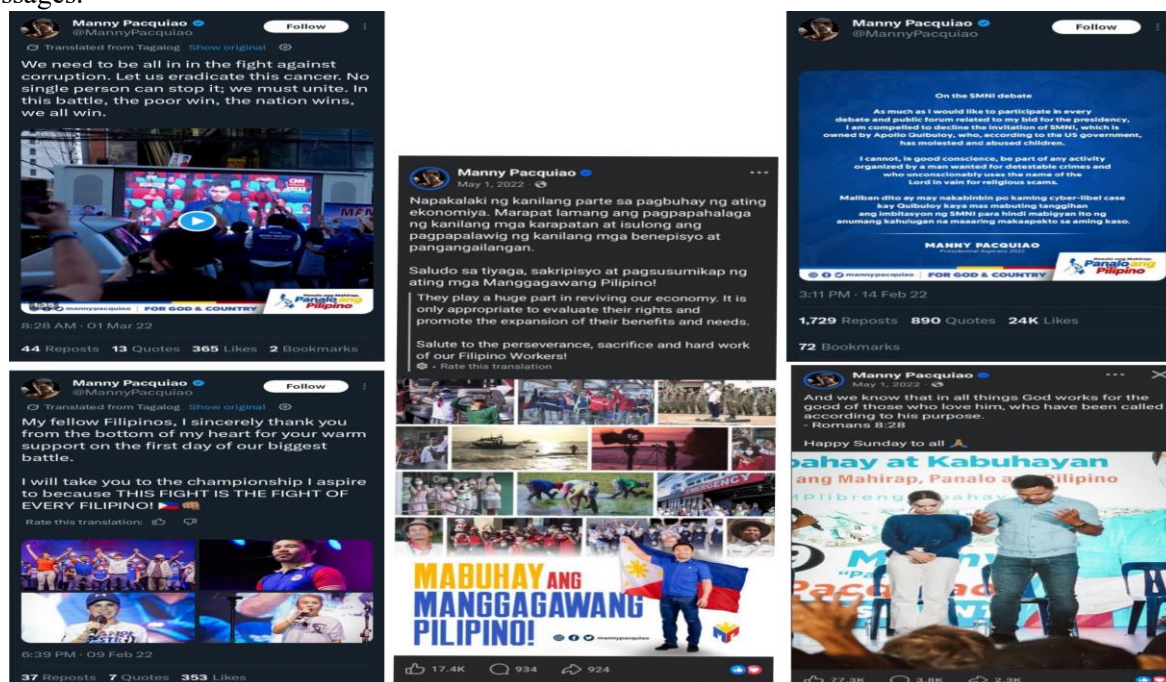


Figure 4. Screenshots of selected Manny Pacquiao posts used for rhetorical and multimodal analysis.

6.4 Francisco “Isko Moreno” Domagoso

Francisco “Isko Moreno” Domagoso’s self-presentation is an illustration of the successful integration of ethos, pathos, and logos in political communication. His campaign used TikTok to show relatability through celebrity endorsements, housing projects and financial assistance for frontliners. Moreno painted a picture of a down-to-earth leader who knew the average voter and backed up his claims with concrete proof of what he had achieved. What was innovative in Moreno’s approach was the “aestheticization of logic”: conventional explanations of government actions were transformed into appealing content – photos, infographics, short videos – that demonstrated the city’s achievements. His posts were lively and energetic, with interactive components specific to each social media platform, with TikTok videos emphasizing relatability and informal, trend-based approaches, with Facebook and X posts emphasizing administrative credibility with achievement-based images. Overall, Moreno’s approach was strikingly effective in translating policy substance into visually compelling formats adapted for different social media outlets.

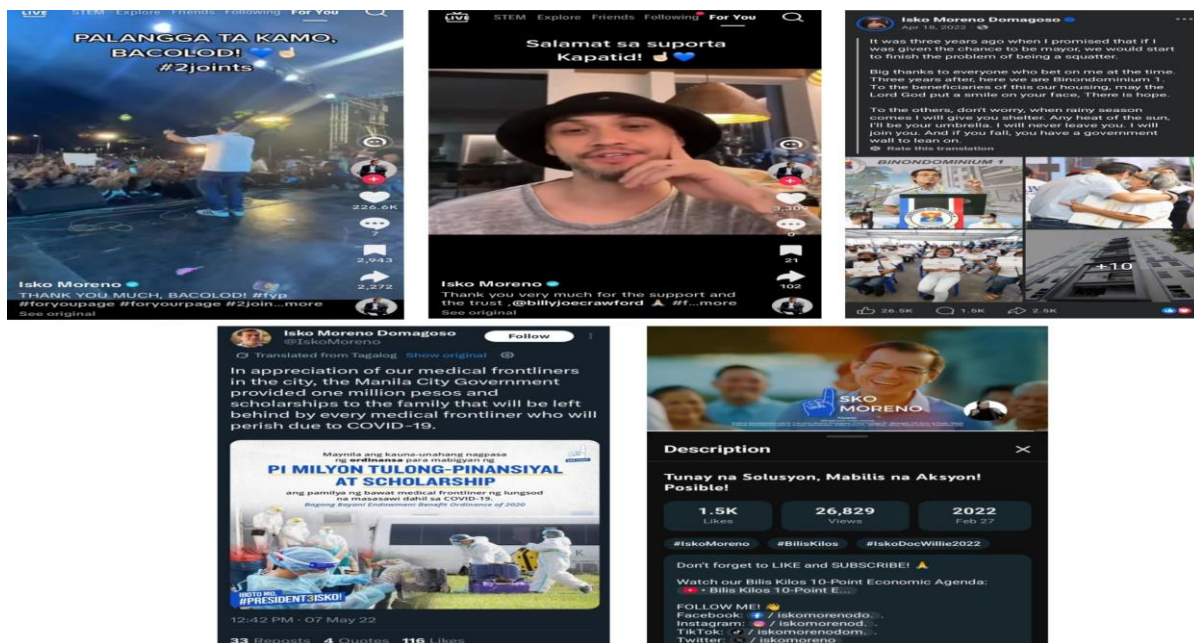


Figure 5. Screenshots of selected Isko Moreno posts used for rhetorical and multimodal analysis.

6.5 Panfilo “Ping” Lacson



Figure 6. Screenshots of selected Ping Lacson posts used for rhetorical and multimodal analysis.

The self-representation of Panfilo “Ping” Lacson in his campaign was based on principled values, emphasizing anti-corruption reform, discipline, and national sacrifice. His campaign utilized various media, including moral contrasts, anti-corruption imagery, humanitarian efforts, and debate highlights, positioning him as a serious alternative to traditional patronage politics. Unlike more spectacle-driven campaigns, Lacson focused on programmatic claims and debate performance, showcasing a high volume of policy-oriented messages. However, the effectiveness of this approach was hindered by the need for platform-specific adaptations. Many of his posts contained dense text or formal arguments that required sustained attention, creating a disconnect between the quality of his arguments and their visibility on social media, which favors short, emotionally resonant content. This case underscores the importance of aligning rhetorical arguments with the visual and engaging

formats demanded by digital platforms. Although Lacson's campaign was grounded in rational discourse, it struggled to communicate this effectively within the affective landscape of social media.

6.6 Coded Post Summaries

Tables 1 through 5 summarize the coding of the selected posts. The expanded labels make clear whether each appeal is high, medium, or low and identify the dominant digital strategy.

Table 1. *Ferdinand “Bongbong” Marcos Jr.: Summary of Coded Posts*

Post No.	Platform	Ethos	Pathos	Logos	Digital Strategy
1	Facebook	High: celebrity and alliance support	High: unity and mass gratitude	Low	Multimodal endorsement and handshake image
2	YouTube	High: grassroots integrity	High: empathy and sacrifice	Low	Unscripted refusal narrative in video
3	YouTube	High: borrowed credibility	High: unity through rally crowd	Low	Celebrity rapper and rally spectacle
4	TikTok	High: public support	High: sacrifice in rain	Low	Raw rain-soaked short-form campaign video
5	X	High: resilience and gratitude	High: loyalty and endurance	Low	Supporter photos designed for rapid sharing

Table 2. *Maria Leonor “Leni” Robredo: Summary of Coded Posts*

Post No.	Platform	Ethos	Pathos	Logos	Digital Strategy
1	Facebook	High: sector and mass support	High: rally solidarity	Low	Rally branding and campaign hashtags
2	Facebook	High: official endorsement	Medium: values identification	Medium: policy hints	Endorsement graphic with visual icons
3	TikTok	High: service record and relatability	High: humor and trend participation	Medium: evidence cues	“Rap Kween” trend participation video
4	TikTok	High: compassion and responsiveness	High: human-interest emotion	Low	Supporter graduation narrative video
5	YouTube	High: integrity and competence	Medium: anti-corruption urgency	High: reform argument	Debate highlights video

Table 3. Emmanuel “Manny” Pacquiao: Summary of Coded Posts

Post No.	Platform	Ethos	Pathos	Logos	Digital Strategy
1	X	High: moral leadership	High: unity against corruption	Medium: issue framing	Advocacy-toned campaign video
2	X	High: integrity and conscience	High: outrage over corruption	Medium: justification	Formal ethical statement text graphic
3	X	High: national identity	High: national pride	Low	Patriotic family and supporter images
4	Facebook	High: pro-worker persona	High: recognition of workers	Low-Medium	Labor Day sector-targeted graphic
5	Facebook	High: faith and family	High: religious emotion	Low	Sunday prayer image with spouse

Table 4. Francisco “Isko Moreno” Domagoso: Summary of Coded Posts

Post No.	Platform	Ethos	Pathos	Logos	Digital Strategy
1	TikTok	High: relatability	High: fun and crowd energy	Low	Trending audio and crowd interaction
2	TikTok	Medium: validity through influencer support	High: admiration	Low	Celebrity influencer endorsement video
3	Facebook	High: track record	High: empathy	High: housing evidence	Housing project achievement photo post
4	X	High: governance competence	Medium: sympathy for frontliners	High: policy/program evidence	Frontliner financial-aid infographic
5	YouTube	High: achievement image	High: hope and optimism	Medium-High: programmatic claims	Performance-based campaign video ad

Table 5. Panfilo “Ping” Lacson: Summary of Coded Posts

Post No.	Platform	Ethos	Pathos	Logos	Digital Strategy
1	Facebook	High: principled image	High: anti-corruption contrast	Medium: accountability claim	Contrastive moral textual messaging
2	Facebook	High: clean image	High: reform call	High: policy reform	“New Politics” programmatic advocacy
3	Facebook	High: honesty	High: anger at	Medium:	Opponent-

Post No.	Platform	Ethos	Pathos	Logos	Digital Strategy
			opponent politics	critique	contrast split-screen video
4	YouTube	High: service action	Medium: compassion	Low	Raw humanitarian disaster relief video
5	YouTube	High: bravery and seriousness	High: patriotism	High: national security claim	Formal debate clip

6.3 Synthesis of Rhetorical and Digital Strategies

Table 6. Summary of Rhetorical Appeals per Candidate

Candidate	Ethos	Pathos	Logos	Dominant Appeal
Bongbong Marcos Jr.	High	High	Low	Ethos + Pathos
Leni Robredo	High	High	Medium	Ethos + Pathos
Manny Pacquiao	High	High	Low-Medium	Ethos + Pathos
Isko Moreno	High	High	Medium-High	Ethos + Pathos + Logos
Ping Lacson	High	High	High in presence; lower in digital circulation	Ethos + Logos + Pathos

As shown in Table 6, all candidates were consistently strong in both ethos and pathos. That does not mean that all candidates used the same style. Instead, it shows that credibility and emotion became the fundamental currencies of digital self-presentation. Logos was uneven based on the selected corpus, simplified in the visual governance posts of Moreno, more formal in the policy-oriented posts of Lacson, and relatively weak in the selected posts of Marcos Jr. and Pacquiao.

Table 7. Summary of Digital Strategies per Candidate

Candidate	Multimodality	Interactivity	Platform-Specific Strategy	Circulation / Algorithmic Awareness
Bongbong Marcos Jr.	High: warm colors, crowds, nostalgia, rally spectacle	Medium-High: reactions and shares encouraged, but dialogue limited	High: YouTube diaries, TikTok crowd clips, Facebook rally sets	High: emotionally simple and visually shareable unity narratives
Leni Robredo	High: pink branding, rally spectacle, debate clips, TikTok trends	High: supporter co-creation through movement content and hashtags	High: platform-native trend participation and volunteer visuals	High: content designed for supporter amplification and remix
Manny Pacquiao	High: family, faith, worker, and national imagery	Medium: moral identification more than dialogue	Medium-High: simple graphics and value statements on Facebook/X	High: short, moral, emotionally familiar messages
Isko Moreno	High: TikTok relatability plus policy infographics	Medium-High: crowd interaction and influencer endorsement	High: governance evidence translated into visual posts	High: strong adaptation of logos into snackable visuals

Ping Lacson	Medium-High: debate clips, graphics, relief videos, text-heavy posts	Medium: controlled engagement, limited participatory play	Medium: formal broadcast style adapted unevenly	Low-Medium: strong argument but weaker platform-native compression

Table 7 presents different scoring. All candidates used multimodality but not with equal platform effectiveness. Marcos Jr. and Robredo were high in circulation because their posts were emotionally clear and visually modular. Moreno scored high because the governance claims were turned into visual evidence. Lacson scored lower in circulation as strong logos were less adapted to platform attention dynamics.

7. Discussion

The results confirm that digital campaigning in the 2022 Philippine elections was based on a complex interaction of classical rhetoric and the specific affordances of the platform. Using Kress and van Leeuwen's visual grammar, this research illustrates how candidates successfully reconstructed ethos through "performative authenticity" in which credibility was visually staged rather than merely claimed. This performance of identity was sustained by a "affective economy" in which pathos was the primary engine of engagement; emotions such as unity, nostalgia, and anger facilitated the circulation of content as expressions of personal identity, echoing findings by Arugay and Baquisal (2022) on online mobilization.

In contrast, the role of logos was highly marginalized and aestheticized, surviving only in a "snackable" visual format. This suggests a core tension: policy claims may be rhetorically present, but "digital weak" if they do not meet platform-native demands for conciseness and shareability (Eyman, 2015). In addition, the analysis shows that despite the illusion of participation provided by social media, interactivity was largely "controlled" and a rhetorical device of amplification, rather than a space for genuine democratic deliberation or accountability.

Ultimately, the most successful content was that with the greatest "rhetorical velocity"—content with emotional cues and familiar symbols that allowed it to move quickly. This has significant consequences for democratic discourse: As campaigns increasingly prioritize shareable, identity-based rhetoric over evaluative reasoning, the quality of political communication is shifted toward the powerful but less deliberative. Citizens, educators, and election bodies will therefore have to create more sophisticated frameworks for assessing visual rhetoric, algorithmic influence, and structural constraints on digital political participation.

7. Conclusion, Limitations, and Recommendations

The convergence of classical rhetoric and digital platform affordances was found to be the self-presentation of presidential candidates in the 2022 Philippine elections. Ethos remained central but was reconfigured as performative authenticity. Pathos became a major factor in visibility because emotional posts were easier to share and to identify with. Logos was variably present and most effective in the compressed visual evidence. Thus, digital campaigning was not a substitute for classical persuasion; it reconfigured ethos, pathos, and logos through multimodality, controlled interactivity, circulation, and rhetorical velocity.

This study offers a limited focused qualitative content analysis of 25 posts from verified public accounts and does not include the broader scope of paid advertisements, private content or unofficial influencer networks. Moreover, the sampling strategy that privileged high engagement posts may have biased the analysis towards high visibility rhetoric, rather than policy-focused material. It is crucial to point out that this research is measuring rhetorical construction, not voter persuasion, electoral causality, or audience reception. The research uses static visual evidence that may not reflect the dynamism or evolution of platform metrics. In the end, this study sheds light on official front-stage self-presentation, but does not capture the complex nature of back-stage campaign coordination, paid boosting, or algorithmic recommendation systems.

The challenges of the intersection of classical rhetoric and digital affordances call for a series of strategic interventions. Election agencies should revise the digital campaign transparency rules to require disclosures of ad spending, influencer partnerships and the role of digital campaign intermediaries to fill existing regulatory gaps (Gaw and Arugay, 2024). At the same time, educational and civic institutions should focus on media and information literacy—not just textual fact-

checking—to give citizens the tools to analyze visual grammar, affective appeals, and the mechanics of algorithmic visibility. Social media platforms are also encouraged to bear greater responsibility by providing researchers with clear access to data of public interest – such as political advertising and patterns of coordinated behaviour – while maintaining robust standards of privacy for users.

In future research, scholars should use methodological triangulation, combining rhetorical discourse analysis with audience reception studies, interviews, and computational social science to better map the translation of digital rhetoric into real-world patterns of circulation and voter interpretation. Finally, political parties and candidates should establish strong ethical guidelines that clearly discourage historical distortion, manipulative affective targeting, and harassment-based amplification, so as to keep the digital campaign space free of strategic deception and focused on genuine political discourse.

Acknowledgments

The researchers would like to extend their heartfelt gratitude to Almighty God for guidance, strength, and wisdom in the completion of this research study. Sincere gratitude is given to STI West Negros University for the academic environment for this inquiry. Appreciation is also given to the research adviser, Dr. Rey T. Eslabon, for guidance and support; to the researchers' classmates in AB English Language 4A for their encouragement; and to the families of the researchers for their constant love and assistance.

References

- Ahmed, S. (2004). *The cultural politics of emotion*. Edinburgh University Press.
- Aristotle. (2007). *On rhetoric: A theory of civic discourse* (G. A. Kennedy, Trans., 2nd ed.). Oxford University Press.
- Arugay, A. A., & Baquisal, J. K. A. (2022). Mobilized and polarized: Social media and disinformation narratives in the 2022 Philippine elections. *Pacific Affairs*, 95(3), 549–573.
<https://doi.org/10.5509/2022953549>
- Boler, M., Kweon, Y.-J., & Ni Threasaigh, M. (2024). Digital affect culture and the logics of melodrama: Online polarization and the January 6 Capitol riots through the lens of genre and affective discourse analysis. *Social Media + Society*, 10(1), Article 20563051241228584.
<https://doi.org/10.1177/20563051241228584>
- Bunquin, J. B. A., & Gaw, F. (2022). Digital public pulse: Mapping the digital landscape of Philippine politics. *PCS Review*, 14(1), 181–194.
- Caparas, F. C. (2024). Literacy, national identity, and affective economies in the 2022 Philippine presidential election. *Journal of Information Ethics*, 33(2), 84–97.
<https://doi.org/10.2307/JIE.33.2.84>
- Carter Center. (2024). *2022 general elections in the Philippines: Final report*. The Carter Center.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Sage Publications.
- Eyman, D. (2015). *Digital rhetoric: Theory, method, practice*. University of Michigan Press.
- Gaw, F., & Arugay, A. A. (2024). Like, subscribe and vote: The role of political influencers in the 2022 Philippine elections and beyond. *ISEAS Perspective*, 2024(19), 1–9.
- Gill, A. M., & Whedbee, K. (1997). Rhetoric. In T. A. van Dijk (Ed.), *Discourse as structure and process: Discourse studies: A multidisciplinary introduction* (Vol. 1, pp. 157–184). Sage Publications.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). Sage Publications.
- Jewitt, C., Bezemer, J., & O'Halloran, K. L. (2016). *Introducing multimodality*. Routledge.
- Kress, G., & van Leeuwen, T. (2006). *Reading images: The grammar of visual design* (2nd ed.). Routledge.
- Kress, G., & van Leeuwen, T. (2020). *Reading images: The grammar of visual design* (3rd ed.). Routledge.
- Mayring, P. (2014). *Qualitative content analysis: Theoretical foundation, basic procedures and software solution*. Klagenfurt.

- Ridolfo, J., & DeVoss, D. N. (2009). Composing for recomposition: Rhetorical velocity and delivery. *Kairos: A Journal of Rhetoric, Technology, and Pedagogy*, 13(2).
- Schreier, M. (2012). *Qualitative content analysis in practice*. London: Sage Publications.
- Soriano, C. R. R., & Gaw, F. (2022). Broadcasting anti-media populism in the Philippines: YouTube influencers, networked political brokerage, and implications for governance. *Policy & Internet*, 14(3), 508–524. <https://doi.org/10.1002/poi3.322>
- Stromer-Galley, J. (2004). Interactivity-as-product and interactivity-as-process. *The Information Society*, 20(5), 391–394. <https://doi.org/10.1080/01972240490508017>
- Stromer-Galley, J. (2019). *Presidential campaigning in the internet age* (2nd ed.). Oxford University Press.
- Zhang, P. (2023). Visual grammar in multimodal discourse: A case study of Nezha's poster images. *Proceedings of the 9th International Conference on Education, Language, Art and Inter-Cultural Communication (ICELAIC 2022)*, 4, 59–65. <https://doi.org/10.55060/s.atssh.230322.010>

The Difficulties Encountered by College Students with the Cashiering Services

Vanessa M. Pira-an*, Sandara Mae H. Alayon, Roselyn N. Baranggan, Noel B. Tausa, Mae Therese A. Peronce

College of Business Management and Accountancy, STI West Negros University

*Email : vypiraan@gmail.com

Abstract

This study aimed to determine the level of difficulty encountered by college students in using the cashiering services of a university in the Central Philippines during the school year 2025. A descriptive research design was employed, involving three hundred seventy-three (373) college students selected through a purposive sampling technique, and data were gathered using a self-made questionnaire. Frequency and percentage distributions were used to describe the respondents' profiles, while the mean was used to determine the level of difficulty in the areas of service timeliness, operational efficiency, and staff responsiveness. The Mann–Whitney U test and the Kruskal–Wallis test were applied to identify significant differences across age, sex, year level, college department, and average monthly family income. Results indicated that students experienced moderate difficulty with service timeliness and operational efficiency, and low difficulty with staff responsiveness. Significant differences in the level of difficulty were observed when respondents were grouped by college department and average monthly family income, whereas no significant differences were found when grouped by age, sex, and year level. The findings suggest that academic affiliation and socioeconomic factors influence students' experiences with cashiering services. These results provide valuable insights into improving cashiering service delivery in higher education institutions.

Keywords: Difficulties; cashiering services; college students; service timeliness; operational efficiency

1. Introduction

In today's highly competitive global arena, the quality of service in higher education is a growing concern for educational institutions (Esguerra, Acosta, and Cantor, 2020). According to Doan (2021), higher education institutions in the 21st century hold one of the most important roles in shaping the future of our society. Bautista (2025) added that students are the primary clients, and their satisfaction with frontline services, including admissions, registrar, guidance, medical, and financial services, is a critical indicator of institutional performance and reputation. School administrative services are a crucial component of educational management, as they support the smooth teaching and learning process and facilitate institutional governance (Sarifudin, Utami, and Nasrudin, 2025).

Among these administrative functions is the cashiering office, which facilitates financial transactions, processes tuition and fees, manages payment records, and addresses students' financial inquiries (Acal and Milallos, 2026). According to Dugenio-Nadela et al. (2023), the efficiency of support services plays a crucial role in shaping institutional reputation. These services ensure that students can fulfill institutional requirements necessary for enrollment, registration, and continued participation in academic programs. When these services function well, they minimize errors and delays. In contrast, when they become inefficient, they create operational barriers, such as missed exams and administrative frustration, that weaken student trust and damage institutional credibility.

The importance of examining these services becomes more evident when viewed in light of national policies that guide student welfare in higher education. The Commission on Higher Education's CHED Memorandum Order [CMO] No. 09, s. 2013 emphasizes the responsibility of institutions to provide accessible, efficient, and student-centered administrative support systems. It is also deeply connected to the global pursuit of Quality Education, a central topic of the fourth Sustainable Development Goal, which recognizes Higher Education Institutions as pivotal in ensuring inclusive, equitable quality education, as well as promoting lifelong learning for all (United Nations Development Programme, n.d.). The achievement of these national and global goals depends not only on academic excellence, but also on the efficiency of university

administrative offices, which serve students as they navigate their higher education experience. Consequently, evaluating the efficiency of these administrative functions provides valuable insights into how Higher Education Institutions can improve the quality of services provided while carrying out their educational mandate.

By investigating the specific operational difficulties within cashiering, a gap currently left by general service quality literature, this study aimed to identify bottlenecks and provide evidence-based insights that align institutional performance with these global developmental mandates.

2. Objectives

This study aimed to determine the level of difficulty encountered by college students in using the cashiering services of a higher education institution in a highly urbanized city during the school year 2025. Specifically, this study aimed to:

- 2.1 Describe the profile of the respondents in terms of age, sex, year level, college department, and average monthly family income
- 2.2 Determine the level of difficulties encountered by college students with the cashiering services in the areas of service timeliness, operational efficiency, and staff responsiveness.
- 2.3 Examine whether there is a significant difference in the level of difficulty encountered by college students across age, sex, year level, college department, and average monthly family income.

3. Materials and Methods

3.1 Research Design

This study employed a descriptive research design to determine the level of difficulty college students encounter with cashiering services in a higher education institution in a highly urbanized city in the Central Philippines during the school year 2025-2026. According to McCombes (2019), descriptive research aims to accurately and systematically describe a population, situation, or phenomenon. It can answer what, where, when, and how questions, but not why questions. It is an appropriate choice when the research aims to identify characteristics, frequencies, trends, and categories. It is useful when little is yet known about the topic or problem. Before you can research why something happens, you need to understand how, when, and where it happens. This research design is the most appropriate for this study, as it simply gathers factual information and describes the phenomenon being studied.

3.2 Respondents

A total of three hundred seventy-three (373) students from a population of eleven thousand sixty-six (11066) are the respondents of the study. These respondents are students of a higher education institution in a highly urbanized city in the Central Philippines for the 2025 school year. The sample size was determined using the Cochran formula. The respondents were selected using a purposive sampling technique. Bisht (2024) described purposive sampling as a non-randomized technique that selects sampling units based on certain criteria. Participants were selected based on their relevance to the study's objectives. Specifically, only students who had direct experience with the institution's cashiering services were deliberately included, ensuring that the data collected reflected actual encounters with the service processes under investigation.

3.3 Instruments

An online survey questionnaire was used to gather data on the level of difficulty college students encounter with cashiering services. It was subjected to a validity test (4.25; excellent) and a reliability test (0.963; excellent). The survey questionnaire was divided into four parts, wherein Part I deals with the eligibility of the respondents to participate in the survey. Part II of the questionnaire contains the formal consent for the processing of personal data in compliance with Republic Act No. 10173, also known as the Data Privacy Act of 2012 (National Privacy Commission, 2012). Part III presents the profile of the respondents by age, sex, year level, college department, and average monthly family income. Part IV of the questionnaire is a 30-item statement for the areas: 10 for service timeliness, 10 for operational efficiency, and 10 for staff responsiveness, which measured the level of difficulties using a 5-point Likert scale rating with 5

as “always,” 4 as “often,” 3 as “sometimes,” 2 as “rarely,” and 1 as “almost never.”

Procedure

A formal letter addressed to the university's treasury manager was submitted to request permission to conduct the study. Upon approval, data collection began after validity and reliability testing of the self-developed survey questionnaire. In the context, a specific section of the online survey explained the purpose of the study and provided guidance on completing the survey. The respondents were assured that the data gathered, recorded, and analyzed would remain confidential. The responses were tallied and tabulated using appropriate statistical tools, and the encoded data were processed using SPSS.

3.4 Data Analysis and Statistical Treatment

The study employed descriptive and comparative-analytical methods. A descriptive-analytical scheme was used to determine participants' profiles for age, sex, year level, college department, and average monthly family income, using the mean as a tool. A descriptive-analytical scheme was also used to determine the level of difficulty encountered by college students with cashiering services across the areas of service timeliness, operational efficiency, and staff responsiveness, using the mean as the tool. On the other hand, a comparative-analytical scheme was used to determine whether there is a significant difference in the difficulties encountered when respondents are grouped and compared according to the aforementioned variables, with the Mann-Whitney U test and the Kruskal-Wallis test used as the tools. A cut-off significance level of 0.05 was used in the analyses to accept or reject the hypothesis.

Research Ethics Protocol

The researchers ensured that respondents' voluntary consent was obtained during data collection. Participants' identities were kept anonymous, and no self-identifying or personal information was collected. Confidentiality and anonymity were strictly observed to protect the privacy of all the respondents who voluntarily participated in the study. The study took deliberate steps to minimize potential harm to its participants in compliance with Republic Act 10173, also known as the Data Privacy Act of 2012 (National Privacy Commission, 2012).

4. Results

Table 1 Profile of the Respondents

Variables	Categories	Frequency	Percentage
Age	20 years old or below	184	49.3
	Above 20 years old	189	50.7
Sex	Male	140	37.5
	Female	233	62.5
Year Level	1 st Year	96	25.7
	2 nd Year	76	20.4
	3 rd Year	126	33.8
	4 th Year	75	20.1
College Department	College of Business, Management, and Accountancy	128	34.3
	College of Hotel and Tourism Management	93	24.9
	College of Engineering	35	9.4
	College of Arts and Sciences	26	7.0
	College of Criminal Justice Education	42	11.3
	College of Information and Communications Technology	27	7.2
	College of Education	22	5.9
Average Monthly Family Income	20,000 pesos or below	263	70.5
	Above 20,000 pesos	110	29.5
Total		373	100

Table 1 presents the frequency and percentage distributions of 373 college students by age, sex, year level, college department, and average monthly family income. The respondents comprised 184 college students aged 20 years old or below (49.3%) and 189 college students aged 21 or older (50.7%) of the total population. Regarding sex, 140 respondents were male (37.5%) and 233 were female (62.5%). Meanwhile, in terms of year level, the largest proportion of respondents were in the 3rd year, accounting for 126 (33.8%), followed by 1st year students with 96 (25.7%). The 2nd- and 4th-year students comprised 76 (20.4%) and 75 (20.1%) of the respondents, respectively.

As for the college department, most respondents came from the College of Business Management and Accountancy with 128 (34.3%), followed by the College of Hospitality and Tourism Management with 93 (24.9%). Smaller proportions were from the College of Criminal Justice Education (42 or 11.3%), College of Engineering (35 or 9.4%), College of Information and Communications Technology (27 or 7.2%), College of Arts and Sciences (26 or 7.0%), and College of Education (22 or 5.9%). Moreover, 263 respondents, or 70.5%, had an average monthly family income of 20,000 pesos or less, and 110 respondents, or 29.5%, had an average monthly family income above 20,000 pesos.

Based on the study, most respondents were above 20 years old, female, and from families with an average monthly income of 20,000 pesos or less. In terms of academic characteristics, most respondents were in the 3rd year and were enrolled in the College of Business Management and Accountancy.

Table 2 Level of Difficulties Encountered in the area of Service Timeliness

As a college student, I encounter difficulty when...		Mean	Interpretation
1	I spend an excessive amount of time waiting in line just to get my transaction started.	4.06	High
2	I waste time in line only to find out I was missing a required document or endorsement.	2.70	Moderate
3	I encounter delays in payment processing, especially during enrollment or examination periods.	3.68	High
4	I find that cashier services start late or close earlier than the posted schedule.	2.80	Moderate
5	I have missed appointments or classes because of the unforeseen duration of the cashiering process.	3.08	Moderate
6	I encounter overcrowding in the cashier area that slows down transactions.	4.19	High
7	I find that the total time required for a single transaction exceeds a reasonable timeframe.	2.85	Moderate
8	I need to return on another day to complete my transaction due to service delays.	3.34	Moderate
9	I cannot estimate how long it will take to finish a payment.	3.98	High
10	I am rushing to complete my payment because the service window is about to close.	2.82	Moderate
Overall Mean		3.35	Moderate

Table 2 presents data on the difficulties college students encounter with cashiering services regarding service timeliness. The overall mean was 3.35, interpreted as a moderate level, indicating that students experienced a moderate degree of difficulty with the timeliness of cashiering services. The highest mean score in this area was 4.19, interpreted as a high level, for Item No. 6, which stated, "I encounter overcrowding in the cashier area that slows down transactions." On the other hand, the lowest mean score in this area was 2.70, interpreted as a moderate level, in Item No. 2, which stated, "I waste time in line only to find out I was missing a required document or endorsement." This implies that while cashiering services are generally functioning at an acceptable level, specific issues in crowd management affect service efficiency. The high mean score for overcrowding suggests that congestion in the cashier area is a primary factor that causes delays, indicating a need for improved space organization, scheduling systems, or additional

service counters.

Prolonged waiting times and overcrowding strain service systems, slowing down workflows and reducing the timeliness and overall quality of service delivery. According to Sawale and Shaikh (2025), traditional manual queues in government offices, hospitals, and other public service centers are a pervasive source of inefficiency, leading to long waiting times that cause significant user dissatisfaction, operational stress, and anxiety. These delays are not merely an inconvenience but can act as a significant barrier to accessing essential services, resulting in negative outcomes such as crowding. Murnawan (2023) also stressed that the best service is to effectively maximize service to customers/consumers so that there are no long queues, consumers do not wait long, and they feel satisfied with the services. When queues are not managed efficiently, congestion and delays can compound, making it increasingly difficult for service providers to deliver prompt and reliable assistance.

Table 3 Level of Difficulties Encountered in the area of Operational Efficiency

As a college student, I encounter difficulty when...		Mean	Interpretation
1	I find the steps in completing payments confusing or complicated.	2.42	Low
2	I need to visit multiple offices or windows before my payment is accepted or recorded.	2.35	Low
3	I experienced system interruptions or downtimes that prolong my transaction.	2.50	Low
4	I experienced a lack of cashier counters during peak periods such as exam and enrollment.	3.87	High
5	I find the online or external payment systems unreliable or difficult to use.	3.00	Moderate
6	I experienced changes in the payment procedure without prior notice.	2.30	Low
7	I cannot secure an official receipt or payment proof immediately.	2.22	Low
8	I encounter errors or discrepancies in my payment details.	2.22	Low
9	I experience a lack of 'real-time' updates, requiring me to wait days for my payment to be officially reflected.	3.08	Moderate
10	I still encounter delays when claiming an official receipt/exam permit despite the presence of external payment channels.	3.08	Moderate
Overall Mean		2.70	Moderate

Table 3 presents data on the difficulties college students encounter with cashiering services regarding operational efficiency. The overall mean was 2.70, interpreted as moderate, suggesting that the difficulties encountered by college students were moderate in terms of operational efficiency. The highest mean score in this area was 3.87, interpreted as moderate, for Item No. 4, which stated, "I experience a lack of cashier counters during peak periods such as exam and enrollment." The lowest mean score in this area was 2.22, interpreted as low level, in Items No. 7 and 8, which respectively stated, "I cannot secure an official receipt or payment proof immediately," and "I encounter errors or discrepancies in my payment details."

An implication from the data is that operational efficiency in cashiering services is generally acceptable but still poses noticeable challenges during high-demand periods. The relatively higher mean score for the lack of cashier counters during peak times suggests that insufficient staffing or service points is a key factor affecting efficiency. This alludes to a need for better resource allocation, such as increasing the number of active counters or strengthening the implementation of alternative payment systems during busy periods.

Proper staffing and an adequate number of counters contribute to both operational efficiency and the overall student experience. According to Reddy and Gandham (2026), effective staffing ensures that the right number of employees with the required skills and qualifications are placed in the right positions at the right time. A well-structured staffing process helps organizations improve productivity, enhance employee performance, and maintain operational efficiency. This finding also aligns with a simulation study that found that adding more cashier staff significantly reduced wait times and improved service balance, illustrating concretely how counter

capacity affects operational efficiency (Vilca-Cancho et al., 2025).

Table 4 Level of Difficulties Encountered in the area of Staff Responsiveness

As a college student, I encounter difficulty when...		Mean	Interpretation
1	I observe that the staff do not listen carefully when I explain an unusual or complex payment issue.	2.18	Low
2	I find it hard to get clear and accurate answers to my payment concerns.	2.30	Low
3	I notice that cashier staff are inattentive to student concerns.	2.35	Low
4	I wait a long time before my concern is resolved or acknowledged.	2.39	Low
5	I observe that staff show unwillingness to help when issues arise.	2.21	Low
6	I observe that staff responsiveness decreases during busy payment periods.	3.12	Moderate
7	I do not receive a clear verbal confirmation or an assuring gesture from the staff during the transaction.	2.51	Low
8	I find that the staff cannot speak clearly or loudly enough to communicate transaction details effectively.	3.36	Moderate
9	I notice that the cashier staff fail to understand the urgency of my financial deadlines or issues.	2.28	Low
10	I believe the cashier staff show less concern in assisting students with their needs.	2.31	Low
Overall Mean		2.50	Low

Table 4 presents data on the difficulties college students encounter with cashiering services regarding staff responsiveness. The overall mean was 2.50, which was interpreted as low, suggesting that the difficulties encountered by college students were low based on staff responsiveness. The highest mean score in this area was 3.36, interpreted as a moderate level, for Item No. 8, which stated, "I find that the staff cannot speak clearly or loudly enough to communicate transaction details effectively." The lowest mean score in this area was 2.18, interpreted as a low level, in Item No. 1, which stated, "I observe that staff do not listen carefully when I explain an unusual or complex payment issue."

This further implies that staff responsiveness is generally not a major concern for students, as reflected by the overall low level of difficulty. This suggests that cashiering personnel are largely attentive and responsive to students' needs, particularly in listening and addressing concerns. However, the moderate rating for unclear or inaudible communication indicates that issues with how information is conveyed during transactions persist. This calls for improvements in communication, such as speaking more clearly or ensuring instructions are easily understood.

Communication clarity matters when delivering services. As noted by Stankovska, Ziberi, and Dimitrovski (2024), students' perceptions of service quality in higher education are significantly influenced by staff responsiveness and communication clarity. The data also corroborates with Setiono and Hidayat (2020), who emphasized how responsiveness benefits service quality, including the ability of staff to provide clear details to customers. Audible communication from cashiering staff is required to ensure students accurately understand transaction information. When staff speak clearly and relay details effectively, it reduces confusion about payment amounts, requirements, or procedures, preventing repeated explanations or corrections that slow service.

Table 5 Differences in the Level of Difficulties Encountered in the area of Service Timeliness when grouped and compared according to the variables

Variable	Category	N	Mean Rank	Mann-Whitney U-test	Kruskal-Wallis Test	P-value	Sig. level	Interpretation
Age	20 years old or below	184	198.71	20952.0	-	0.576	0.05	Not Significant

	Above 20 years old	189	205.21					
Sex	Male	140	200.21	19497.0	-	0.807		Not Significant
	Female	233	203.12					
Year Level	1 st Year	96	-	-	3.963	0.265		Not Significant
	2 nd Year	76	-					
	3 rd Year	126	-					
	4 th Year	75	-					
College Department	College of Business Management and Accountancy	128	-	-	25.796	0.001		Significant
	College of Hospitality and Tourism Management	93	-					
	College of Engineering	35	-					
	College of Arts and Sciences	26	-					
	College of Criminal Justice Education	42	-					
	College of Information and Communications Technology	27	-					
	College of Education	22	-					
Average Monthly Family Income	20,000 pesos or below	263	221.79	11873.0	-	0.000		Significant
	Above 20,000	110	157.99					

Table 5 presents comparative analyses of the level of difficulty encountered by college students with cashiering services in service timeliness, grouped and compared by age, sex, and average monthly family income using the Mann-Whitney U test, and by year level and college department using the Kruskal-Wallis test.

As shown in the table, the computed mean ranks by age were 198.71 for respondents aged 20 years and below and 205.21 for respondents aged 21 years and above, with a p-value of 0.576, which was interpreted as not significant. In terms of sex, the male group had a computed mean rank of 200.21, while the female group had a mean rank of 203.12 (p-value = 0.807), which was interpreted as not significant. With respect to year level, the Kruskal-Wallis test indicated no statistically significant difference (p-value=0.265) in the level of difficulty students encountered. However, for the college department, the Kruskal-Wallis test yielded a p-value of 0.001, which was interpreted as significant. The average monthly family income's computed mean rank for the group earning 20,000 pesos or below was 221.79, while the group earning above 20,000 pesos was 157.99, with a p-value of 0.001, which was interpreted as significant.

Hence, when the college students were grouped by age, sex, and year level, the p-values were greater than 0.05, indicating that the differences were not significant. Therefore, the null hypothesis, "There is no significant difference in the level of difficulties encountered by students when grouped and compared according to the aforementioned variables," was accepted. However, when the college students were grouped by college department and average monthly family income, the p-value was lower than 0.05, indicating significance. Therefore, the null hypothesis, "There is no significant difference in the level of difficulties encountered by students when grouped and compared according to the aforementioned variables," was rejected.

It suggests that the difficulties in service timeliness are not universally experienced across all student groups but are influenced by specific contextual factors. Since age, sex, and year level showed no significant differences, it signifies that these personal characteristics do not substantially affect how students perceive or experience delays in cashiering services. Nevertheless, the significant differences observed across college departments and average monthly

family income indicate that certain groups of students are more affected than others. This implies that disparities in service timeliness may be due to differences in transaction types, the number of students in each department, or financial procedures. In addition, differences in family income may reflect varying expectations, urgency, or access to resources when using cashiering services.

The study aligns with that of Dichoso et al. (2019), which found that the academic department significantly affects how service timeliness is experienced. The study specifically found that promptness and timeliness of service delivery, under the qualities of reliability and responsiveness, varied across departments, with some departments experiencing slower service than others. This suggests that academic unit affiliation can shape students' evaluations of service timeliness and responsiveness, reinforcing the current result that departmental grouping influences students' difficulties with service timeliness. The study by David et al. (2019) also complemented this by demonstrating that actual waiting times during the enrollment process varied systematically by academic department, with students in departments with higher transaction volumes experiencing longer delays.

Education is recognized as a crucial driver of the social and economic advancement of communities, as it helps individuals enhance their socioeconomic standing through employment (Campos and Campos, 2023). The findings also align with the work of Holt and Vinopal (2023), which stated that income levels play a key factor, as lower-income individuals spend significantly more time waiting for services than higher-income individuals. Students from lower-income backgrounds often face longer waits because they tend to have less flexibility to pay in advance. In contrast, those from higher-income backgrounds can often avoid long queues by leveraging payment schedules, paying in full upon enrollment or ahead of the peak periods.

Table 6 Differences in the Level of Difficulties Encountered in the area of Operational Efficiency when grouped and compared according to the variables

Variable	Category	N	Mean Rank	Mann-Whitney U-test	Kruskal-Wallis Test	P-value	Sig. level	Interpretation
Age	20 years old or below	184	202.24	20249.5	-	.967	0.05	Not Significant
	Above 20 years old	189	201.76					
Sex	Male	140	213.08	17503.0	-	.131		Not Significant
	Female	233	195.08					
Year Level	1 st Year	96		-	5.229	.156		Not Significant
	2 nd Year	76						
	3 rd Year	126						
	4 th Year	75						
College Department	College of Business Management and Accountancy	128		-	15.407	.017		Significant
	College of Hospitality and Tourism Management	93						
	College of Engineering	35						
	College of Arts and Sciences	26						
	College of Criminal Justice Education	42						
	College of Information and Communications Technology	27						
	College of Education	22						
Average Monthly Family Income	20,000 pesos or below	263	215.68	13572.5	-	.000		Significant
	Above 20,000	110	171.58					

Table 6 presents comparative analyses of the level of difficulty encountered by college students with cashiering services in operational efficiency, grouped and compared by age, sex, and average monthly income using the Mann-Whitney U test, and by year level and college department using the Kruskal-Wallis test.

As shown in the table, the computed mean ranks by age were 202.24 for students aged 20 years or below and 201.76 for students aged 21 years or older, with a p-value of 0.967, which was interpreted as not significant. In terms of sex, the male group had a computed mean rank of 213.08, while the female group had a mean rank of 195.08; the p-value was 0.131, interpreted as not significant. With respect to year level, the Kruskal-Wallis test yielded a p-value of 0.165, which was interpreted as not significant. However, for the college departments, the Kruskal-Wallis test yielded a p-value of 0.017, which was interpreted as significant. The average monthly income's computed mean rank for the group earning 20,000 pesos or below was 215.68, while the group earning above 20,000 pesos was 171.38, with a p-value of 0.001, which was interpreted as significant.

Hence, when the college students were grouped by age, sex, and year level, the p-values were greater than 0.05, indicating that the differences were not significant. Therefore, the null hypothesis, "There is no significant difference in the level of difficulties encountered by students when grouped and compared according to the aforementioned variables," was accepted. However, when the college students were grouped by college department and average monthly income, the p-value was lower than 0.05, indicating significance. Therefore, the null hypothesis, "There is no significant difference in the level of difficulties encountered by students when grouped and compared according to the aforementioned variables," was rejected.

The findings imply that operational efficiency issues in cashiering services are largely consistent across students regardless of age, sex, or year level, suggesting that these difficulties are system-related rather than influenced by basic demographic characteristics. However, significant differences were observed in college departments and average monthly income, indicating that operational efficiency is unevenly experienced among certain student groups. Some departments may face heavier transaction loads and more complex payment procedures, leading to greater inefficiencies. Income-based gaps suggest that students from lower socio-economic backgrounds face additional difficulties, perhaps because they have limited access to alternative payment methods, greater reliance on in-person transactions, or greater sensitivity to delays.

The resulting study relates to the research by Paglinawan, Espina, and Prado (2025), which demonstrated that the timeliness of service, as well as the operational aspects of cashiering services, further influence students' experiences, indicating that inefficiencies or functional shortcomings in such offices are perceptible and meaningful to students. On top of that, the broader socioeconomic study by Bautista-Baligod et al. (2025) found that students from lower-income backgrounds face additional financial pressures, limited access to resources, and greater institutional barriers, which can exacerbate difficulties in navigating required processes in the realm of private tertiary education. Socioeconomic resources shape students' ability to navigate, withstand, and adapt to administrative processes. Students from higher-income households likely have greater access to personal technology, more flexible time to attend to administrative requirements, and external support, which can reduce the impact of operational inefficiencies. Meanwhile, lower-income students, constrained by fewer resources and competing time demands, are more likely to experience and report greater difficulties, amplifying the perceived inefficiency of administrative services.

Table 7 Differences in the Level of Difficulties Encountered in the area of Staff Responsiveness when grouped and compared according to the variables

Variable	Category	N	Mean Rank	Mann-Whitney U-test	Kruskal-Wallis Test	P-value	Sig. level	Interpretation
Age	20 years old or below	184	200.49	20599.0	-	.797		Not Significant
	Above 20 years old	189	203.48					
Sex	Male	140	212.62	17574.5	-	.148		Not Significant
	Female	233	195.36					
Year Level	1 st Year	96	-	-	3.037	.386		Not
	2 nd Year	76	-					

	3 rd Year	126	-					Significant
	4 th Year	75	-					
College Department	College of Business Management and	128	-	-	15.794	.015	0.05	Significant
	College of Hospitality and Tourism Management	93	-					
	College of Engineering	35	-					
	College of Arts and	26	-					
	College of Criminal Justice Education	42	-					
	College of Information and Communications	27	-					
	College of Education	22	-					
Average Monthly Family Income	20,000 pesos or below	263	215.77	13548.0	-	.000		Significant
	Above 20,000	110	171.38					

Table 7 presents comparative analyses of the level of difficulties encountered by college students with cashiering services in staff responsiveness, grouped and compared by age, sex, and average monthly income using the Mann-Whitney U test, and by year level and college department using the Kruskal-Wallis test.

As shown in the table, the computed mean ranks by age were 200.49 for students 20 years old or younger and 203.48 for students 21 years old or older, with a p-value of 0.797, which was interpreted as not significant. In terms of sex, the male group had a computed mean rank of 212.62, while the female group had a mean rank of 195.36, with a p-value of 0.148, which was interpreted as not significant. Regarding the year level, the Kruskal-Wallis test yielded a p-value of 0.386, which was interpreted as not significant. However, for the college departments, the Kruskal-Wallis test yielded a p-value of 0.015, which was interpreted as significant. The average monthly family income's computed mean rank for the 20,000-peso-or-below category was 215.77, while the above-20,000-peso category was 171.38, with a p-value of 0.001, which was interpreted as significant. Hence, when the college students were grouped by age, sex, and year level, the p-values were greater than 0.05, indicating that the differences were not significant. Therefore, the null hypothesis, "There is no significant difference in the level of difficulties encountered by students when grouped and compared according to the aforementioned variables," was accepted. However, when the college students were grouped by college department and average monthly family income, the p-value was lower than 0.05, indicating significance. Therefore, the null hypothesis, "There is no significant difference in the level of difficulties encountered by students when grouped and compared according to the aforementioned variables," was rejected.

This further implies that staff responsiveness in cashiering services is perceived similarly across students regardless of age, sex, and year level, indicating that staff behavior and interaction are consistent across these demographic groups. The level of attentiveness, willingness to assist, and general responsiveness of staff are not affected by these basic characteristics, reflecting a relatively uniform standard of service delivery. Although significant differences by college department and average monthly family income imply that responsiveness is not experienced equally by students. This suggests that certain departments may experience higher service demand or more complex concerns affecting how promptly and effectively staff respond to students, while students from lower-income groups may face more challenges or have different service needs or expectations.

The results agreed with Del Río-Rama et al. (2021). This study revealed that most respondents perceived staff responsiveness and service quality as central to their satisfaction with higher education services, and that effective communication and responsiveness from administrative staff are associated with better student experiences. Students across different college departments may perceive staff responsiveness differently because of variations in departmental culture. Departments with heavier service demands or less formal communication may inadvertently reduce perceived responsiveness, affecting how students evaluate staff attentiveness and support. Okon and Akpoiroro (2019) also support that factors such as socioeconomic status can influence how students interact with and perceive service staff. Like how students with fewer

resources may be more sensitive to perceived shortcomings in support or communication. Students from lower-income households may also report greater difficulty with staff responsiveness because they may require more clarification, reassurance, or assistance when navigating administrative services.

5. Discussion

A total of three hundred seventy-three (373) college students participated as respondents in this study regarding the difficulties encountered in the cashiering services. Most respondents were aged 20 or older and came from families with lower average monthly incomes. Regarding sex, the number of female respondents was higher than that of males. Regarding academic profile, the majority were in the 3rd year of tertiary education, and the College of Business Management and Accountancy had the highest representation.

With an overall mean score of 2.85, interpreted as “moderate level,” it is evident that the services are generally manageable. Despite this overall moderate rating, there are still notable concerns affecting students’ experiences that could significantly improve service delivery if addressed. Among the areas assessed, Service Timeliness ranked highest in difficulty, particularly regarding overcrowding and excessive waiting lines. Other issues related to operational efficiency and staff responsiveness also emerged but were rated lower.

Results revealed significant differences in the level of difficulties encountered in all areas, composed of service timeliness, operational efficiency, and staff responsiveness, when respondents were grouped and compared according to their college department and average monthly family income. However, no significant differences were found among respondents based on age, sex, or year level.

6. Conclusion

Efficient cashiering services are a vital step that serves as a “bridge” connecting student financial obligations with academic eligibility, helping them manage their time, focus on their studies, and maintain a positive relationship with the institution. The improvements that address the said difficulties not only focus on collecting payments but also on fostering a supportive campus environment, encouraging administrative transparency, and identifying opportunities for service excellence.

Although the study is generally rated as moderately difficult, service timeliness identifies physical overcrowding and long queueing times as the primary “systemic constraints” within the university’s financial operations. Such inefficiencies impede the objectives of SDG 4 (Quality Education) by creating administrative hurdles that can lead to missed academic opportunities and decreased student morale.

The significant difference in the level of difficulty based on average monthly family income highlights a socio-economic disparity in how administrative challenges are experienced. Students from lower-income backgrounds may be more vulnerable to the negative impacts of operational delays, emphasizing a critical area for improvement in line with SDG 10 (Reduced Inequalities).

This study concludes that for the university to evolve into a truly inclusive and strong institution as envisioned in SDG 16, it must shift from traditional manual-heavy processes toward a modernized, digital-first infrastructure. By addressing these specific operational bottlenecks, the institution can ensure that its cashiering services are not merely a functional necessity but a supportive gateway to a seamless and equitable educational experience.

Acknowledgements

The researchers would like to express their sincere gratitude to all the respondents who participated in this study for their valuable time and insights. They also extend their appreciation to their adviser for guidance and support, as well as the questionnaire evaluators and members of the oral defense panel for their constructive feedback. Above all, the researchers offer their deepest thanks to God Almighty for his guidance and strength throughout the completion of this work.

References

- Acal, E. J., & Milallos, E. (2026). Institutional Business Office Services of San Isidro College: Students' Awareness and Satisfaction as a Basis for Service Improvement. *School of Education Research Journal*. <https://doi.org/10.5281/zenodo.19019997>
- Bautista, J. M. (2025). Transacting Students' Views on Frontline Services: A Satisfaction Survey at Apayao State College. *International Journal for Multidisciplinary Research*, 7(3). <https://doi.org/10.36948/ijfmr.2025.v07i03.45013>
- Bautista-Baligod, M., Belaiz, F. R. M., Calda, T. M., Garcia, A. C., & Uzon, A. (2025). Diskarte at Diploma: Exploring the Relationship of Socioeconomic Status and Work-Academic Balance among Employed College Students. *International Journal of Research and Innovation in Social Science*, 9(6), 2106–2119. <https://dx.doi.org/10.47772/IJRISS.2025.906000162>
- Bisht, D. R. (2024). *What is Purposive Sampling? Methods, Techniques, and Examples*. Researcher.Life. https://researcher.life/blog/article/what-is-purposive-sampling-methods-techniques-and-examples/#What_is_a_purposive_sampling
- Campos, J. D., & Campos, J. (2023). Student Support Services Towards Institutional Change and Development. *Educational Policy and Development*, 1(1), 20–32. <https://doi.org/10.31098/epd.v1i1.1283>
- Commission on Higher Education. (2013). CMO No. 9, Series of 2013 - Enhanced Policies and Guidelines on Student Affairs and Services. In *Scribd* (pp. 1–14). <https://www.scribd.com/doc/276369259/CMO-No-09-s2013>
- David, A. A., Guinto, D. J., Lopez, A., Pagulayan, J., Quiazon, S., Santos, H., & Abello, L. (2020). Enrolment Queuing System for a Local College in Angeles City, Pampanga. *PUNLA 2020 Edition*, 3(1), 209–215. <https://cca.edu.ph/assets/images/Enrolment%20Queuing%20System%20for%20a%20Local%20College%20in%20Angeles%20City,%20Pampanga.pdf>
- Del Río-Rama, M. de la C., Álvarez-García, J., Mun, N. K., & Durán-Sánchez, A. (2021). Influence of the Quality Perceived of Service of a Higher Education Center on the Loyalty of Students. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.671407>
- Dichoso, A. K., Gromontil, K. J., Manguiat, K. A., & Rolle, A. (2019). Measuring the Gap on Service Quality Management Support Service in Lyceum of the Philippines-Laguna: Basis of Rater Dimension. *LPU-Laguna Journal of Business and Accountancy*, 3(2), 73–78. <https://lpulaguna.edu.ph/wp-content/uploads/2019/10/9.-Measuring-the-Gap-on-Service-Quality-Management-Support-Service-in-Lyceum-of-the-Philippines-Laguna-Basis-of-Rater-Dimension.pdf>
- Doan, T. T. T. (2021). The Effect of Service Quality on Student Loyalty and Student Satisfaction: An Empirical Study of Universities in Vietnam. *Journal of Asian Finance Economics and Business*, 8(8), 251–258. <https://doi.org/10.13106/jafeb.2021.vol8.no8.0251>
- Dugenio-Nadela, C., Cañeda, D. M., Tirol, S. L., Samillano, J. H., Joan, D., Piañar, J. C., Tinapay, A. O., Mae, H., Cometa, R. A., Conson, S. O., Urot, M. V., Ancot, J. M., Nadela, R. L., Dugenio-Terol, I., Baluyot, A. M., Kerr Pevida, Olivar, J. I., & Decena, E. (2023). Service Quality and Student's Satisfaction in Higher Education Institution. *Journal of Human Resource and Sustainability Studies*, 11(04), 858–870. <https://doi.org/10.4236/jhrss.2023.114049>
- Esguerra, J., Acosta, J., & Cantor, M. L. (2020). Service Quality Satisfaction as experienced by Dentistry Students. *UB Research Journal*, 44(1), 87–109. <https://rdc.ubaguio.edu/wp-content/uploads/2025/05/UBRJ-44-1-2020-Service-quality-satisfaction-as-experienced-by-dentistry-students.pdf>
- Holt, S. B., & Vinopal, K. (2023). Examining inequality in the time cost of waiting. *Nature Human Behaviour*. <https://doi.org/10.1038/s41562-023-01524-w>
- McCombes, S. (2019). *Descriptive research design | definition, methods and examples*. Scribbr. <https://www.scribbr.com/methodology/descriptive-research/>

- Murnawan, H. (2023). Analysis of the Effectiveness of Cashier Service with a Simulation of the Queue System. *Proceedings of the 4th International Conference on Advanced Engineering and Technology (ICATECH 2023)*, 97–102.
<https://www.scitepress.org/Papers/2023/121133/121133.pdf?>
- National Privacy Commission. (2012). *Republic Act 10173 - Data Privacy Act of 2012*. National Privacy Commission. <https://privacy.gov.ph/data-privacy-act/>
- Okon, J., & Akpoiroro, R. (2019). Socio-Economic Status and Satisfaction with Service Delivery among Students in Federal Universities in South Nigeria. *Advances in Social Sciences Research*, 2(4), 60–67.
<https://journals.scholarpublishing.org/index.php/ASSRJ/article/view/1062/>
- Paglinawan, A., Espina, E., & Prado, N. (2025). Student Satisfaction and the Quality Service Delivery of Cashier Section in Higher Education Institution. *Psychology and Education: A Multidisciplinary Journal*, 36(8), 848–853. <https://doi.org/10.70838/pemj.360801>,
- Reddy, G. R. P., & Gandham, N. T. R. (2026). The Role of Strategic Staffing in Achieving Organizational Goals and Performance Excellence. *International Journal of Data Science and IoT Management System*, 5(1), 196–201. <https://doi.org/10.64751/>
- Safrudin, Utami, S., & Nasrudin, A. (2025). Behind the Scenes of Learning: How Administration Drives Education. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 9(3), 932–946.
<https://doi.org/10.33650/al-tanzim.v9i3.11645>
- Sawale, H. V., & Shaikh, P. S. (2025). Digital Queue System: A Smart Solution for Public Services. *International Journal of Engineering Development and Research*, 13(1), 42–51. <https://rjwave.org/ijedr/viewpaperforall.php?paper=IJEDR2504137>
- Setiono, B. A., & Hidayat, S. (2022). Influence of service quality with the dimensions of reliability, responsiveness, assurance, empathy and tangibles on customer satisfaction. *International Journal of Economics, Business and Management Research*, 6(09), 330–341.
- Stankovska, G., Ziberi, F., & Dimitrovski, D. (2024). *Service Quality and Student Satisfaction in Higher Education*. Bulgarian Comparative Education Society; Bulgarian Comparative Education Society. Blvd Shipchenski prohod 69 A, 1574 Sofia, Bulgaria. e-mail: info@bces-conference.org; <http://www.bces-conference.org>.
- United Nations Development Programme. (n.d.). *What are the Sustainable Development Goals?* Retrieved from UNDP: <https://www.undp.org/sustainable-development-goals>
- Vilca-Cancho, J., Ramos, A. V.-C., Canseco-Mendoza, A. D., Ninaquispe-Soto, M., Coronado-Hernández, J. R., Riega-Virú, Y., & Quezada-Hidalgo, E. (2025). Enhancing Service Processes in a Convenience Store: Modelling and Simulation Approach in a in the Case of a Peruvian Store. *Procedia Computer Science*, 257, 1178–1183.
<https://doi.org/10.1016/j.procs.2025.03.157>

Flood-risk Resiliency: Framing Adaptive Blue-Green Architecture Solutions to Vulnerable Public Centered Facilities of Bacnotan

Victorio Romualdo A. Quijano*, Jolly Mae G. Jucar

Saint Louis College of San Fernando, La Union, Philippines

*Email : quijanov@slc-sflu.edu.ph

Abstract

Flooding is global, frequently enticed urban dense areas yielding magnanimous challenges. This often steered either by man-made or nature-induced phenomena covering kilometer vicinity premises. The lack of comprehensive urban planning established gap between ecology and the built-environment, and intensifies bridges of predicament relationship between 2 important issues – function and space. The extremities of flood in Bacnotan, La Union is one of the greatest interests to drive mindful riddle of intervening solutions. This study dealt with the contextual influence of flood, as a major problem of most constituents in Bacnotan, La Union. The volatile phenomena of flood made the lives of the residents' vulnerable to their social mobility that draws attention and arduous actions for impossible flood mitigation. Four objectives were established as research focus: First, pertains to the metaphorical responses of casualties on the utilization of public spaces, considering their opinions and perspectives; Second, are the flood-risk context issues on the astute understanding of nexus origin and flow patterns of flood, adherence to drainage's effectiveness and sustainable conditions; Third, is the selection of site proposal for a mitigation facility that served as panacea to the predicament of flood; and Fourth, by drafting the output solutions, converting into a transformative translated design, to where the blue-green architecture model was introduced. The study abets building codes, guidelines and legal frameworks of urban theories as external design preferences. The theory of blue -green architecture modelled the architecture of the proposal. Green-infrastructure theory landscaped its design while blue-infrastructure arms its water-driven solutions. Mixed method was used in the research, combining descriptive - quantitative methodology. The research design was utilized for gathering and collecting results throughout the Input-Process -Output routine. Remote Sensing via geographic information system (GIS) and Building Information Modelling (BIM) was used as tool in manipulating visual images, particular to flood-risk context data analysis and architecture modelling. Mapping data served as platform in the selection of the three (3) proposed sites. Results of data summarized the established focus of research and findings discoursed to discussion, aligning analytical outcomes to the fostered objectives. The study concludes all aspect of flood adversities and consequences that led to the design output. The final output translates the architecture model, adapting the clouded theory of blue-green architecture that entails entirely as conspicuous design of a flood mitigation conspiracy, unravelling state miseries, making public facilities useful and risk-free.

Keywords: Remote sensing; Geographic Information System; Building Information Modelling; Flood-risk context; Blue-green architecture

1. Introduction

Flooding has widespread impacts on communities worldwide, undermining long-term efforts toward sustainable development. The World Economic Forum had identified flood risk as an increasing threat of likelihood and impact. According to findings, human population across the globe is living in flood prone areas. Global assessment report described flooding, water-related hazards accounted 50% disasters and 45% deaths toll (UNDRR, 2025). Severe climate risk in Asia-Pacific region covered 70% of the global population vulnerable to sea level rise, and most affected by extreme weather events. Philippines ranked fourth worldwide among the most affected countries to climate change between 2000 - 2019. Thus, its occurrence caused irreversible effects on communities, economies, and ecosystems. (Global Climate Risk Index, 2021).

Filipinos often demonstrate resilience, which outgrown the underlying systemic issues, limiting effective disaster risk reduction efforts. This concern refers to the intensification of extreme hydrometeorological events due to climate change increasingly drives urban flooding worldwide (NASA, 2025). Global assessment report described flooding, water-related hazards accounted 50%

disasters and 45% deaths toll (UNDRR, 2025). Philippines ranked fourth worldwide among the most affected countries to climate change between 2000 - 2019. Thus, its occurrence caused irreversible effects on communities, economies, and ecosystems. (Global Climate Risk Index, 2021).

One of the inundation prone municipalities in the Province of La Union is Bacnotan, and the most flooding – susceptible town amongst offshore municipalities of circuit (PGLU, 2022). According to NAMRIA (*National Mapping and Resource Information Authority*) Bacnotan's flood susceptibility level increased due to rapid urbanization in low-lying areas, especially in the urban core. The insufficiency of flood control infrastructures became a critical issue, due to higher levels of flood susceptibility. Public and institutional facilities and essential community facilities are the most affected structures in the town (Bacnotan MPDO, 16-26).

To lessen the impact of flooding, (associated with Climate Change Adaptation in flood-vulnerable areas) Republic Act (RA) 10121, other known as "*Philippine Disaster Risk Reduction and Management Act of 2010*", and the Climate Change Adaptation-Disaster Risk and Reduction Management (CCA-DRRM) in the Local Government Unit. The Department of Interior and Local Government (DILG) set out potential feasibility of urban planning, revolving green infrastructure (permeability) and water management (sustainable drainage system). Green infrastructure, land use, and urban water management options bear a medium-to-high relations relative to Sustainable Development Goals 3, 6, 8, 9, 10, 11, and 13

The increasing flood susceptibility, as a result of expanding urban areas, inadequate flood control measures, and infrastructure development calls our attention to conduct a research of this kind, applying the possibility of adaptive, nature-based approach that bridges community's continuous utilization to public spaces, environmental restoration and urban resilience; As this studies may introduce architecture as final output, adherence probability target is to compromise the municipal development goals of Bacnotan, La Union, aiming to achieve a resilient and sustainable urban design.

Conceptual framework maps the direction of the study using the Input-Process-Output. The *Input Phase* are sets of documented data of flood-risk context; *Process phase* is the action of tools utilized subsequently aligned to the requirements from Input, through various sources; including architectural design studies per se, as the study guided by series of local planning guidelines and laws. Finally, the *Output Phase* introduce an architectural translated model of an Adaptive Blue-Green Public Facility design.

The Blue and Green Infrastructure (BGI) or blue-green architecture serves as the theoretical framework of the overall design parti in the creation of a model. A nature-based solutions and serve as foundation in the outcome of architectural translation under Ecosystem-related approaches within the NbS 'family' (IUCN 2016) and involve remote sensing, scale and position in drafting solutions (Kumareswaran & Jayasinghe, 2023)

2. Objectives

In general, the study aims to explore solutions to the issue of urban floods that merely affect community's mobilization and social activities to public facilities applying nature-based solutions that may lead direction to these specific objectives; (1) re-assess the condition of public facilities and its consequences to community's social activities, as determining factor for space requirement; (2) analyze data on flood-risk context for site selection and development; (3) identify potential sites for a viable location of a flood mitigation proposal, utilizing public spaces into a doable functional facility; and (4) synergizing blue and green frameworks as tool for the design of an architectural model.

3. Materials and Method

This study utilizes descriptive – quantitative approach. It describes the characteristics of a population using numerical data; uses measurable, objective-based and precise observations (<https://www.researchgate.net>) in the gathering results and carry draft of semi-structured interviews and surveys. Geo-spatial analysis was utilized in the site and mapping data. Geographic Information System (GIS) technology analyzes maps, detecting hazard-prone areas, and topographic features. Building Information Modeling (BIM) were used in the creation of a model, supported other

technology-based soft wares; the AutoCAD, SketchUp, Revit and Lumion. Secondary data includes local codes, guidelines, literature review, and precedent analysis.

Population survey target respondent consists of 85 participants for the quantitative survey; and 5 participants for the interview. Purposive and convenience sampling method was utilized in urban core participants; three (3) urban barangays for *Convenience* sampling and *Purposive sampling* directed to some LGU administrators, barangay officials and residents. Likert scale shall be used in evaluating the result of survey. Ethical standards rigorously observed in the manipulation and in the conduct of surveys and interviews, security of personal data, consent authority and confidentiality was fully implemented.

4. Results and Discussion

Various *Metaphorical Responses* present in this sub-section as a result in the conduct of research. Table 1 present the result on *Level of Vulnerability of Public spaces*. The result shows public space variables score a total of 4.39, giving a **high-vulnerable** result outcome. Institutional and educational facilities score the highest rating of very highly vulnerability equivalent, and rest of highly vulnerable results. The finding shows public spaces (*educational, institutional, civic infra-structure, etc.*) within town center are considered vulnerable to flood exposure.

Table 1: Level of Vulnerability in Public Facilities

Public Spaces	Weighted Mean	Descriptive Equivalent
<i>a. Institutional Facilities</i>	4.35	<i>Very Highly Vulnerable</i>
<i>b. Educational Facilities</i>	4.59	<i>Very Highly Vulnerable</i>
<i>c. Civic Infra-structure</i>	4.18	<i>Highly Vulnerable</i>
<i>d. Transportation & Network</i>	4.44	<i>Highly Vulnerable</i>
Total	4.39	Highly Vulnerable

Table 2 provide an assessment results on the *quality of public spaces utilization* based to public personal experiences. The result scores a total mean value of 2.53 (**Poor**). *Sociability and activity utilization* garnered **fair** and the most aggravated poor result falls to *accessibility and linkages*, and *comfort*. The results of findings show primary thoroughfares (*accessibility & linkages*) located at the town proper makes inaccessible during flood making insufficient mobility to people (*comfort*).

Table 2: Assessment on Quality results of Public Space Utilization

Public Space Quality Indicator	Weighted Mean	Descriptive Equivalent
<i>a. Sociability</i>	2.78	<i>Fair</i>
<i>b. Accessibility & Linkages</i>	1.82	<i>Poor</i>
<i>c. Comfort</i>	2.41	<i>Poor</i>
<i>d. Activity utilization</i>	3.13	<i>Fair</i>
Total	2.53	Poor

Additional set of survey conducted is to determine public space preferences based on *Project for Public Spaces* by Fred Kent (2016), aligned to the community for designing public spaces, sociability, access, linkages, comfort, image and use. **Figure 1** present a result of survey done in random selection from the three (3) urban barangays. The result justifies *Playground* as the most preferred public space with a score of 40. An open ground archery located at Bacnotan National High School and 2 open basketball courts are also highly recommended.

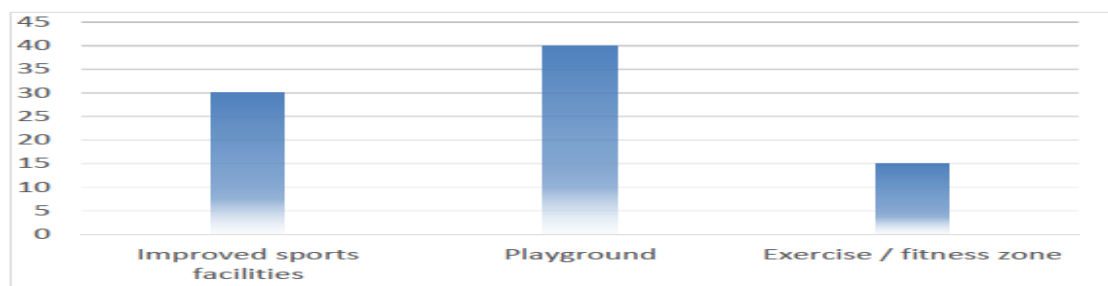


Figure 1. Result of Preferences to Open-ground Sport Facility

Figure 2 shows respondent's active learning preferences to public facility spaces. *Bookshop* and *School Garden extension* are the highest score preferences. Findings suggests the adoption of a multifunctional open space with alternative learning facility. Majority of personal perceptions and preferences inform a design that balances recreation, learning, amenities, and comfort. Therefore, the approach ensures the integration of both blue and green strategy frameworks to the current conditions of the place.

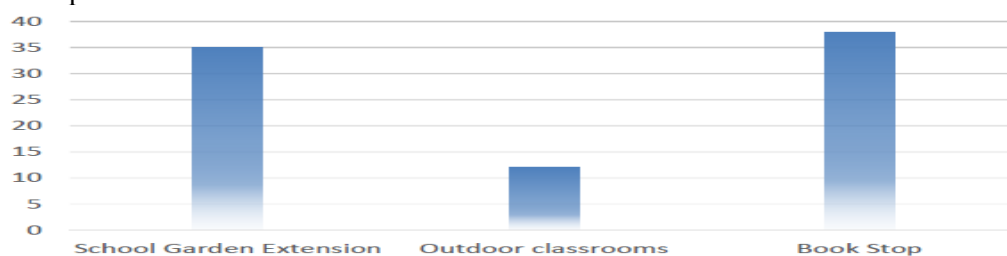


Figure 2. Result of Additional Public Space- Learning Venues as Preferences

Figure 3 present a result of suggested amenities. Out of 50 respondents, *Walkways Canopies* considered the most with 44 respondents. Road closure at the intersection of Guerrero and Dolores Street are made during daytime, prompting the use of alternative routes, allowing the users as pedestrian access to Town Plaza. The streets lack sheltering device which makes less convenient to users in terms of *comfort* (Table 2). The result of the findings suggests provision of alternative design solution to be integrated along the street considering comfort.

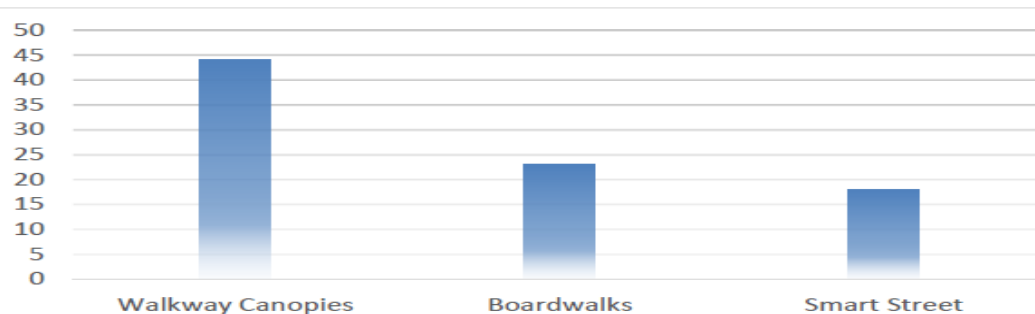


Figure 3. Result of Suggested Amenities

The following images supports the result of primary topics. *Figure 4* present a flood exposure event during super typhoon *Emong*. Primary streets like Consolacion, Dacanay, Dolores, and Guerero streets experienced a waist-level of flood (80 to 100 cm. depth), and extends around surrounding establishments. The *Municipal Disaster Risk and Reduction rescuers (MDRRMO)* used inflatable boat for service and rescue operations



Figure 4. Transport and Mobility scenery during flood event

Figure 5 outlines a map showing specific points of established “cause-and-effect” situations. The map described cases and identifies origin of flood emanated areas within the town center.

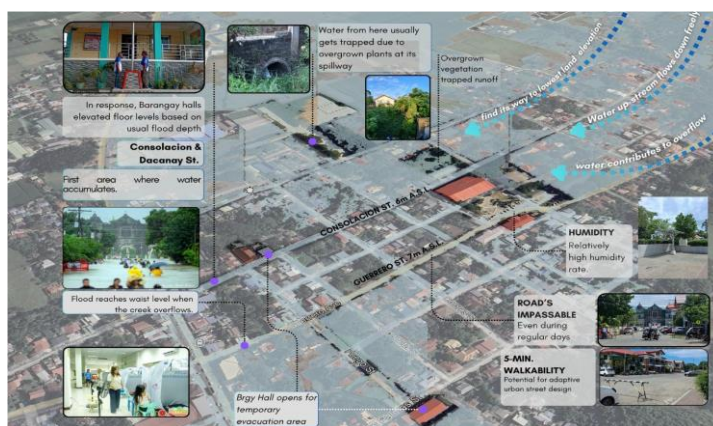


Figure 5. Post-typhoon “cause and effect” conditions

The following transcripts are result of interviews to concerned individuals with personal experiences to flood exposure;

Acting Municipal Engineer of Bacnotan highlighted that flooding in the town center consistently begins in low-lying areas as Engr. Rodel John Valmonte explained; “*the first area of the town that has been reached first by flood is along Población, at Consolacion and Dacanay Streets (schools of Bacnotan National High School and Central School), which produce extreme flood water from the existing marshland area*”. He emphasizes flood water arises mostly at the street intersections at Las Palmas streets along the commercial establishments at barangay Nagsimbaanan. Public spaces at Población suffers the most. Barangay Halls are the most mentioned damaged public facilities; “*these are the most functional public space in the town center with its elevated floor and served to accommodate residents during severe flood event*”. A major challenge mentioned was budget allocation for sustainable development. (Valmonte, R. J., personal communication, date retrieved: January 20, 2026).

As to flood-mitigation strategies, Engr. Valmonte (Municipal Planning and Development Office) mentioned common strategies of resident’s preparation for severe-storm-induced flooding. He said; “*infrastructures nearby flood-prone areas, elevated their houses at a minimum of 1 (one) meter above ground level*”. Flood accumulation usually due topographic and hydrological conditions. Other flood-mitigation strategy made and done was relogging of drainage canals.

Another reliable source, Mr. Romel Montipalco (LDRMO officer), identified programs to typhoon-induced flooding such as; (a) mandating a disaster and risk reduction activities by means of trainings for officers and local residents (b) develop capacity building programs for man-made hazards; and (c) community participation in planning with Disaster Risk and Reduction and other concerned agencies. One of the earliest implemented mitigation initiatives mentioned was the project “*kaar-rubak salaknibak*”. A Memorandum of Understanding (MoU) between owners of multi-storey building fostering affected citizens suffered severe cases of flood. He ends his statements by saying; “*we need efficient flood mitigation design for a sustainable and resilient project. together with balancing ecology and nature*”; that synchronized the purpose of the study.

Other participants in the conduct of interviews are students of Bacnotan National High and Central School, residing at the 3 urban barangays. They share thoughts and suggestion of recreational

Figure 7 present the Topographic Map of Bacnotan showing digital elevations. Finding shows the town center highlights site's potential locations for intervention. This gives an impression of direct relationship of blue -green architecture model as a framework (land & sea connection) for site development.

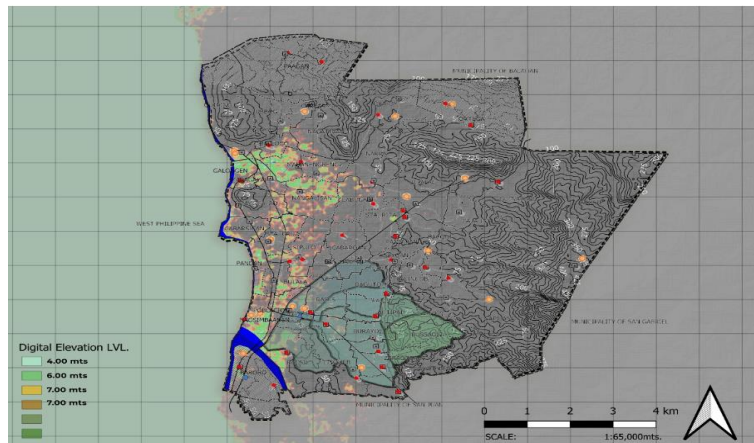
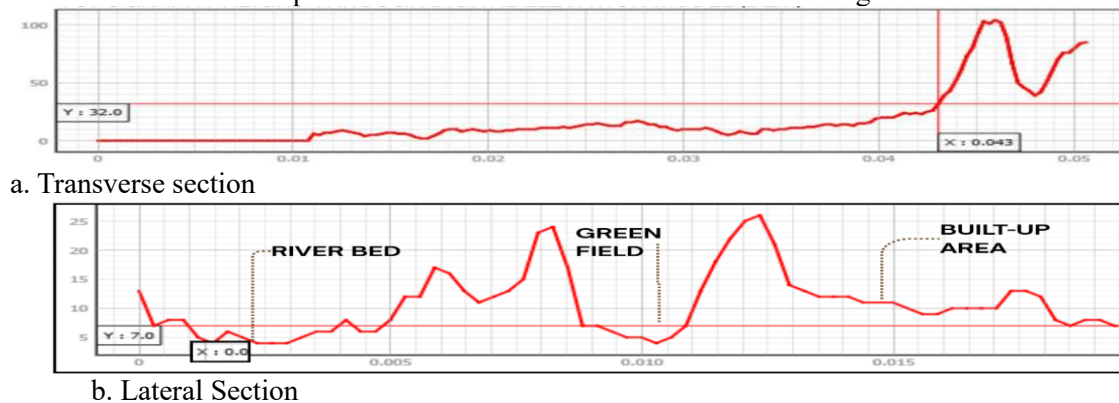


Figure 7. Topographic and Digital Elevation Map of Bacnotan

The land section presented in *Figure 8* provides supplemental data illustrating the longitudinal and cross-sectional profiles of *Figure 9* using Geographic Information System (GIS). As to directional pattern of the contour lines, the elevation profile indicates lower elevations correspond stream outlets. These depressions accumulate massive flood water during rainfall event.



a. Transverse section

b. Lateral Section

Figure 8. Contour elevation of Bacnotan's geo-physical character.

Figure 9 present the seven identified sub-catchments. Sub-catchments 1, 2, 3, and 4 are the barangays of Bagutot, Burayot, Busaoit, Zaragoza, and Agtipal, They are the sources of floodwaters to downstream sub-catchments 5, 6, and 7 (barangay Raois, Nagsimbaanan, and Población). Findings identified sub-catchments 6 and 5 are both in a low-lying area where the town center located. Catchments 5 and 6, covers built-up areas of 48%, agricultural areas of 38%, and vegetation of 8%. Población, located at catchment 6, has an elevation of 4 to 6 meters above sea level. Nagsimbaanan exhibits moderate to high elevations at 5 meters, while Barangay Raois and Poblacion have the lowest elevation at 4 meters.

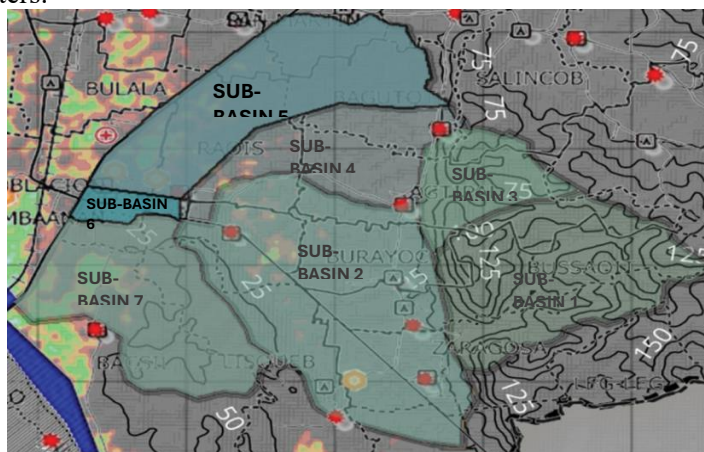
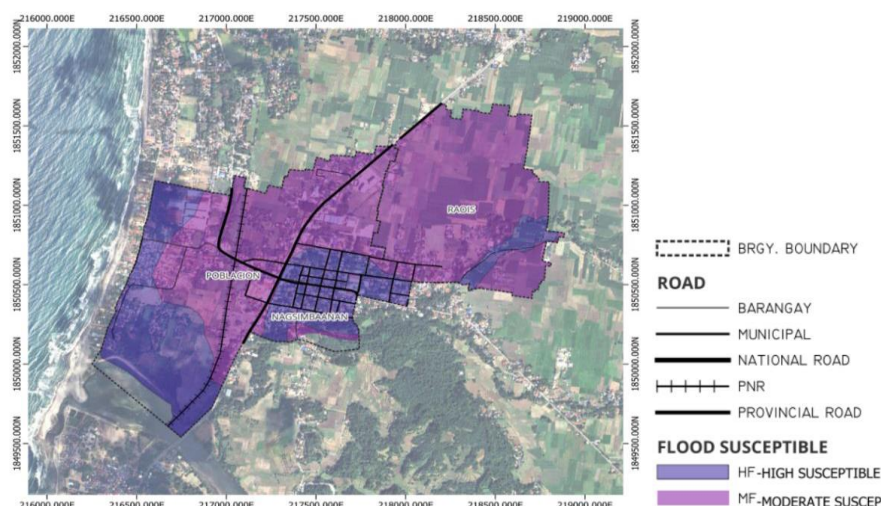


Figure 9. Flood Catchment Model of Bacnotan, La Union

Figure 10 present the hazard map of flood susceptible areas of Bacnotan's Town Center. High density of susceptible level is located in Poblacion. Considering Poblacion and Nagsimbaanan, both are under sub-catchment 6 where public open space and ground facilities located. A target location for the mitigating facility proposal.



source: Nationwide Operational Assessment of Hazards Map, NOAH

Figure 10. Hazard map of the CBD area of Bacnotan, MPDO-Bacnotan

Table 3 presented the topographic analysis and land use characteristic assessment of the 3 urban barangays, where 5, 6, and 7 sub catchments located. The content of the table identifies slope patterns and elevation levels that varies along the specified areas. Findings show relativity between topography and land use patterns within the identified sub-catchments. Sub-catchment 5 with gentle sloping terrain and supported with a mixed-use of all identified land uses. Sub-catchment 6, located at the lower elevation of a minimum of 4 meters, and also has predominantly built-up condition that is limiting infiltration. In contrast, sub-catchment 7 has a higher elevation range that sits commonly at paddy plains and moderately steeping land terrain. To conclude, low-lying areas indicates a greater flood accumulation.

Table 3. Topographic points and site land-use of the three (3) Barangays at Town Center of Bacnotan, La Union

Variables	Site Topography (Above Sea Level)	Existing Land Use (sq. m / %)
b. Sub-catchment 5 (Brgy. Raonis and Poblacion)	5 to 10 meters Gentle Slope 0-29.99 degrees	- Parks & Playgrounds: 28307.578sqm. or 0.46% - Institutional Facilities: 3284 or 0.05% - Roads & Bridges: 2122.539 sq. m. or 0.034% - Built-up area: 20% - Trees & Vegetation: 4% - Fields: 15% - Water: 50%
c. Sub-catchment 6 (Poblacion & Nagsimbaanan)	4 to 6 meters height elevation With a gentle slope of 0-29 degrees	
d. Sub-catchment 7 (Brgy. Nagsimbaanan)	5; 10; 15; 25; 30; 35; 40 meters With Moderately Gentle 0-59.99 degrees	

Table 4 present a summary of the hydrological run- off pattern. Findings show a 648.66-meter waterway runs along the residential area near and a perpendicular waterway of 1,086.91 meters crosses the streets of Poblacion and drain to the Baroro River. The frequent flooding attributed the crossflow of these two waterways, critically influence slow runoff to the terminal outflow (*transcript of interview: Engr. Rhodel Valmonte*). Water discharge from low-lying areas exacerbates the problem at sub-catchments 5 and 6.

Table 4. Hydrological Assessment of three (3) Sub catchment

Variables	Existing Site Infrastructures	Existing Flow and Outflow Points of Infrastructures	Flow Direction + Infrastructure Overlay
<i>b. Sub-catchment 5</i> (Brgy. Raois and Poblacion)	648.66-meter waterway along the settlements to the east of Bacnotan Municipal Health Office	It has existing waterway that measures 81.92 mts., connected to sub-catchment 6 waterway, but no discharge point nearby.	Limited outflow 818.81 mts. long waterway to reach the main discharge point at Barangay Bacsil
<i>c. Sub-catchment 6</i> (Poblacion & Nagsimbaanan)	818.81 meters length perpendicular to waterway from Poblacion	It has 736.89 mts. length of waterway connecting to sub-catchment 7, but no discharge point nearby.	Moderate outflow With a 736.89mts long waterway to reach the main discharge point at Barangay Bacsil
<i>d. Sub-catchment 7</i> (part of Nagsimbaanan)	268.10-meter waterway and it is connected to Barangay Bacsil waterway with 750.55 meters length	It has an outflow point at Baroro River, and connected with 1018.65 mts waterway along Barangays Bacsil, Nagsimbaanan, and Poblacion	Good Outflow The barangay covered by this sub-catchment has Direct discharge to Baroro River
Variables	Existing Site Infrastructures	Existing Flow and Outflow Points of Infrastructures	Flow Direction + Infrastructure Overlay
<i>b. Sub-catchment 5</i> (Brgy. Raois and Poblacion)	648.66-meter waterway along the settlements to the east of Bacnotan Municipal Health Office	It has existing waterway that measures 81.92 mts., connected to sub-catchment 6 waterway, but no discharge point nearby.	Limited outflow 818.81 mts. long waterway to reach the main discharge point at Barangay Bacsil

The discharge assessment provides a calculated volume of floodwater based on a 50-year projection, as presented in Table 5. The event experienced in Bacnotan during Typhoon Emong in 2025 served as the basis for these computations, providing a reference for stringent mitigating measures. Using the formula $\text{Volume} = (T_c \times 60 \text{ seconds}) \times Q$, sub-catchments 1, 2, and 3 has a total of 254,909 cubic meters. Sub-catchments 5, 6, and 7 are downstream areas. A combined volume of 35,574 cubic meters justifies for the design of a mitigation facility

Table 5: Flood Volume and Determination Discharge Computation

Indicators	Sub-Basin 5	Sub-basin 6
<i>a. Density (characteristics)</i>	Farm, low-lying area	Dense residential zone
<i>b. Catchment net area (sq.km)</i>	1,990.00	1940.0
<i>c. Time concentration -TC (mm/hr)</i>	35.504	41.347
<i>d. Flood Discharge -Q (cu.m)</i>	30.854	5.12
<i>e. Volume Discharge (cu.m.)</i>	65,726.42	12,701.79
<i>f. Run-off coefficient (based on land characteristics)</i>	0.15	0.40
<i>g. Total Volume (cu.m.)</i>	9,859	5,081
Total Volume (sub-basin 5 & 6):		14,940
Volume sub- basin catchment (site 1,2 &3):		254,909 cu.m.

Source: Japan International Construction Agency (march2022) on technical standards

Figure 11 present other results of computed volumes of flood water from 7 sub-catchment areas totaling 35, 5734 cubic meters. Sub-catchment basins 5 and 6 are the key sites. Micro-sites 1, 2, and 3 are the selected spots for adaptive flood mitigating infrastructures consisting the three typologies of public spaces: *open*, *facilities*, and *street*.

Table 6 present the result of Flood Dynamics in sub-catchments 5,6 & 7. The result of data

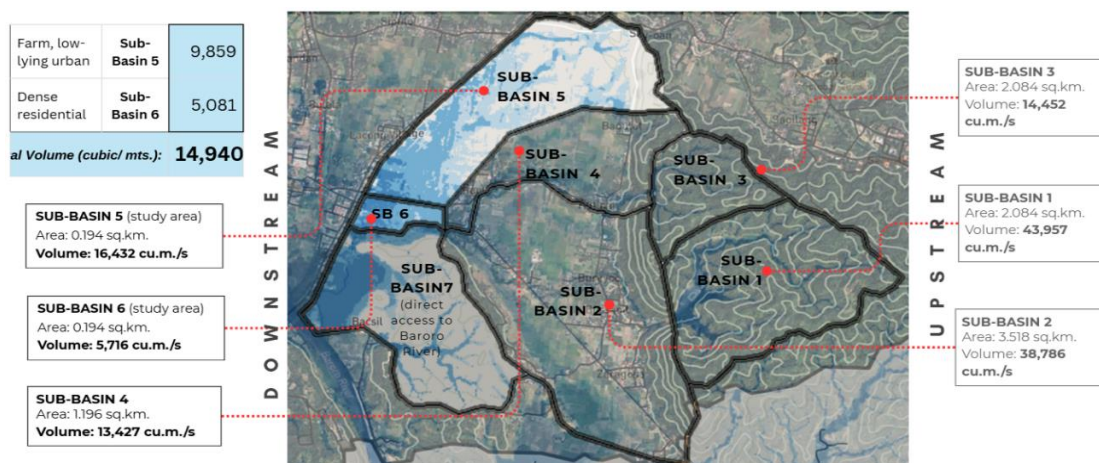


Figure 11. Calculated Volume of Sub-basin catchment areas (1,2,3,4,5,6 & 7) identified specific scale level of flood waters to years of projected return, span, durations, and vulnerability factor. As a result, sub-catchment 5 & 6 identifies the most inconsiderable location. Engr. Rhodel Valmonte describes the likelihood, duration, and community vulnerability of floods. Other mitigation programs appeared in interviews with Hon. Hernandez, Mr. Muntipalco, and Engr. Valmonte stresses the need for disaster management strategies.

Table 6. Flood Dynamics Assessment on Sub-catchment 5,6,7

Flood Descriptor	Sub-catchment 5 (Raois)	Sub-catchment 6 (Nagsibaran-Poblacion)	Sub-catchment 7 (Nagsibaran)
a. Rate rise	Minimum of 15cm to 100cm flood depth especially at Zone 1-3a & b along overflow waterways	Minimum of Knee level at 15cm to 50cm along overflow waterways	Minimum of Knee level at 50cm, esp. nearby Bacsil outlet and 150cm near upstream
b. Probabilities & Likelihood	Return Period Every 1-3 years Every 3-6 years Every 10-60 yrs	Annual Probability Every 1-3 years Every 3-6 years Every 10-60 yrs	Measure of Likelihood Frequent: 6 Moderately: 5 Occasional: 4
c. Duration	More or less than 3 to 6 hours long	Short to Moderate Less than 3 hours of flood duration	Short Less than 1 Hour and maximum of 3 hours
d. Vulnerability level	High Disruption	Moderate	Low-Moderate

This sub-section discusses condition of **Site proposals**. Table 7 present a summary of assessment of the flood-vulnerability to sub catchments 5, 6, and 7. The result of findings suggests **sub-catchments 5 & 6** are suitable for micro site location. Both catchments show rerouting potential of water run-off and infiltration permeability. These strengths make sub-catchments 5 and 6 highly suitable that support immediate need of flood mitigation management facility.

Table 7. Suitability Result for Macro-site selection of sub-catchments

Variables	Mean Score	Suitability Level Equivalent
1. Catchment 5: Barangay Raois and Poblacion		
a. Existing flow routes and discharge points	2.6	highly suitable
b. Potential infiltration and water discharge	1.8	moderately suitable
c. Existence site available land-use	3.0	highly suitable
d. Existence of Facilities	2.5	highly suitable
Total	2.4	highly suitable
1. Catchment 6: Barangay Nagsimbaanan		
a. Existing flow routes and discharge points	3.0	highly suitable
b. Potential infiltration and water discharge	2.8	highly suitable
c. Existence site available land-use	3.0	highly suitable
d. Existence of Facilities	2.6	highly suitable
Total	2.8	highly suitable
1. Catchment 7: Barangay Bacsil and Nagsimbaanan		
a. Existing flow routes and discharge points	2.0	moderately suitable
b. Potential infiltration and water discharge	0.8	Low suitable
c. Existence site available land-use	1.0	Low suitable
d. Existence of Facilities	2.4	highly suitable
Total	1.5	not suitable

Figure 12 identifies the three potential sites for flood intervention. **Site 1** is a flood-vulnerable open-ground archery facility of Bacnotan National High School, with 29,356.25 square meters in area, considered of high susceptibility level. **Site 2** is a 259.31 square meter privately owned commercial property seasonally used as fairground during town fiesta event. **Site 3** is an existing basketball court within a private school compound.

**Figure 12.** Map of 3- Site Proposal

This sub- section presents the architecture strategies of the study. The **blue-green architecture** frame entirely the design of the mitigating facilities as final output. Other urban and planning strategies area also taken into considerations as design guidance.

Strategy 1: Green Infrastructure infiltration technique has been considered as the ecological approach. *San Manuel Silt Loam* is the dominant type of soil that exist at the town center. It implies high water infiltration character as shown in Table 11.

Table 11. Infiltration Technique Selection based on Soil Type of Bacnotan, La Union

SOIL CHARACTERISTICS			
Characteristics	<i>Annam Clay Loam</i>	<i>San Manuel Silt Loam</i>	<i>Bolinao Clay</i>
Permeability	Moderate	Moderate	Poor
Runoff Potential/ Water Retention	Low-Med	High	High
Compact ability	Moderate	Moderate to high	High

The *Green Space Factor* approach assign different surface types, attaining factor of **5 (five)** using the formula;

$$GSF = \frac{(area A \times factor A) + (area B \times factor B) + (area C \times factor C) + etc.)}{total\ courtyard\ area}$$

Based to computed result, **Site 1** has the highest green space factor, attributed to its extensive vegetation, water surface, and permeable areas that enhances infiltration and ecological consideration. **Site 2** shows a lower green space factor of 1.62 due to limited vegetation. **Site 3** garnered the lowest result of 0.251 dominated mostly of impervious surfaces with minimal green infrastructure. These three sites indicates that there is a need to extend the permeable features in order to attain the green space factor of 5. A table summary of result shown in Table 12.

Table 12. Computed Result of Green Space values of vegetations, materials and flood water collection

Factor	Surface Type	Site 1:	893.17	Site 2:	187.18	Site 3:	1402
1	Vegetation on ground	1700.1	1700.1	80.76	80.76	236.09	236.09
0.7	Vegetation on beams: 0.20- & 0.80-meters soil depth	450	315	44.77	31.339	8.46	5.922
0.6	Vegetation on beams: > 0.80 & soil depth	120.15	72.09	-	-	-	-
1	Water surface	800.87	800.87	417.43	417.43	-	-
0.2	Collection and retention of stormwater	344.71	68.942		-	29.96	
0.2	Paved areas with joints			39.74		175.44	35.088
0	Sealed areas	2261.45	0	374.48	0	1020	0
0.4	Areas covered with gravel or sand	2487.23	994.892	89.35	35.74	186.74	74.696
	Sum		3951.89		565.269		351.8
Total:			4.42		3.02		0.251

This **Strategy 2 - Blue Infrastructure** approach includes surface, subsurface, and above-ground solutions. *Detention ponds* were integrated at selected sites, serving a dual purpose and as a detention basins designed to drain runoff water within 72 hours. These features effectively served as stormwater storage while providing recreational space. Blue Infrastructure in this sense is determined through its detention and retention functions as applied in adapting the existing public spaces on the three different sites. **Strategy 3** deals with **Hardscapes and Softscape** materials. According to *Urban Street Stormwater Guide* (NACTO, 2026) bioswales and rain gardens are highly compatible to the environment as guided by the guidelines of FMB-DENR (*Forest Management Bureau-Department of Environmental and Natural Resources*). Table 13 summarize a vegetation evaluation rating.

Table 13. Existing and Suitable Vegetation Specifications

Descriptor			Adaptability To:	Tolerance To:	
Name of Plant	Size & Form (Diameter)	Soil Type (to San Manuel Silt Loam)	Infra. Challenges	Heat Drought	Water logging
Existing Plants (On site)					
1.Manila Palm	4.6-7.6 m	Moderate	Low	High	Moderate
2.Bambusa Silver stripe	4.5-12 m	High	Moderate	High	High
3.Tamarindus Indica	12-30 m	High	Moderate	Moderate	High
4. Mango	15-30 m	High	Moderate	High	Moderate
5.RiverTamarin	10 m	High	High	Moderate	High
6.Talisay	3-9 m	High	Moderate	High	Moderate
7.Paper Tree	8 m	High	Moderate	High	Moderate
8. Molave Tree	8 meters	High	High	High (23-25m high)	
9.Acacia Tree	23-30 mts.	High	Moderate (30m high)	High	Moderate
10.Curtain Fig Tree	50 meters	Low	High	High	Moderate
11.Tangkal tree	15-35 meters	Moderate	Moderate	High	Moderate
Suitable Plants (Available Locally)					
12. Ficus Balette Tree	150 cm	High	Moderate	High	High
13.Vetiver Grass	200 cm	High	Moderate	High	High0.060 (cm/min)
14.NativeSedges	120 cm	High	Moderate	High	High
Bioswale Vegetations					
	Size (dia.)	Water logging	Form	Characteristics	
15.Pennisetum alopecoid	0.6–1.5 m	Moderate -High	Rounded & Compact	Ornamental flowers exist making it desirable and it is all around use for site landscaping.	
16.Wedelia	0.15–0.70 m	Moderate	Rounded & Compact	Flowering shrub; Easy to propagate	
17. Canna Indica/ Lily	0.6–1.5 m	High	Upright & Compact	Flowering shrub: appropriate to plant	

Table 14 highlighted the permeability performance of selected paving materials, emphasizing their suitability for stormwater management in flood-prone areas. Concrete pavement cutouts (CC) have moderate permeability. Application of permeable pavement is highly recommended.

Table 15: Permeable Pavement Materials

Material Specifications	Permeability	Permeability Rating	Remarks
Porous Asphalt (PC/PA)	900mm/hr.	18-22 %	High
Permeable Grid Pavers (PGP) (Nguyen, July 2022)	400 mm/hr. (No ponding / draining of water)	8-12 % surface permeability via joints	Fair
Pervious and Porous Pavers (PP) (Chen, March 2019)	600-8000 mm/hr.	15–25% void ratio	Low
Single-sized Aggregate (SA)	7000mm/hr.	30% to 40%	High
Concrete Pavement Cutouts (CC)	3600 mm/hr.		Fair

Strategy 4 describes the **Design Model (Macro-Concept)** through a conceptual diagram (Figure 13) and the **Architectural Solutions (Micro-Concept)** developed in response to key ecological and environmental factors identified in the macro-design transformation (Figure 14). This concept presents a targeted transformation focused on the specific design of infrastructures, with careful consideration of environmental impacts on public spaces adapted for flood catchment purposes. Additionally, the concept highlights Bacnotan's *One-Town-One-Product initiative*, showcasing the town's unique identity within the adapted public spaces for intervention as shown the derivation and transformation process.

Project Development of the proposed Adaptive Flood-Catchment Models integrates public facilities, open spaces and street. Public infrastructures across the three sites are classified as Parks, Recreation, and Entertainment (PRE). This classification guides project cost estimation by considering zone classification and occupancy type. The project development cost, as part of this project comprises a major capital investment including *lot acquisition, site development, utility systems, and building facilities*. The indirect cost, totaling ₱80,450,578.84, covers essential project overheads and support services. The VAT component is structured aligned to Official Development Assistance (ODA) arrangements through Japan International Cooperation Agency (JICA), wherein such funding is not subjected to the final withholding tax system (Section 114. Return and payment of Value-Added Tax). Total computed project cost reaches **₱333,439,820.00** representing a comprehensive investment framework supported by local and external funding sources.

Project Development Sources primarily aligned to the *Local Government Unit (LGU), National Agencies, and Non-Government Unit partners*. Strengthening funding base, the local government need to sought partnerships with other agencies aligned to disaster resilience and public infrastructure development. At the national level. Agencies such as the *Department of Public Works and Highways (DPWH)* working in coordination with the *Japan International Cooperation Agency (JICA)*, play a key role in supporting large-scale infrastructure initiatives through co-financing and technical assistance.

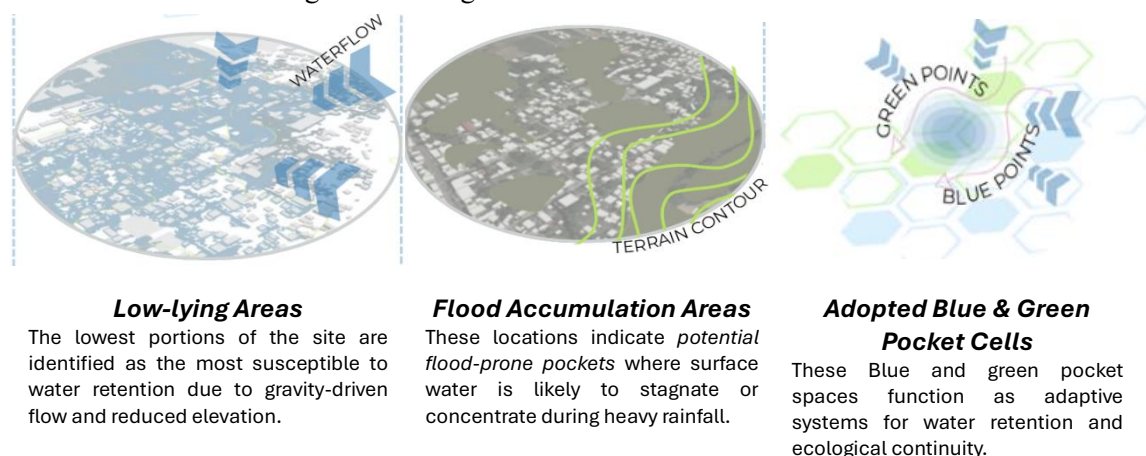


Figure 13. Macro Urban Planning Concept

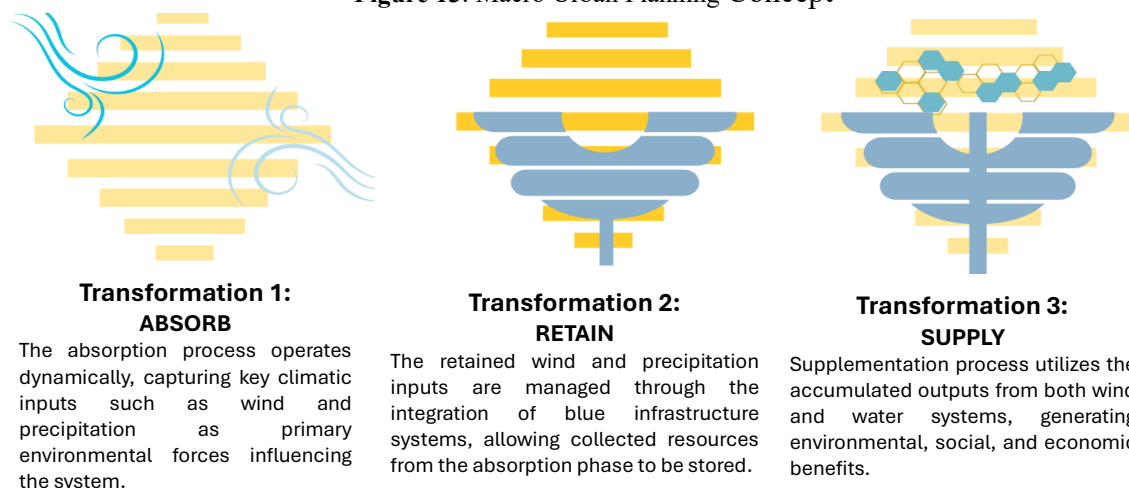


Figure 14. Micro Design Development Concept

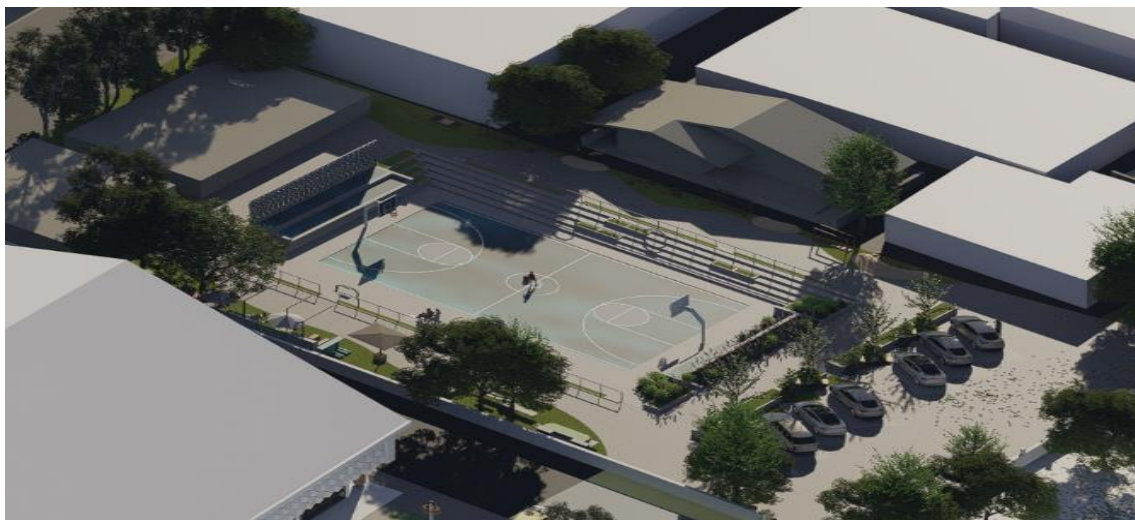
Architectural Translation



Site 2: Seasonal Fairground



Cooling Mist Pole Stand along streets



Site 3: Existing Basketball Court

5. Conclusion

The study values the objective of *Sustainable Development Goal 11* with core mission making cities and human settlements inclusive, safe, resilient, and sustainable. The integration of water and ecological management through a blue-green infrastructure approach of nature-based solution (NbS) grounded the capacity of public spaces to adapt on both natural process and built environment constraints.

Community as the primary user of urban and public infrastructure summarized their *metaphorical responses* to space solutions. Their involvement and participation are significant in designing the environment. The underlying *flood-risk* analysis identifies topographical and hydrological component. Remote sensing (QGIS instrument) discovered flood routes and led the selection of 3 (three) variation of public space interventions. (site and street scale). *Site selection process* arrived to 3 potential locations; (1) an existing sports facility, (2) a seasonal town fair area, and (3) the Diocesan School with basketball court. Nature-based solutions of Blue-green initiatives, Sustainable Urban Drainage Systems (SuDS) and Low-Impact Design (LID) were utilized in framing the design as *blue-green model*.

This study highlights the need for a comprehensive approach in terms of sustainable financial mechanism, research, policy and development. Ample funding and research for a climate-related infrastructure project must be taken into consideration. Ultimately, adaptive modelling of public spaces (public facilities, open spaces, and streets) emphasizes the need for urban strategic planning and regulatory alignment to ensure sustainability.

Acknowledgment

The authors sincerely express their heartfelt gratitude to the following individuals and local government offices, for sharing documents, knowledge, assistance and guidance throughout the odyssey of the study. To the office of Municipal Planning and Development of Bacnotan and to Engr. Michael Riddick Valmonte for lending mapping references and sharing knowledge in engineering and environmental studies of the Municipality of Bacnotan; to the office of Department of Environment and Natural Resources, for giving assistance in securing legal documents; and lastly, to the residents of Bacnotan who shared their experiences of thoughts on the consequences of flood. This study would not have made successful without sharing their time, perspectives and contributions, which led the researchers sublime to the spirit of the study.

References

- Agonafir, L., Lakhankar, T., Khanvilbardi, R., Krakauer, N., Radell, D., & Devineni, N. (2023). *A review of recent advances in urban flood research*. Retrieved August 06, 2023, from <https://www.sciencedirect.com/science/article/pii/S2468312423000093>
- Arruda, B. (2023). *Blue-Green Spaces and Human Well-Being* in Copenhagen. Retrieved November 20, 2025, from <https://storymaps.arcgis.com/stories/127e60516f434cbd8bcb67fa9f7768e7>
- Barsely E. (2019). *A Guide to Building & Community Design*. 66 Portland Place, London: Published by RIBA Publishing
- Berse, K. (2022). Regional: Advancing Inclusive and Resilient Urban Development Targeted at the Urban Poor Philippines: Urbanization Trends, Hazard Exposure and Sectoral Realities: *A Macro View of Philippine Cities* (Supplementary Report). Retrieved February 2022, from https://www.adb.org/sites/default/files/project-documents/51325/51325-001-tacr-en_5.pdf
- Cedo M., K.M. Smith, Ivo S., Ana M. (2017). *Blue Green Solutions A Systems Approach to Sustainable, Resilient, and Cost-Efficient Urban Development*. (9, 14). Retrieved January 25, 2026, from <https://www.researchgate.net/publication/315756004>

- Charles H., Harris Nicholas T., & Brown, K. D. (1998). *Standards for Landscape Architecture: Design and Construction Data* (Second Edition). New York: McGraw-Hill Publishing Company.
- Chikhi, F., Li, C., Ji, Q., & Zhou, X. (2023). *Review of Sponge City implementation in China: Performance and policy*. *Water Science and Technology*, 88(10), 2499.
- Gomes, R., Peres, L., de Oliveira, A., & Bezerra, M. (2021). The use of blue-green infrastructure as a multifunctional approach to watersheds with socio-environmental vulnerability.
- Crocetti, A., Nasplezes, R., & Moore, S. (2021). *Integrating Water Planning*. Retrieved September 30, 2025, from <https://www.mdpi.com/2673-4834/5/4/47>
- Department of Human Settlements and Urban Development (DHSUD). (2023). *Resilient Urban Design And Development Guidelines*. Retrieved February 10, 2026, from <https://dhsud.gov.ph/wpcontent/uploads/Publication/Guidebooks/Resilient%20Urban%20Design%20and%20Development%20Guidelines.pdf>
- DPWH Regional Office I. (2025). *Construction/Improvement of Public Infrastructures*. Retrieved February 10, 2026, from https://dpwh.gov.ph/dpwh/sites/default/files/webform/civil_works/advertisement/25a00443_plans.pdf
- Harris, E. P. (2023). *Introduction to Environmental Sciences and Sustainability*. Retrieved January 2026, from <https://pressbooks.uwf.edu/envrioscience/chapter/14-3-the-impacts-of-urban-sprawl/>
- Harris, E. P. (2023). *The impacts of urban sprawl*. *Introduction to Environmental Sciences and Sustainability*. University of West Florida Pressbooks.
- Mannucci, S., Rosso, F., D'Amico, A., Bernardini, G., & Morganti, M. (2022). *Flood resilience and adaptation in the built environment*. *Sustainability*, 14(7), Article 4096. <https://doi.org/10.3390/su1407409>
- Simona Mannucci, Federica Rosso, Alessandro D'Amico, Gabriele Bernardini, and Michele Morganti, (March 2022). *Flood Resilience and Adaptation in the Built Environment*. Retrieved from: <https://www.mdpi.com/2071-1050/14/7/4096#B18-sustainability-14-04096>
- UN-Habitat Philippines. (2022). *Path to Climate Resiliency: Case Studies of Cities in the Philippines*. Retrieved April 19, 2026, from <https://unhabitat.org/path-to-climate-resiliency-case-studies-of-cities-in-the-philippines>
- Well & Ludwig (July 2021). *Development of an Integrated Design Strategy for Blue-Green Architecture*. Retrieved: September 12, 2025, from: https://www.researchgate.net/publication/353332306_Development_of_an_Integrated_Design_Strategy_for_Blue-Green_Architectures

A Phenomenological Exploration on the Views of LGB's Love Needs in Polyamorous Relationships

Beatrice Nasharette Bambao*, Jeska Gayle S. Macabitas, Johanna Lie B. Marzo, Jonelle A. Neverida,
Samantha Ysabelle C. Cabanban

Saint Louis College, San Fernando, La Union, Philippines

*Email : beatrisbambao@gmail.com

Abstract

Despite increasing visibility of non-traditional relationships, societal norms still marginalize polyamorous dynamics among LGB individuals. This study explores how lesbian, gay, and bisexual individuals view their experiences of fulfillment of love needs—intimacy, passion, and commitment—within polyamorous relationships. Using Interpretative Phenomenological Analysis (IPA), three participants shared narratives highlighting polyamory as both a liberating and collaborative journey. Findings reveal that intimacy is intentionally cultivated through collaborative emotional labor, passion is expressed through emotional freedom and affectionate behavior, while commitment is grounded in flexible, mutually agreed boundaries. Participants challenge traditional notions of exclusivity, viewing love as fluid, non-possessive, and rooted in mutual growth. The study advocates for broader recognition of diverse relationship structures and affirms that meaningful, secure connections are possible outside monogamy. It also underscores the need for inclusive policies and social understanding to support LGB individuals navigating polyamorous relationships.

Keywords: polyamorous relationship, intimacy, passion, commitment, LGB

1. Introduction

Love is a powerful and multifaceted force that shapes human connections and gives meaning to interpersonal relationships. Among its many forms, romantic relationships are considered some of the most significant social bonds, contributing to companionship, affection, security, and overall well-being (Campbell & Stanton, 2019; Bode & Kuschnick, 2021; August et al., 2023). Although love is a universal human experience, the ways individuals experience, express, and define it are influenced by personal expectations, cultural contexts, and relational needs (Scaria & Manjudmar, 2023).

Attitudes toward romantic relationships are likewise shaped by broader social norms, including gender, race, ethnicity, and social class (Salas, 2020). Traditionally, romantic relationships have been framed within heterosexual and monogamous ideals, influencing how relationships outside these norms are perceived (Thorne et al., 2020). Despite these dominant narratives, research suggests that the fundamental experience of love is largely similar across sexual orientations (Adihartono, 2023).

As societal understandings of relationships continue to evolve, alternative relationship structures such as polyamory have gained increasing recognition. Polyamory refers to engaging in multiple consensual romantic relationships simultaneously with the knowledge and consent of all partners involved (Katz & Graham, 2020). Although situated within the broader framework of consensual non-monogamy (CNM), polyamory specifically emphasizes multiple emotionally meaningful romantic relationships rather than solely the absence of exclusivity. Grounded in honesty, non-possessiveness, and mutual responsibility, polyamory challenges conventional assumptions that romantic commitment must be exclusive (Gruebnaue, 2021). Interest in polyamory has also been found to be higher among younger adults and individuals identifying as lesbian, gay, or bisexual (Moors et al., 2021). While these relationships provide opportunities for diverse emotional connections, they also require intentional communication, emotional maturity, and collaborative negotiation to sustain multiple relational commitments (Campos, 2023).

Relationship quality is commonly understood through the dimensions of intimacy, passion, and commitment, all of which contribute significantly to relationship satisfaction (Nabila & Gunawan, 2023). Intimacy involves emotional closeness and trust, commitment reflects the intention to maintain and invest

in the relationship, while passion encompasses physical attraction and emotional intensity (Cassepp-Borges et al., 2023; Gomez-Lopez et al., 2019; Tobore, 2020). Within polyamorous relationships, these dimensions may be experienced differently, as intimacy, commitment, and passion can be distributed across multiple partners through negotiated agreements, open communication, and mutually established boundaries, thereby challenging conventional notions of exclusivity (Pallotta-Chiarolli, 2020).

This study is guided by Queer Theory, introduced by Teresa de Lauretis (1990) and further developed by Butler (1990), which challenges the assumption that heterosexuality and monogamy represent universal or normative forms of intimate relationships. Rather than viewing identities and relationships as fixed, Queer Theory conceptualizes them as socially constructed and continuously negotiated within cultural and institutional contexts. Accordingly, the theory provides an appropriate interpretive lens for examining how lesbian, gay, and bisexual individuals construct meanings of intimacy, passion, commitment, and relational fulfillment within polyamorous relationships.

2. Objectives

While previous studies have examined romantic relationships, consensual non-monogamy, and polyamory, comparatively fewer have explored how sexual orientation and polyamorous relationship structures interact to shape intimacy, passion, and commitment among lesbian, gay, and bisexual (LGB) individuals (Moors et al., 2021; Man, 2023). Addressing this gap, the present study examines how LGB individuals perceive and construct these dimensions of love within polyamorous relationships. Furthermore, this research supports the United Nations Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality) by promoting greater understanding of diverse sexual orientations and relationship structures, and SDG 10 (Reduced Inequalities) by advocating for inclusivity and representation of LGBTQIA+ individuals.

3. Materials and Methods

This study employed a qualitative approach using Interpretative Phenomenological Analysis (IPA) to explore the lived experiences of lesbian, gay, and bisexual (LGB) individuals in polyamorous relationships. IPA is well-suited for examining how individuals make sense of their lived experiences through the researcher's interpretative lens, reflecting the process of double hermeneutics (Larkin et al., 2019; Ganesan & Gopalakrishnan, 2024). This approach enabled an in-depth exploration of participants' perceptions of intimacy, passion, and commitment within polyamorous relationships (Oranga & Matere, 2023).

Three (3) participants were purposively selected, consistent with recommendations for undergraduate IPA studies (Clarke, 2010). Eligible participants were self-identified lesbian, gay, or bisexual Filipino adults (22 years old and above) from Luzon who had experienced or were currently in a polyamorous relationship. Participants must have previously been in a monogamous relationship for at least one year before transitioning to a polyamorous relationship that had likewise lasted at least one year. The study focused on individuals with two or more romantic partners to ensure consistency with the operational definition of polyamory and to situate the findings within the Philippine sociocultural context.

Data were collected through semi-structured one-on-one online interviews conducted via Google Meet or Zoom, lasting approximately 40–60 minutes. With participants' informed consent, interviews were audio-recorded and transcribed verbatim. An interview guide consisting of four open-ended questions explored participants' (1) transition to polyamory, (2) experiences of emotional connection and trust, (3) physical and romantic attraction, and (4) understanding of commitment. Follow-up probes were used to clarify and deepen participants' responses.

Interview transcripts were analyzed inductively following the IPA procedures outlined by Smith and Fieldsend (2021). Researchers repeatedly reviewed each transcript, generated initial descriptive codes, identified emergent themes within individual cases, and compared patterns across participants. Through iterative analysis, four superordinate themes and one overarching existential motif were developed to capture the shared meanings embedded in participants' lived experiences.

Consistent with the idiographic nature of IPA, the study prioritized depth over breadth by utilizing a small, homogeneous sample (Smith & Fieldsend, 2021). Trustworthiness was established following Lincoln and Guba's (1985) criteria. Credibility was enhanced through prolonged engagement with the data, dependability through systematic documentation of coding and theme development, confirmability through collaborative analysis among the research team, and transferability through rich descriptions of participants and their experiences.

4. Results

This section presents the findings obtained from analyzing the data gathered from the participants, alongside the LGB individuals' perception of their experiences within polyamorous relationships in fulfilling love needs. Table 2 presents the superordinate themes along with their corresponding subthemes and the overarching main theme derived from participants' responses. It highlights four key constructs that reflect the perceptions of the LGB community.

Table 2 Summary Table of Main Themes, Superordinate Themes, and Unifying Existential Motif

Main Themes	Superordinate themes	Unifying Existential Motif
	A Journey of Thoughtful Engagement	An Unconventional Bond: A Perceived Collaboration and Liberation in Pursuit of Love Needs
	A Foundation for Intentional Emotional Collaboration	
	A Morphosis of Compersion	
Evolution of Understanding Commitment within Liberated Relationship Dynamics	A Quest For An Eclectic Practice of Commitment	
An Impetus for Enduring Belongingness		

Superordinate Theme 1: A Journey of Thoughtful Engagement

This theme reflects how participants intentionally explored their relational needs, emotional connections, and preferred relationship dynamics through polyamory. Rather than adhering to conventional expectations, they described greater freedom in expressing affection, defining relationships according to mutual understanding, and prioritizing emotional compatibility over traditional romantic labels. Maxie described how polyamory allowed her to redefine physical affection beyond conventional romantic expectations:

"I would be the type to want to be physically intimate with friends... my partners understand that... I was only able to explore that when I was in the polyamorous relationship, and I find that it's something that I enjoy." (Maxie, 22, lesbian)

She further explained that polyamory helped her discover the kinds of emotional relationships she valued:

"I found out that I like having someone that I can talk to about my current partner... someone who understands exactly how that feels... someone I can share with." (Maxie, 22, lesbian)

Similarly, Angel emphasized that compatibility extended beyond attraction and required shared relationship values:

"I usually don't date people who are looking for monogamous relationships... they're gonna think I'm cheating on them when I've already told them I don't do it that way." (Angel, 36, gay)

Participants also expressed preference for defining relationships through mutual agreements rather than conventional labels.

"...being a relationship anarchist works for me... I don't care what type of relationship we have as long as we're committed to it." (Angel, 36, gay)

Together, these narratives illustrate how participants actively explored relationship structures that aligned with their personal values, emphasizing flexibility, compatibility, and intentional expressions of intimacy.

Superordinate Theme 2: A Foundation for Intentional Emotional Collaboration

This superordinate theme reflects the deliberate emotional work required to sustain polyamorous relationships. Participants described emotional collaboration as an ongoing process of communication, transparency, and shared responsibility in managing multiple emotional connections. While emotionally demanding, these practices were viewed as essential in maintaining trust, relationship stability, and mutual understanding. Participants emphasized that involving multiple partners required greater communication than monogamous relationships. Khianna described how additional partners created opportunities for mutual understanding and conflict resolution:

"Having the fact that there is another person involved, there's much more communication to go around... if I don't understand something, maybe the other one can help me understand. It's like there's another pair of eyes to look at the relationship." (Khianna, 31, bisexual male)

Similarly, Maxie recognized that emotional labor became increasingly important as the number of partners increased. She emphasized that communication should not only occur between herself and each partner but also among partners themselves:

"I realized that emotional stuff really do matter to me more than I thought... I want partners who are openly communicative and I want them to be able to talk to each other too... being with one person alone is a lot of work, so if there's another person involved, that's even more work." (Maxie, 22, lesbian)

Beyond communication, participants regarded transparency as fundamental to fostering trust and emotional security. Angel explained that openly expressing thoughts and emotions prevented misunderstandings and strengthened relationship stability:

"In polyamorous relationships, openness is important... when you're unsure, communicate it... with much more open communication, trust really gets built... when I learned to be open in polyamorous relationships, that became my practice because it's really more effective in maintaining the relationship."

Participants also demonstrated that transparency extended to communicating changes in personal needs and boundaries. Angel described openly discussing periods of asexuality with his partners to ensure that expectations remained clear and no one experienced emotional harm:

“If I'm at that point where I'm asexual, I tell them... ‘We can have sex, but you have to know I'm not going to respond as you normally expect.’ I'm enjoying the time with you, just not the act itself... I time my actions based on where I am so no one gets hurt.” (Angel, 36, gay)

Together, these narratives illustrate that emotional collaboration in polyamorous relationships extends beyond communication alone. Participants viewed transparency, emotional accountability, and the willingness to negotiate individual needs as essential practices for sustaining multiple intimate relationships. Although this emotional labor was often described as demanding, they perceived it as a necessary foundation for maintaining trust, emotional security, and long-term relational stability.

Superordinate Theme 3: A Morphosis of Compersion

This superordinate theme reflects participants' transformation from possessiveness and exclusivity, often rooted in previous monogamous relationships, toward compersion—the experience of finding happiness in a partner's happiness with another person. Participants described this shift as an intentional process of unlearning jealousy and embracing trust, autonomy, and emotional freedom within their relationships. Angel reflected on how exploring polyamory challenged his previous understanding of love and helped him move away from possessiveness:

“Noong monogamous pa ako, I would always be obsessive and possessive when it comes to my relationships. And then I kind of unlearned it when I was exploring polyamory kasi I realized na if I tell them that I want to be free... why would I stop them from doing that? ... If my partner says, ‘This guy is cute,’ I'd even tell them, ‘Sige, go. Meet him.’” (Angel, 36, gay)

For Angel, granting his partners the same freedom he desired became a way of expressing trust and respect rather than control. His experience illustrates how polyamory encouraged a shift from exclusivity toward mutual autonomy, allowing love to be expressed without possessiveness. Similarly, Khianna described compersion as an emotional experience that directly contrasts with jealousy:

“It's not as much of a problem yung pagiging jealous. Kasi in polyamorous relationships, there's this thing called compersion where you feel happy about the other person. When this other person experiences happiness with another person, I feel happy din. Parang the opposite of jealousy.” (Khianna, 31, bisexual male)

Rather than perceiving a partner's affection for another person as a threat, participants viewed it as an opportunity to celebrate their partners' happiness. This emotional transformation represented a gradual reorientation of how love, trust, and commitment were understood within their relationships.

Collectively, these narratives demonstrate that compersion was not an automatic emotional response but a process developed through self-reflection, communication, and intentional emotional growth. Participants described this transformation as central to fulfilling their love needs, allowing them to replace possessiveness with trust, shared happiness, and greater relational freedom.

Superordinate Theme 4: A Quest for an Eclectic Practice of Commitment

This superordinate theme reflects participants' diverse understandings and practices of commitment within polyamorous relationships. Rather than viewing commitment as exclusive devotion to a single partner, participants described it as a negotiated process grounded in mutual agreements, transparency, emotional connection, and shared responsibility.

Evolution of Understanding Commitment within Liberated Relationship Dynamics. This subtheme captures participants' evolving understanding of commitment beyond traditional monogamous expectations. Commitment was perceived not as exclusivity but as a mutually negotiated agreement sustained through honesty, communication, and emotional connection. Angel described how his understanding of commitment had broadened through his experience with polyamory:

“I guess commitment generally has become broader for me. Kasi it's not limited to just romantic partners na.” Angel, 36, gay)

He further emphasized that commitment is established through mutual agreement and transparency from the beginning of the relationship:

“I'm gonna commit to you as long as you commit to me... full transparency from the start.” (Angel, 36, gay)

Rather than requiring grand gestures, Angel viewed commitment as something maintained through consistent communication, attraction, and emotional connection.

“It doesn't take much. As long as we're good, we communicate frequently, and there's still connection and attraction between us, that's already enough.” (Angel, 36, gay)

These narratives illustrate that participants perceived commitment as an evolving and negotiated process, sustained through reciprocal trust and shared understanding rather than traditional expectations of exclusivity.

An Impetus for Enduring Belongingness. The second subtheme reflects participants' belief that maintaining relationships among all partners contributes to long-term stability and a shared sense of belonging. Commitment extended beyond individual relationships to include caring for the well-being of the relationship network as a whole. Khianna explained that maintaining multiple relationships strengthened his motivation to preserve them over time:

“Maintaining those two people together... it motivated me to stay in the relationship because I didn't want one relationship to affect the other.” (Khianna, 31, bisexual male)

He also described how shared experiences strengthened the bond among all partners:

“We went out a lot... there's more love to go around. I get to bond with them and they get to bond with each other, and that's helping with the longevity of the relationship.” (Khianna, 31, bisexual male)

These accounts demonstrate that participants viewed commitment as a collective responsibility. Fostering meaningful relationships among all partners through mutual effort, shared experiences, and emotional investment contributed to relationship stability and a lasting sense of belonging.

Final Theme: An Unconventional Bond: A Perceived Collaboration and Liberation in Pursuit of Love Needs

The final theme reflects that LGB individuals in polyamorous relationships see their experiences as valid and authentic, even as they break from traditional norms. It emphasizes collaboration, transparency, and a sense of liberation, showcasing how partners work together to fulfill their love needs in areas such as emotional support, physical affection, social connections, boundary management, and personal growth.

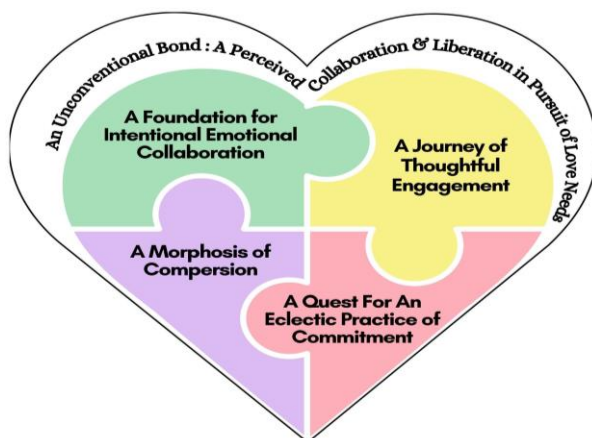


Figure 1. Experiences of Fulfilling Love Needs within Polyamorous Relationships as An Unconventional Bond: A Perceived Collaboration & Liberation in Pursuit of Love Needs Model

Figure 1 illustrates how LGB individuals perceive the fulfillment of their love needs within polyamorous relationships. The heart-shaped puzzle symbolizes their lived experiences, with each colored cluster representing one of the four superordinate themes: A Journey of Thoughtful Engagement (yellow), A Foundation for Intentional Emotional Collaboration (green), A Morphosis of Compersion (purple), and A Quest for an Eclectic Practice of Commitment (pink). At the center is the overarching theme, "An Unconventional Bond: A Perceived Collaboration and Liberation in Pursuit of Love Needs," reflecting participants' view of polyamorous relationships as collaborative and liberating spaces for fulfilling emotional and relational needs. The interlocking puzzle pieces illustrate how these interconnected experiences collectively shape a meaningful understanding of love through emotional connection, self-discovery, and mutual growth.

5. Discussion

This study explored the perspectives of lesbian, gay, and bisexual (LGB) individuals regarding the fulfillment of their love needs within polyamorous relationships. Through Interpretative Phenomenological Analysis, one overarching theme supported by four superordinate themes emerged, reflecting participants' experiences of intimacy, passion, commitment, and relational fulfillment.

The findings were interpreted through Queer Theory, which views identities and relationships as socially constructed rather than confined to heteronormative and mononormative expectations (de Lauretis, 1990; Butler, 1990). Rather than endorsing polyamory, Queer Theory provides a framework for understanding how LGB individuals construct meaningful relationships outside conventional relational norms. Accordingly, the overarching theme, "An Unconventional Bond: A Perceived Collaboration and Liberation in Pursuit of Love Needs," reflects participants' perceptions that polyamorous relationships are valid, collaborative, and meaningful ways of fulfilling emotional and relational needs.

The findings further suggest that polyamorous relationships provide participants with opportunities to intentionally explore and define their relational needs beyond traditional expectations of exclusivity. Participants described greater freedom in expressing affection, intimacy, and emotional connection while emphasizing compatibility, mutual understanding, and intentional partner selection. These findings are consistent with previous research showing that consensually non-monogamous individuals often pursue relationships for diverse motivations, including personal growth, self-exploration, and emotional fulfillment (Kelberga & Martinsone, 2021; Rodrigues, 2024). Participants also emphasized the value of communicating openly with multiple partners, allowing them to receive different forms of emotional support and validation, consistent with studies highlighting emotional communication as a defining characteristic of polyamorous relationships (Timmermans & Courtois, 2021). Likewise, participants' endorsement of relationship structures based on personal agreements rather than traditional labels reflects principles of relationship anarchy and the growing acceptance of consensual non-monogamy among sexual minorities (Camargo et al., 2021; Hille et al., 2024).

Despite these perceived benefits, participants also acknowledged that polyamory requires considerable emotional investment. Consistent with previous studies, participants described emotional labor as an ongoing process involving transparency, communication, negotiation, emotional regulation, and continuous support for multiple partners (Man, 2023; Castro et al., 2022). While these practices strengthened trust and relational security, they also created emotional strain, particularly when balancing multiple emotional needs simultaneously. Similar findings have been reported by Moors et al. (2021), who noted that communication overload and emotional complexity often present challenges for individuals engaged in polyamorous relationships. These findings suggest that successful polyamory relies not only on openness but also on emotional maturity, compatibility, and sustained collaborative effort.

Beyond maintaining relationships, participants viewed emotional collaboration as an avenue for personal development. Managing multiple relationships encouraged greater self-awareness, empathy, honesty, and emotional regulation, supporting previous findings that polyamorous relationships can facilitate interpersonal growth and emotional competence (Scaria & Manjundar, 2023). Likewise, Grunt-Mejer and Chańska (2020) observed that although polyamory is often evaluated through mononormative assumptions, it may foster emotional resilience, communication skills, and healthier approaches to jealousy and boundary-setting.

At the same time, participants recognized that polyamory may not be suitable for everyone. Consistent with Moors et al. (2021), they acknowledged that possessiveness, jealousy, and difficulty sharing emotional intimacy can create challenges that require substantial self-reflection and emotional regulation. Rather than eliminating these emotions, participants described learning to manage them through trust, communication, and the gradual development of compersion—experiencing happiness in a partner's joy with others. This transformation from possessiveness toward autonomy and mutual respect aligns with previous findings that consensually non-monogamous relationships encourage self-growth, emotional security, and broader understandings of love beyond exclusivity (Kelberga & Martinsone, 2021; Castro et al., 2022).

Participants also demonstrated that commitment within polyamorous relationships is understood differently from traditional monogamous models. Rather than being defined by exclusivity, commitment was viewed as mutual agreement, transparency, and shared responsibility among partners. These findings support Castro et al. (2022), who argued that commitment in polyamory is grounded in multiple honest, nurturing, and equitable relationships, as well as Carlström and Andersson (2019), who emphasized that relationships outside monogamous frameworks are negotiated according to the needs and values of those involved. Similarly, Braida et al. (2023) suggested that traditional models such as Sternberg's Triangular Theory of Love do not fully capture how intimacy, passion, and commitment interact within consensually non-monogamous relationships. Participants likewise described these dimensions as fluid, negotiated, and distributed across multiple relationships.

Although some participants perceived maintaining polyamorous relationships as relatively uncomplicated, others emphasized the importance of shared effort, quality time, and equal investment among partners. These findings reflect previous research suggesting that successful polyamorous relationships rely on mutual responsibility, clearly negotiated boundaries, and meaningful attention to each partner despite the absence of hierarchical relationship structures (Grunt-Mejer & Chańska, 2020; Hnatkovičová & Bianchi, 2022).

Overall, the findings expand current understandings of intimacy, passion, and commitment beyond traditional monogamous frameworks by demonstrating that meaningful, secure, and fulfilling relationships may also exist within consensually non-monogamous contexts. The study highlights the importance of recognizing diverse expressions of love and provides implications for mental health professionals, educators, and relationship counselors in adopting more inclusive and affirming approaches toward diverse relationship structures. Furthermore, the findings suggest that existing theories of romantic love, including Sternberg's Triangular Theory of Love, may benefit from broader conceptualizations that acknowledge love as a dynamic, negotiated, and multidirectional process.

Finally, the study contributes to the United Nations Sustainable Development Goals, particularly SDG 5 (Gender Equality) and SDG 10 (Reduced Inequalities), by promoting recognition of diverse gender identities, sexual orientations, and relationship structures. By encouraging inclusive practices and reducing stigma toward LGB individuals engaged in consensual non-monogamy, the findings support broader efforts to foster equality, respect for diversity, and inclusive social institutions.

6. Conclusion

This study encourages a conversation about the various ways love, intimacy, and commitment are expressed among Lesbian, Gay, and Bisexual (LGB) individuals involved in polyamorous relationships. It emphasizes that different motivations for seeking multiple connections lead to distinct experiences, offering valuable insights into the cooperative aspects of meeting emotional needs within these relationships. Findings indicate that participants experience profound liberation and fulfillment, emphasizing the importance of trust, communication, and emotional labor in nurturing relational intimacy. The study underscores that fulfilling love needs in polyamorous relationships is not merely an individual endeavor but a collective process that challenges traditional norms. Researchers recommend future studies explore a broader range of relationship structures and include perspectives from various demographic groups within the LGB community. Additionally, examining the experiences of individuals who do not engage in polyamory or who navigate non-traditional relationship dynamics will provide a more comprehensive understanding of modern intimacy. Furthermore, investigating the implications of these findings within different cultural contexts can enhance our grasp of how love and connection are experienced across diverse settings. By fostering awareness and inclusivity, this research contributes to the ongoing discourse on the validity of non-monogamous relationships and the need for supportive frameworks that honor all expressions of love.

References

- Adihartono, W. (2023). What is love? Love from sociological perspectives and queer love in Indonesia. *Simulacra*, 6(2), 209–220. <https://doi.org/10.21107/sml.v6i2.22122>
- American Psychological Association. (2017). *Ethical principles of psychologists and code of conduct*. American Psychological Association. <https://www.apa.org/ethics/code>
- August, K. J., Wismar, A., & Markey, C. N. (2023). Marriage, romantic relationships, and health. *Elsevier EBooks*, 359–368. <https://doi.org/10.1016/b978-0-323-91497-0.00026-6>
- Bisht, R. (2024). What is purposive sampling? Methods, techniques, and examples | researcher.life. *Researcher.Life*. <https://researcher.life/blog/article/what-is-purposive-sampling-methods-techniques-and-examples/>
- Bode, A. & Kushnick, G. (2021). Proximate and ultimate perspectives on romantic love. *Frontiers in Psychology*, 12(573123). <https://doi.org/10.3389/fpsyg.2021.573123>
- Campbell, L. & Stanton, S. C. (2019). Adult attachment and trust in romantic relationships. *Current Opinion in Psychology*, 25, 148–151. <https://doi.org/10.1016/j.copsyc.2018.08.004>
- Campos, R. (2023). Demystifying the structure of multiple partners: Exploring the relationship dynamics of polyamory in the Philippines. *International Journal of Advanced Multidisciplinary Studies*. <https://www.ijams-bbp.net/archive/vol-3-issue-6june/demystifying-the-structure-of-multiple-partners-exploring-the-relationship-dynamics-of-polyamory-in-the-philippines/>
- Carlström, C., & Andersson, C. (2019). Living outside protocol: Polyamorous orientations, bodies, and queer temporalities. *Sexuality & Culture*, 24(2), 441–463. <https://doi.org/10.1007/s12119-019-09621-7>
- Cassepp-Borges, V., Gonzales, J. E., Frazier, A., & Ferrer, E. (2023). Love and relationship satisfaction as a function of romantic relationship stages. *Trends in Psychology*. <https://doi.org/10.1007/s43076-023-00333-4>
- Castro, D. A., Remigio, J. A., & Manguiat, G. C. (2022). Love thy neighbour: Exploring the experience of individuals in polyamorous relationship. *Antorcha*, 7(1).

- Chen, Y., Xia, M., & Dunne, S. (2024). Romantic love is not only “romantic”: A grounded theory study on love in romantic relationships. *The Journal of Psychology*, 1–20. <https://doi.org/10.1080/00223980.2024.2305442>
- Da Silva Nascimento, L., & Steinbruch, F. K. (2019). “The interviews were transcribed”, but how? Reflections on management research. *RAUSP Management Journal*, 54(4), 413–429. <https://doi.org/10.1108/rausp-05-2019-0092>
- Ganesan, N. & Gopalakrishnan, B. (2024). Community case studies: An interpretative phenomenological analysis on sexual abuse in urban Chennai. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1352066>
- Gómez-López, M., Viejo, C., & Ortega-Ruiz, R. (2019). Well-being and romantic relationships: A systematic review in adolescence and emerging adulthood. *International Journal of Environmental Research and Public Health*, 16(13), 2415. <https://doi.org/10.3390/ijerph16132415>
- Gruebnaue, K. (2021). Polyamory: A study of love multiplied. *Open Access Journal of Addiction and Psychology*, 4(2). <https://doi.org/10.33552/oajap.2021.04.000585>
- Hnatkovičová, D. & Bianchi, G. (2022). Model of motivations for engaging in polyamorous relationships. *Sexologies*, 31(3), 184–194. <https://doi.org/10.1016/j.sexol.2022.03.003>
- Katz, M. I. L. & Graham, J. R. (2020). Building competence in practice with the polyamorous community: A scoping review. *Social Work*, 65(2), 188–196. <https://doi.org/10.1093/sw/swaa011>
- Kelberga, A. & Martinsone, B. (2021). Differences in motivation to engage in sexual activity between people in monogamous and non-monogamous committed relationships. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.753460>
- Kelberga, A. & Martinsone, B. (2022). Motivation of non-monogamous adults to engage in sex with their different partners. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.961949>
- Larkin, M., Shaw, R., & Flowers, P. (2019). Multiperspectival designs and processes in interpretative phenomenological analysis research. *Qualitative Research in Psychology*, 16(2), 182–198. <https://doi.org/10.1080/14780887.2018.1540655>
- Leite, Â., Costa, A., Ribeiro, B., Fonseca, C., Ribeiro, I., Mesquita, J., & Ribeiro, S. (2023). Being female and in a romantic relationship enhances the association between satisfaction with love life and capacity to love. *International Journal of Environmental Research and Public Health (Online)*, 20(23), 7108–7108. <https://doi.org/10.3390/ijerph20237108>
- Li, Y., Zhou, D., Dai, Y., & Zhang, J. (2022). Gender differences in the association between sexual orientation and risky sexual behavior among college students with sexual experience in Sichuan Province, Chinese. *Sexual Medicine*, 10(5), 100547. <https://doi.org/10.1016/j.esxm.2022.100547>
- Lincoln, Y. & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage.
- Love, B., Vetere, A., & Davis, P. (2020). Should interpretative phenomenological analysis (IPA) be used with focus groups? Navigating the bumpy road of “iterative loops,” idiographic journeys, and “phenomenological bridges.” *International Journal of Qualitative Methods*, 19(1), 160940692092160. <https://doi.org/10.1177/1609406920921600>
- Lyu, J., Shen, X., & Hesketh, T. (2020). Sexual knowledge, attitudes, and behaviours among undergraduate students in China—Implications for sex education. *International Journal of Environmental Research and Public Health*, 17(18), 6716. <https://doi.org/10.3390/ijerph17186716>
- Man, J. (2023). Exploring polyamorous relationship experiences of lesbian, gay, bisexual, and pansexual individuals. *VCU Scholars Compass*. <https://scholarscompass.vcu.edu/etd/7429/>
- Mengzhen, L., Berezina, E., & Benjamin, J. (2024). Insights into young adults’ views on long-term and short-term romantic relationships in the United Kingdom. *Sexuality & Culture*, 28(4), 1407–1423. <https://doi.org/10.1007/s12119-023-10183-y>
- Moors, A. C., Gesselman, A. N., & Garcia, J. R. (2021). Desire, familiarity, and engagement in polyamory: Results from a national sample of single adults in the United States. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.619640>

- Müller, A., Daskilewicz, K., Kabwe, M. L., Mmolai-Chalmers, A., Morroni, C., Muparamoto, N., Muula, A. S., Odira, V., & Zimba, M. (2021). Experience of and factors associated with violence against sexual and gender minorities in nine African countries: A cross-sectional study. *BMC Public Health*, 21(1). <https://doi.org/10.1186/s12889-021-10314-w>
- Nabila, V. & Gunawan, M. (2023). The relationship between the triangular theory of love by Sternberg and romantic relationship satisfaction in the emerging adulthood. *European Journal of Psychological Research*, 10(1). <https://www.idpublications.org/wp-content/uploads/2023/12/Full-Paper-The-Relationship-Between-The-Triangular-Theory-Of-Love-By-Sternberg-And-Romantic-Relationship-Satisfaction.pdf>
- Oranga, J. & Matere, A. (2023). Qualitative research: Essence, types and advantages. *OALib*, 10(12), 1–9. <https://doi.org/10.4236/oalib.1111001>
- Parker, C., Scott, S., & Geddes, A. (2019). Snowball sampling. *SAGE Research Methods Foundations*, 1(1). <https://eprints.glos.ac.uk/6781/>
- Pallotta-Chiarolli, M. (2020). Mental health for sexual and gender minority polyamorous and consensually non-monogamous individuals. *Oxford University Press EBooks*, 369–379. <https://doi.org/10.1093/oxfordhb/9780190067991.013.33>
- Clarke, V. (2010). Review of the book “Interpretative Phenomenological Analysis: Theory, Method and Research”. *ResearchGate*; *SAGE*. https://www.researchgate.net/publication/269930318_Review_of_the_book_Interpretative_Phenomenological_Analysis_Theory_Method_and_Research
- Salas, J. (2020). The evolution of love: The meaning of romantic love in contemporary society. *Senior Theses*. https://digitalcommons.linfield.edu/soanstud_theses/13
- Smith, J. A. & Fieldsend, M. (2021). Interpretative phenomenological analysis. *Qualitative Research in Psychology: Expanding Perspectives in Methodology and Design (2nd Ed.)*, 2, 147–166. <https://doi.org/10.1037/0000252-008>
- Thomeer, M. B., Umberson, D., & Reczek, C. (2020). The gender-as-relational approach for theorizing about romantic relationships of sexual and gender minority mid- to later-life adults. *Journal of Family Theory & Review*, 12(2), 220–237. <https://doi.org/10.1111/jftr.12368>
- Thorne, S. R., Hegarty, P., & Hepper, E. G. (2020). Love is heterosexual-by-default: Cultural heterosexism in default prototypes of romantic love. *British Journal of Social Psychology*, 60(2). <https://doi.org/10.1111/bjso.12422>
- Tobore, T. O. (2020). Towards a comprehensive theory of love: The quadruple theory. *Frontiers in Psychology*, 11(862). <https://doi.org/10.3389/fpsyg.2020.00862>

Psychometric Evaluation of the Cross-Cultural Competence Scale: Factor Structure and Invariance Among Filipino Pre-service Teachers

Jhaynee Lou P.^{*}, Tudayan-Del Moral

Saint Louis College, City of San Fernando, La Union, Philippine

*Email : tudayanjl@slc-sflu.edu.ph

Abstract

Valid and reliable instruments are essential in preparing pre-service teachers to effectively navigate culturally diverse classrooms. This study examined the psychometric properties of the Cross-Cultural Competence Scale (CCCS) among Filipino pre-service teachers. Using confirmatory factor analysis (CFA) on data gathered from 386 fourth-year pre-service teachers in Region I, Philippines, the findings provide preliminary support for the two-factor structure of the CCCS, comprising Attitudes Toward Culturally Diverse Students and Cultural Knowledge and Teaching Flexibility. The results demonstrated satisfactory factorial validity, internal consistency, and convergent validity. Discriminant validity was partially supported, with the heterotrait–monotrait ratio (HTMT) criterion met but the Fornell–Larcker criterion not fully satisfied. Measurement invariance testing across elementary and secondary pre-service teachers supported configural, metric, and scalar invariance, suggesting that the CCCS measures cross-cultural competence with reasonable consistency across both levels of teaching. Further analysis provided initial support for a hierarchical representation of cross-cultural competence, with two dimensions loading strongly onto a second-order construct. These findings suggest that the CCCS shows promise as a psychometrically sound instrument for measuring cross-cultural competence in teacher education. However, the results should be interpreted with caution, given the reliance on self-reported data and the sample's regional scope. The scale may provide practical value for program evaluation, curriculum development, and institutional efforts to prepare culturally responsive pre-service teachers.

Keywords: confirmatory factor analysis; cross-cultural competence; measurement invariance; pre-service teachers; scale validation

1. Introduction

The growing internationalization of education has further accentuated the need for teachers who can effectively interact with culturally diverse students. With the increasing mobility of people across the globe and the rise of multicultural classrooms, teacher education programs are increasingly being called upon to foster skills such as intercultural understanding, appreciation of diversity, and empathy. The Global Citizenship Education (GCE) Working Group of the United Nations (2023) emphasizes that these competencies are critical for students' participation in an increasingly interconnected world. In this scenario, cross-cultural competence has come to be recognized as a key outcome of teacher education.

Cross-cultural competence enables teachers to interact effectively and adaptively across diverse educational settings. It has been shown to foster a positive classroom environment conducive to engagement, equity, and democracy (Hamdan & Coloma, 2022). Cross-cultural competence also enables teachers to support students' learning and socio-emotional development (Savina, Fulton, & Beaton, 2025). It has also been shown to positively influence students' academic achievement and teachers' instructional performance (Ailauova et al., 2024; Mengxue, Yicheng, & Ziqiang, 2025). In multicultural educational settings, teachers are therefore expected not only to have cultural knowledge but also display flexible teaching practices and culturally responsive dispositions.

Institutional and leadership factors also influence the development of cross-cultural competence in teacher education. Teacher education programs are responsible for ensuring that pre-service teachers are equipped with culturally relevant content and practices to incorporate into their teaching (Nganga & Kambutu, 2024). In this regard, educational leadership is critical to maintaining culturally responsive

teaching through self-awareness, professional preparation, and community engagement (Khalifa, Gooden, & Davis, 2016). If achieved, empirical evidence suggests that investments in teachers' cultural, social, and emotional competencies will positively affect student confidence, engagement, and school climate (Willis, 2021; Lozano, 2025).

Despite its acknowledged value, cross-cultural competence is still unevenly developed in teacher education programs. Research studies conducted in various settings have found that preservice teachers are more linguistically than culturally prepared, making them less effective in culturally diverse classrooms (Halpern et al., 2025). Likewise, a lack of cultural competence has been found to contribute to reduced teaching effectiveness of preservice teachers with culturally diverse students (Qadhi, Yousef, & Abu-Shawish, 2021). These issues are especially pressing for marginalized groups of students, such as Indigenous students, who continue to have curricula designed without sufficient cultural sensitivity (Nganga & Kambutu, 2024).

In the Philippines, cultural diversity is very much ingrained in the country's educational system. The Commission on Higher Education (CHED) requires pre-service teachers not only to have content knowledge and teaching skills but also to possess socio-cultural, historical, and philosophical knowledge that will enable them to become culturally responsive teachers (CMO Nos. 74-82, s. 2017). Empirical research in the Philippines has found that pre-service teachers tend to have positive attitudes toward cultural responsiveness, but there remain gaps in curriculum development, instructional implementation, and inclusive classroom management (Biana, Javier, Jr., & Jabar, 2021; Caingcoy et al., 2022). Some regional efforts, such as online multicultural sensitivity training, have been promising but are still in their infancy, with limited scope and reach (Ruales et al., 2020).

Globally and locally, there has been a call for more structured and intentional approaches to developing cross-cultural competence in teacher education (Villegas & Lucas, 2002; Santoro & Forghani-Arani, 2014; Gay, 2018). At the forefront of these developments is the need for valid and reliable assessment tools to systematically evaluate the readiness of pre-service teachers for culturally responsive teaching (Mariyono, 2024). Nevertheless, there is a lack of empirical research on the cross-cultural competence of Filipino pre-service teachers, and the current measures are often adapted from non-educational or international sources, such as healthcare studies or research on LGBTQ+ sensitivity (Balachandran, Karuveetil, & Janakiram, 2022; de Torres et al., 2023; Salinda, 2025).

To fill this research gap, Tudayan, Ogoy, and Pangngay (2024) developed the Cross-Cultural Competence Scale (CCCS) for pre-service teachers in the Philippines and found that the CCCS has a two-factor structure using exploratory factor analysis. Nevertheless, confirmatory validation and tests of cross-group equivalence were not performed due to sample size constraints. Building on this important starting point, the current study seeks to further validate the CCCS using confirmatory factor analysis and tests of measurement invariance.

Conceptual Framework

Cross-cultural competence is generally defined as the skills that help people be effective in different cultural settings (Rodman, 2015). It involves knowledge of self and others, skills in interpretation and interaction, and attitudes that help value different beliefs and behaviors (Byram, 1997). Seelye (1993) clarified that the process of developing cross-cultural competence aims to build understanding, effective performance, and attitudes that support effective intercultural communication. In cross-cultural psychology, it is viewed as context-dependent yet generalizable across domains such as education, healthcare, diplomacy, and business (Chui et al., 2013).

Cross-cultural competence is viewed as a multidimensional construct by different researchers. Johnson et al. (2006) defined it as an integrated body of knowledge, skills, and personal qualities that help in effective interaction with people from different cultures. Deardorff's (2006) Delphi study further clarified that intercultural competence is the ability to communicate effectively and appropriately across cultures, and that the construct is grounded in attitudes that help develop knowledge and skills. Chen and Starosta (1997, 1999, 2000) also conceptualized the construct as having affective (sensitivity), cognitive (awareness), and behavioral (skills) components.

Several frameworks have been developed to operationalize these dimensions. Byram's (1997) Model of Intercultural Communicative Competence (ICC), for instance, comprises five components: attitudes, knowledge, skills of interpreting and relating, skills of discovery and interaction, and critical cultural awareness. While widely applied, this model was developed primarily for foreign language teaching contexts and does not fully address the broader pedagogical competencies required of culturally responsive teachers across all subject areas. Bennett's (1986) Developmental Model of Intercultural Sensitivity (DMIS) offers another perspective, describing a progression from ethnocentric orientations, marked by denial and minimization of difference, toward ethnorelative orientations, characterized by acceptance and adaptation. Although developmentally informative, it was created as a framework to explain people's reactions to cultural differences. In contrast, Deardorff's (2006) Delphi study offers a more process-oriented alternative, defining intercultural competence as the ability to communicate effectively and appropriately across cultures. Importantly, Deardorff's model positions attitudes as explicit prerequisites for developing knowledge and skills, a sequential logic that maps more directly onto the realities of multi-subject teacher preparation and scale development.

In teacher education, this multidimensional perspective aligns with the holistic nature of learning. Bloom's Revised Taxonomy positions learning outcomes in terms of cognitive, psychomotor, and affective objectives (Anderson & Krathwohl, 2001). The cognitive domain encompasses understanding cultural knowledge and global perspectives, while the psychomotor domain involves performing culturally responsive behaviors and teaching practices. The affective domain includes attitudes, values, and dispositions such as openness, empathy, and respect for diversity. From this perspective, cross-cultural competence is a holistic educational outcome that integrates knowledge, attitudes, and pedagogical flexibility and can be empirically measured and validated.

Theoretical Framework

The establishment of cross-cultural competence in pre-service teachers is theoretically supported by constructivist and experiential learning theories. Constructivist theory, based on the ideas of Piaget (1977) and Vygotsky (1978), asserts that learners actively construct knowledge through experience and social interaction. Constructivist theory, when applied to cross-cultural competence, explains how pre-service teachers develop cultural knowledge through dialogue, reflection, and exposure to alternative perspectives.

Experiential Learning Theory, as outlined by Kolb (1984), further explains this process by proposing that learning occurs in a cycle progressing from concrete experience through reflective observation, abstract conceptualization, and active experimentation. In the context of teacher education, the practicum and field experiences offer pre-service teachers' authentic opportunities to engage with cultural diversity, reflect on their own assumptions, and experiment with culturally responsive practices in actual classroom settings. Such experiences facilitate the integration of cognitive understanding, affective dispositions, and adaptive teaching practices.

2. Objectives

The present study aimed to further examine the psychometric properties of the Cross-Cultural Competence Scale (CCCS) among Filipino pre-service teachers. Specifically, the following research questions guided the study:

1. Does the two-factor structure of the CCCS demonstrate acceptable factorial validity among fourth-year pre-service teachers in Region I, Philippines?
2. Do the CCCS and its subscales demonstrate adequate convergent and discriminant validity?
3. Is the factor structure of the CCCS measurement invariant across elementary and secondary pre-service teachers?

3. Materials and methods

Research Design

The research design used in this study was a factor-analytic design. This aimed to determine the factor structure and dimensionality of a cross-cultural competence scale developed for pre-service teachers. The research design was a confirmatory factor analysis (CFA) conducted using statistical modeling of response patterns.

Participants

This study involved 386 pre-service teachers who were enrolled in teacher education institutions in Region I, Philippines. These tertiary-level students were pursuing bachelor's degrees in various programs, including Secondary Education (with majors in English, Mathematics, Science, Social Studies, Values Education, and Filipino), Physical Education, Technology and Livelihood Education, Culture and Arts Education, Elementary Education, Special Needs Education, and Early Childhood Education. There are 136 (35.23%) pre-service teachers at the secondary level and 250 (64.77%) at the elementary level. The study specifically targeted fourth-year students, as they had completed their professional and specialization courses and had undergone field studies and practicum. These academic and practical experiences were considered to have equipped them with the knowledge, skills, and attitudes necessary to respond meaningfully to the survey. Moreover, the expansion of the study's locale aligned with the recommendations of Tudayan et al. (2024).

To determine the adequacy of the sample size for CFA, an a priori power analysis was conducted. Following the Root Mean Square Error of Approximation (RMSEA) power analysis framework outlined by MacCallum, Browne, and Sugawara (1996), the minimum sample size was calculated based on the model's degrees of freedom (df). It yielded $df = 208$ for the proposed two-factor model comprising 22 observed variables with no cross-loadings. Using a standard Test of Close Fit (H_0 : RMSEA ≤ 0.05 versus H_a : RMSEA = 0.08), with a significance level of 0.05 and a desired statistical power of 0.95, the power calculation indicated that a minimum sample size of 119 participants is required to confidently detect close model fit (Preacher & Coffman, 2006). Thus, the sample of 386 pre-service teachers met the minimum required sample size.

Data Measure

The integration of Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001) with the established goals and definitions of cross-cultural competence serves as the conceptual foundation for the Cross-Cultural Competence Scale (CCCS) for pre-service teachers. The principal instruments from which the CCCS items were adapted and modified include the Cultural Intelligence Scale (CQS) developed by Van Dyne et al. (2015), the Cross-Cultural Competence Inventory (CCCI) developed by Ross et al. (2009), and the Scale of Ethnocultural Empathy developed by Wang et al. (2003). The items were contextualized for teacher education to ensure accurate assessment of pre-service teachers' cross-cultural competence.

In the first study, Tudayan et al. (2024) employed an EFA that yielded a two-factor structure comprising 22 items. The first factor is labeled "attitudes toward culturally diverse students," while the second is labeled "cultural knowledge and teaching flexibility." Both of which have 11 items. The Cronbach's alpha coefficients of 0.954 and 0.944 for the two factors, respectively, indicate excellent internal consistency.

The two-factor structure corresponds to the study's framework. According to Deardorff (2006), the knowledge and skills aspect of intercultural competence is preceded by necessary attitudes. The researcher stressed that attitudes are prerequisites for effective intercultural learning and interaction. The framework proposed by Deardorff aligns with the concurrent development of knowledge and skills, starting with attitudinal readiness.

Data Collection

Prior to data collection, the study protocol (Protocol Number: 2425-226-FAC) was reviewed and approved by the researchers' Institutional Research Ethics Committee, and ethics clearance was obtained. The researchers administered the Cross-Cultural Competence Scale (CCCS) to a diverse sample of pre-

service teachers enrolled in seven teacher education programs. Participants were recruited through formal coordination with the chancellors or presidents, deans, or department heads of the participating colleges and universities. The survey was distributed in both printed and online formats to ensure accessibility and accommodate institutional preferences. Data collection took place toward the end of the participants' practice teaching, following the completion of their key practicum experiences. This timing ensured that respondents had sufficient exposure to diverse classroom settings and teaching practices, enabling them to provide informed and authentic responses.

Informed consent was obtained from all participants, with a clear explanation of the study's purpose, the voluntary nature of participation, and the procedures involved. The consent form also emphasized participants' right to decline or withdraw from the study at any point without penalty. All collected data were anonymized and stored securely to maintain confidentiality and ensure compliance with data protection standards. No personally identifiable information was gathered, and access to the dataset was limited to the research team. Participants were encouraged to ask questions and were provided with contact information for any follow-up inquiries or concerns regarding the study. To minimize the risk of common method bias at the procedural level, participants were assured of the anonymity and confidentiality of their responses, and participation was entirely voluntary (Podsakoff et al., 2003).

Data Analysis

Prior to the main analyses, a series of data screening and diagnostic procedures were conducted to ensure the tenability of assumptions required for structural equation modeling (SEM). Descriptive statistics, including means, standard deviations, skewness, kurtosis, and minimum and maximum values, were computed. Items with mean scores at the scale endpoints (i.e., $M = 1$ or $M = 5$) were flagged for potential deletion, as extreme means can attenuate inter-item correlations and compromise scale reliability (Clark & Watson, 1995; DeVellis & Thorpe, 2018). Univariate normality was evaluated using skewness and kurtosis indices. Following the guidelines of Hair et al. (2010), skewness values within ± 2 and kurtosis values within ± 7 were considered indicative of acceptable distributional normality for SEM purposes. Univariate outliers were identified using standardized z-scores. Cases with absolute z-scores exceeding 3.29 ($p < .001$, two-tailed) were considered outliers and removed from further analysis, following the recommendation of Tabachnick and Fidell (2013). Additionally, multivariate outliers were assessed using Mahalanobis distance (D^2) at $p < .001$. Following these screening procedures, 26 cases were identified and removed from the original 412 responses, yielding a final analytic sample of 386 participants. To handle missing data, Full Information maximum Likelihood (FIML) estimation was employed. FIML uses all available observed information to estimate model parameters without excluding cases with missing values (Enders, 2022).

To evaluate the potential influence of common method variance (CMV) arising from the use of self-reported data, two post-hoc statistical diagnostics were conducted following Podsakoff et al. (2003). First, Harman's single-factor test was performed using principal axis factoring without rotation. The extracted single factor accounted for 50.9% of the total variance, marginally exceeding the conventional 50% threshold, which suggests that some degree of common method variance may be present and warrants further examination.

To more rigorously assess CMV, a Common Latent Factor (CLF) analysis was conducted within the CFA framework. Standardized factor loadings from the baseline model were compared against those from a model in which an orthogonal common latent factor was added. Of the 22 items, only four exhibited changes in standardized loadings exceeding the 0.20 criterion. The remaining 18 items (81.482%) showed negligible change, indicating that the factor structure and validity of the primary constructs are largely unaffected by common method variance. These findings suggest that while CMV cannot be entirely ruled out, it does not substantially distort the overall pattern of results.

CFA and invariance tests were performed in Jeffrey's Amazing Statistics Program (JASP) version 0.19.3 to assess the generalizability and replicability of the measurement model. JASP is open-source statistical software that includes the Lavaan package for Confirmatory Factor Analysis (CFA); it provides reliable model estimation, fit indices, and tools for easy interpretation (JASP Team, 2025).

Maximum likelihood robust (MLR) estimation was employed. In empirical research, it has been recommended that the MLR estimation procedure be employed in ordinal CFA or CFA-based models when the number of response categories per item is 5 or more (Li, 2016; Raykov & Marcoulides, 2012; Zhang, 2025). The data analysis for MLR estimation was performed using a sample-based covariance matrix. The validity of the proposed model was assessed by examining model fit indices and other evidence of construct validity. Consistent with the recommendations of Hooper et al. (2008), several types of fit indices were assessed, as presented in Table 1.

Table 1 Fit Indices for the Measurement Model

Fit Indices	Name of Index	Acceptable Threshold Levels	Source
Absolute	Chi-square (χ^2)	$p > .05$	Barrett (2007)
	RMSEA	$< .08$ (< 0.06 ideal)	MacCallum et al. (2004)
	SRMR	< 0.08 (< 0.05 ideal)	Hu & Bentler (1999) Hu & Bentler (1999) Diamantopoulos and Siguaw (2000)
Incremental	NNFI (TLI)	≥ 0.90 (≥ 0.95 ideal)	Hu & Bentler (1999) Hu & Bentler (1999)
	CFI	≥ 0.90 (≥ 0.95 ideal)	
Parsimony	ChiSq/df	≤ 5.0	Tabachnick and Fidell (2007)

Additionally, composite reliability was assessed to evaluate the internal consistency of the scale and its subscales. McDonald's omega (ω) coefficient was computed. A value of $\omega \geq 0.70$ is considered acceptable, with omega regarded as a more appropriate reliability estimate than Cronbach's alpha, especially when item factor loadings are unequal (Hayes & Coutts, 2020).

Measurement invariance was tested across elementary and secondary teaching-level groups through a sequential evaluation of the configural, metric, scalar, strict, and structural invariance models. Once scalar invariance was supported, latent mean comparisons were conducted by constraining the reference group's factor means to zero and estimating latent means for the comparison group. Significant differences were interpreted as evidence of genuine group variation in the latent constructs, given structural equivalence across groups. The evaluation of invariance indices followed established thresholds: $\Delta CFI < .01$, $\Delta TLI < .01$, $\Delta RMSEA < .015$, and $\Delta SRMR < .03$ (Maassen et al., 2023).

4. Results

CFA was employed to examine the factorial validity of the proposed two-factor model. The aim was to verify if the proposed model fitted the data satisfactorily and to validate the dimensionality of the Cross-Cultural Competence Scale (CCCS). The findings presented in Table 2 supported the two-factor structure of the scale. Factor 1 had high standardized loadings on all 11 items, which ranged from 0.51 to 0.82. Similarly, Factor 2 had high standardized loadings on all 11 items, which ranged from 0.54 to 0.83. All 22 items had uniformly high standardized factor loadings (Hair et al., 2019).

Moreover, the standardized residual variances for the observed variables ranged from .31 to .74, indicating low unexplained variance for the items. There were no correlated error terms, supporting the appropriateness of the model specification and the independence of the error terms. Furthermore, the

correlation coefficient between the two latent factors was .84, which was statistically significant ($p < .001$). There was no indication of multicollinearity, as the correlation between the two factors was below 0.85 (Awang, 2012).

Moreover, the standardized residual variances for the observed variables ranged from .31 to .74, indicating low unexplained variance for the items. There were no correlated error terms, supporting the appropriateness of the model specification and the independence of the error terms. Furthermore, the correlation coefficient between the two latent factors was .84, which was statistically significant ($p < .001$). There was no indication of multicollinearity, as the correlation between the two factors was below 0.85 (Awang, 2012).

Additionally, convergent and discriminant validity were analyzed. Following the Fornell–Larcker average variance extracted (AVE) criterion for convergent validity, along with construct reliability, Hair et al. (2010) indicated that evidence for convergent validity is established when all three of the following conditions are met: (a) CR values are ≥ 0.70 , (b) all standardized factor loadings (λ) are at least 0.50 and ideally ≥ 0.70 , and (c) AVE values are ≥ 0.50 . On the other hand, according to the Fornell–Larcker criterion, discriminant validity is supported when the square root of the AVE for each construct is greater than its correlations with other constructs (Fornell & Larcker, 1981). In addition, the heterotrait–monotrait ratio of correlations (HTMT) was assessed, with values below 0.85 indicating adequate discriminant validity (Henseler et al., 2015).

Table 2 CFA Measurement Properties for the Two-factor CCCS

Construct	Item	Loading Factor	Residual Variances	AVE (above 0.5)	Composite Reliability (ω)	Latent Correlation	HTMT
Attitudes Toward Culturally Diverse Students	Item 1	0.612	0.626	0.513	0.916	0.839	0.829
	Item 2	0.726	0.473				
	Item 3	0.818	0.330				
	Item 4	0.633	0.599				
	Item 5	0.816	0.334				
	Item 6	0.793	0.372				
	Item 7	0.730	0.467				
	Item 8	0.716	0.487				
	Item 9	0.804	0.353				
	Item 10	0.513	0.737				
	Item 11	0.771	0.406				
Cultural Knowledge and Teaching Flexibility	Item 1	0.725	0.475	0.543	0.924		
	Item 2	0.776	0.398				
	Item 3	0.769	0.409				
	Item 4	0.765	0.414				
	Item 5	0.833	0.306				
	Item 6	0.767	0.411				
	Item 7	0.812	0.340				
	Item 8	0.771	0.405				
	Item 9	0.764	0.417				
	Item 10	0.535	0.714				
	Item 11	0.614	0.623				

All standardized factor loadings were statistically significant and exceeded the recommended threshold of 0.50. The average variance extracted (AVE) values were above 0.50 (0.513 and 0.543, respectively), and the composite reliability (CR) coefficients are above 0.90, surpassing the recommended cutoff of 0.70. Thus, convergent validity was established.

Discriminant validity was assessed using two criteria. First, the Fornell–Larcker criterion was applied by comparing the square roots of the AVE values for each construct (.716 and .737) with the inter-construct correlation (.839). Both AVE square roots fell below the inter-construct correlation, indicating that the Fornell–Larcker criterion was not fully met. This suggests a degree of empirical overlap between the two constructs. Second, the heterotrait–monotrait ratio (HTMT) was computed as a more sensitive indicator of discriminant validity. The HTMT value was .829, which falls below the conservative threshold of .85 (Henseler et al., 2015), providing partial support for discriminant validity. Taken together, these results present mixed evidence. While the HTMT criterion was satisfied, the unmet Fornell–Larcker criterion and the high inter-factor correlation ($r = .84$) suggest that the two constructs, though theoretically distinct, share considerable empirical overlap. This is not uncommon when constructs are conceptually related (Voorhees et al., 2016), but readers are encouraged to interpret the discriminant validity evidence with appropriate caution.

To examine whether a higher-order latent construct could represent the two first-order dimensions of the CCCS, a second-order CFA was conducted. As presented in Table 3, Factor 1 ($\lambda = .916$) and Factor 2 ($\lambda = .916$) both exhibited strong and equivalent standardized loadings on the second-order construct (CCCS). The magnitude of the standardized loadings suggests that the second-order construct explains a substantial proportion of the variance in each first-order factor (approximately 84%). This provides empirical support for the hierarchical conceptualization of CCCS as a unidimensional second-order construct comprising two closely related yet theoretically distinct domains.

Table 3 Second-order CFA Model of CCCS

Second-order Factor	First-order Factor	Standard Loading
CCCS	Factor 1 (Attitudes Toward Culturally Diverse Students)	.916
	Factor 2 (Cultural Knowledge and Teaching Flexibility)	.916

The hypothesized two-factor model adequately represented the data, as seen in Table 4. Although the chi-square test was significant, $\chi^2(205) = 497.05$, $p < .001$, this outcome is not unexpected due to the test's sensitivity to sample size. More informative fit indices indicated a strong model fit, with CFI = 0.945 and TLI = 0.938, both exceeding the conventional threshold of 0.90 (Hu & Bentler, 1999). The RMSEA value was 0.062 (90% CI [0.055, 0.069]), and the SRMR was 0.037, both indicating good fit. Lastly, the ChiSq/df = 2.42, suggesting an ideal fit.

Table 4 CFA Model Fit for the Two-factor CCCS

Fit Indices	Acceptable Threshold Levels	Fit Indices Values
Chi-square (χ^2)	$p > .05$	$p < .001$
RMSEA	$< .08$ (< 0.06 ideal)	0.062
SRMR	< 0.08 (< 0.05 ideal)	0.037
NNFI (TLI)	≥ 0.90 (≥ 0.95 ideal)	0.938
CFI	≥ 0.90 (≥ 0.95 ideal)	0.945
ChiSq/df	≤ 5.0	497.046/205 = 2.42

To further evaluate the appropriateness of the two-factor structure, an alternative one-factor model was examined. The one-factor model showed substantially poorer fit across all indices. The RMSEA was 0.120, well above the acceptable threshold, and the SRMR was 0.061, exceeding the ideal level. Incremental fit indices were also inadequate, with CFI = 0.886, TLI = 0.867, and NFI = 0.851, all falling below the recommended threshold of ≥ 0.90 (Hu & Bentler, 1999). Furthermore, the one-factor model yielded higher AIC (5759.776) and BIC (5857.345) values, indicating poorer model parsimony compared to the two-factor solution.

Following the evaluation of the CCCS's measurement properties, the extent to which its two-factor structure was invariant across elementary and secondary pre-service teachers was examined using a stepwise sequence of measurement invariance tests. Elementary and secondary pre-service teachers undergo differentiated preparation programs that vary in pedagogical focus and competency expectations. These structural distinctions justify examining whether the CCCS measures of cross-cultural competence are consistent across teaching levels. Table 5 summarizes the results of invariance testing, which involved assessing configural, metric, and scalar invariance across elementary and secondary pre-service teachers.

Table 5 Measurement Invariance Testing of the Two-factor CCCS Across Groups

Model	χ^2	CFI	TLI	RMSEA [90% CI]	SRMR	Δ CFI	Δ TLI	Δ RMSEA	Δ SRMR
Configural	$\chi^2(402) = 767, p < .001$	.939	.930	.069 [.061, .076]	.042	–	–	–	–
Metric	$\chi^2(430) = 846, p < .001$	.931	.926	.071 [.064, .078]	.060	.008	.004	.002	.018
Scalar	$\chi^2(450) = 896, p < .001$	.926	.924	.072 [.065, .079]	.064	.005	.002	.001	.004

Note: Δ values reflect change compared to the previous step.

Initially, the configural invariance model showed satisfactory fit indices, CFI = .939, TLI = .930, RMSEA = .069, SRMR = .042, indicating that the fundamental factor structure is consistent across groups. The metric invariance model showed only negligible changes relative to the configural model: Δ CFI = .008, Δ TLI = .004, Δ RMSEA = .002, Δ SRMR = .018, suggesting that the factor loadings are equivalent across groups. Similarly, scalar invariance exhibited minimal deviations from the metric invariance, Δ CFI = .005, Δ TLI = .002, Δ RMSEA = .001, Δ SRMR = .004, confirming equal item intercepts across the groups. Collectively, these analyses provide strong evidence that the CCCS demonstrates robust measurement invariance between the elementary and secondary pre-service teachers, highlighting its solid psychometric properties and cross-group applicability.

5. Discussion

The current study confirmed the two-factor structure for the Cross-Cultural Competence Scale (CCCS), which differentiated between Attitudes Toward Culturally Diverse Students and Cultural Knowledge and Teaching Flexibility. The model showed strong fit indices, with CFI and TLI well above the recommended 0.90 threshold and SRMR and RMSEA within acceptable ranges. Moreover, it yielded high standardized loadings and a statistically significant, nonredundant correlation between the two factors. According to Deardorff (2006), attitudes are the foundation of cultural competence, and knowledge and skills enable people to translate these attitudes into practice. This interdependent structure offers strong theoretical backing for distinguishing between (but linking) the two factors.

Consistent with the recommendations of Hair et al. (2010), all criteria for convergent validity were satisfied. Specifically, standard factor loadings exceeded the minimum threshold of .50, and the

composite reliability estimates were well above .70, indicating high internal consistency. The AVE estimates for both constructs were also above the recommended level of .50, ensuring that the latent constructs accounted for a substantial proportion of the variance in their respective indicators. These results provide conclusive evidence that the items in the scale adequately represent their respective constructs, thereby ensuring high convergent validity.

The Fornell-Lacker criterion (Fornell & Lacker, 1981) was employed to determine the discriminant validity. The square roots of the AVEs were slightly lower than the standardized factor covariance, indicating a possible overlap in the conceptual dimensions of CCCS. On the other hand, the HTMT ratio, which was below the conservative threshold (Henseler et al., 2015), provided another indication. To provide a clearer representation of the underlying structure of cross-cultural competence, a second-order CFA was employed. The results suggest that the two factors are closely aligned dimensions of a broader latent competency. This means that teachers who demonstrate positive attitudes toward culturally diverse learners are also likely to exhibit greater cultural knowledge and instructional adaptability. However, given that the model is based on only two first-order factors, caution is warranted in interpreting the second-order constructs as fully distinct from their components.

Furthermore, the results of the measurement invariance analysis provide support for the structural integrity and cross-group generalizability of the CCCS across elementary and secondary pre-service teachers. The results of the stepwise tests indicate that the CCCS has been consistently measuring cultural competence across the two teaching levels. The configural invariance model had a satisfactory fit, indicating that the conceptual structure of the two-factor model is equivalent across the elementary and secondary groups. This implies that pre-service teachers, regardless of their teaching level, view the two core dimensions of cultural competence similarly.

Metric invariance was also confirmed, as evidenced by the minimal changes in comparative fit indices. This result confirms that the strength of the relationship between each item and its corresponding latent factor is equal across groups. That is, elementary and secondary pre-service teachers respond to the scale items with similar levels of relevance and intensity. This is important to ensure that factor loadings are not systematically different across teaching levels. Similarly, scalar invariance was confirmed, with negligible differences from the metric model. This suggests that item intercepts are equal across groups, permitting valid comparisons of latent factor means. With scalar invariance achieved, differences in cultural competence levels between elementary and secondary pre-service teachers, if found, can be considered real rather than a function of measurement.

Collectively, these findings confirm that the CCCS is a valid and consistent tool for measuring cross-cultural competence in the teacher education setting. Valid tools, such as the CCCS, can help ensure the inclusion of cross-cultural competencies in teacher education programs, thereby preparing pre-service teachers to effectively teach diverse learners (Jamil et al., 2025). The promotion of these competencies has been shown to yield positive outcomes in the areas of emphasis.

The research conducted by Kilicoglu et al. (2023) concluded that cultural competence positively impacted their social justice and self-efficacy beliefs among pre-service teachers in Turkey, South Korea, and the United States. Another research study demonstrated significant improvements in cognitive awareness (78.3% increase), affective responsiveness (90.5% improvement), and behavioral adaptability (77.3% progress) after implementing a transformative model for teacher preparation, placing cultural competency as a basic cornerstone of effective and equitable education (Mengxue et al., 2025). Furthermore, a study by Tulomana et al. (2023) found that increasing pre-service teachers' cultural awareness enhances their preparedness to teach English to Fijian ESL students. These research studies collectively confirm that promoting cross-cultural competence is imperative for advancing inclusive, socially responsive, and high-quality education.

Theoretical and Practical Implications

The findings of this study offer several theoretical, policy, and practical implications for teacher education, though these should be considered in light of the study's limitations.

On the policy front, the findings suggest the potential value of incorporating systematic cross-cultural competence training into teacher education programs. Institutional policies may consider using the CCCS alongside other validated instruments to track pre-service teachers' development and inform professional development initiatives for teacher educators. Such efforts may help ensure that pre-service teachers develop both the dispositions and the practical knowledge needed to promote inclusive and culturally responsive learning environments.

From a practical standpoint, the CCCS may offer teacher educators a useful tool for assessing and monitoring pre-service teachers' cross-cultural competence. The support for configural, metric, and scalar invariance across teaching levels further suggests that the scale may be applied comparably across both elementary and secondary pre-service teachers. Strengthening both attitudinal readiness and instructional knowledge and flexibility through targeted programs may contribute to the overall cross-cultural competence of pre-service teachers, though longitudinal evidence is needed to confirm these effects.

On the theoretical front, the two-factor model provides preliminary support for the multidimensional conceptualization of cross-cultural competence, beginning with attitudinal readiness, followed by the development of cultural knowledge and teaching flexibility. This sequential structure aligns with Deardorff's (2006) process model. However, the initial support for a second-order structure suggests that cross-cultural competence may function as a unified underlying competency comprising two closely related dimensions. This implies that interventions aimed at improving culturally competent teaching may be more effective when designed holistically, rather than targeting attitudes and instructional knowledge as separate and independent subskills.

6. Conclusion

This study provides preliminary evidence that the CCCS may serve as a valid and reliable instrument for assessing pre-service teachers' cross-cultural competence. The proposed two-factor structure demonstrated satisfactory factorial validity and convergent validity. Discriminant validity was partially supported, with the HTMT criterion met but the Fornell–Larcker criterion not fully satisfied, suggesting that the two constructs, while theoretically distinct, share considerable empirical overlap. The findings also suggest that the CCCS measures cross-cultural competence with reasonable consistency across elementary and secondary teacher preparation pathways, as evidenced by configural, metric, and scalar invariance. Furthermore, the results provide initial support for a hierarchical conceptualization of the CCCS as a higher-order factor comprising two closely related yet theoretically distinct domains, indicating that cross-cultural competence may function as a unified underlying competency with distinct attitudinal and educational dimensions.

Nonetheless, these conclusions should be interpreted in light of several limitations. The reliance on self-reported data introduces the possibility of common method bias, and post-hoc diagnostics revealed mixed signals that warrant caution in interpreting absolute parameter estimates. Additionally, the higher-order model is based on only two first-order factors, and the sample was drawn exclusively from a single region in the Philippines. Thus, further validation incorporating additional dimensions of cultural competence and more diverse samples is needed. Despite these constraints, the CCCS shows promise as a psychometrically sound instrument for assessing cross-cultural competence in pre-service teacher education, and may guide targeted interventions to prepare culturally responsive teachers.

Limitations and Directions for Future Research

Several limitations of this study warrant careful consideration. First, data were collected from four institutions in a single region, specifically from Ilocano pre-service teachers. The results may therefore be more representative of this particular cultural and regional group than of pre-service teachers in other contexts. Replicating the validation process across different cultural milieus and regions would strengthen the scale's external validity.

Second, the exclusive reliance on self-reported data collected at a single time point introduces the possibility of common method bias (CMB). Although post hoc statistical diagnostics were performed, including Harman's single-factor test and a Common Latent Factor (CLF) analysis within the CFA

framework, these controls yielded mixed signals. Readers are therefore encouraged to interpret findings involving these specific items with appropriate caution. In addition, self-reported responses may be susceptible to social desirability or self-perception biases. Future studies should consider procedural controls, such as temporal separation between measurement occasions, as well as multi-source data, such as peer evaluations, supervisor ratings, or classroom observations. These steps would more comprehensively triangulate assessments of cross-cultural competence and reduce shared-source limitations.

Third, although the two-factor model demonstrated satisfactory validity and invariance, cross-cultural competence is a complex and evolving construct. Longitudinal studies are needed to examine how attitudes, cultural knowledge, and teaching flexibility develop over time, particularly across different stages of teacher preparation. Future studies may also investigate the relationship between CCCS ratings and measurable classroom outcomes, such as student engagement, instructional quality, and technological, pedagogical, and content knowledge (TPACK).

Lastly, the second-order CFA is grounded in only two first-order factors, which limits the comprehensiveness of the hierarchical model. Expanding the model to include additional dimensions of cross-cultural competence would allow for a more rigorous assessment of the robustness and generalizability of the higher-order structure.

References

- Ailauova, Z., Doğan, Y., & Batdı, V. (2024). Effectiveness of developing cross-cultural competence of pre-service teachers: A mixed-method research. *Educational Research and Evaluation*, 29(7–8), 422–451. <https://doi.org/10.1080/13803611.2024.2359534>
- Andal, E. Z., & Panergayo, A. A. E. (2025). Pre-service teachers' demographics, cultural competence, and culturally responsive teaching practices. *International Journal of Evaluation and Research in Education*, 14(5), 3526. <https://doi.org/10.11591/ijere.v14i5.33064>
- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Allyn & Bacon.
- Awang, Z. (2012). *Structural equation modeling using AMOS graphic: A step-by-step approach*. Universiti Teknologi MARA Press
- Balachandran, P., Karuveetil, V., & Janakiram, C. (2022). Development and validation of cultural competence assessment tool for healthcare professionals, India. *Frontiers in Public Health*, 10. <https://doi.org/10.3389/fpubh.2022.919386>
- Biana, H. T., Javier, R., Jr, & Jabar, M. (2021). Assessing cultural, linguistic, and indigenous competencies: the case of early childhood care and development teachers in the Philippines. *Pacific Early Childhood Education Research Association*, 15(1), 137–155. <https://doi.org/10.17206/apjrece.2021.15.1.137>
- Byram, M. (1997). *Teaching and assessing intercultural communicative competence*. Clevedon. Multilingual Matters.
- Caingcoy, M., Lorenzo, V. I., Ramirez, I. A., Libertad, C., Pabiona Jr., R., Mier, R. M. (2022). Assessing practice teachers' culturally responsive teaching: The role of gender and degree programs in competence development. *IAFOR Journal of Cultural Studies*. <https://doi.org/10.22492/ijcs.7.1.02>
- Ched Memorandum Nos. 74 - 82 (2017). <https://ched.gov.ph/2017-ched-memorandum-orders/>
- Chen, G. M., & Starosta, W. J. (1997). A review of the concept of intercultural sensitivity. *Human Communication*, 1, 1-16.
- Chen, G. M. & Starosta, W. J. (1999). A review of the concept of intercultural awareness. *Human Communication*, 2, 27-54.
- Chen, G. M., & Starosta, W. J. (2000). The development and validation of the intercultural communication sensitivity scale. *Human Communication*, 3, 1-15.

- Chiu, C.-Y., Lonner, W. J., Matsumoto, D., & Ward, C. (2013). Cross-cultural competence: Theory, research, and application. *Journal of Cross-Cultural Psychology*, 44(6), 843-848. <https://doi.org/10.1177/0022022113493716>
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309-319. <https://doi.org/10.1037/1040-3590.7.3.309>
- de Torres, R. Q., Pacquiao, D. F., Zha, P., Katz, J. R., & Sattler, V. (2023). Psychometric testing of the Filipino version of the Clients' Perceptions of Providers' Cultural Competency (CPOPCC) instrument among LGBTQ+ population in the Philippines. *Journal of Nursing Measurement*. <https://doi.org/10.1891/JNM-2022-0084>
- Deardorff, D. K. (2006). Identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of Studies in International Education*, 10(3), 241-266. <https://doi.org/10.1177/1028315306287002>
- DeVellis, R. F., & Thorpe, C. T. (2018). *Scale development: Theory and applications* (4th ed.). SAGE.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382-388. <https://doi.org/10.2307/3150980>
- Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice* (3rd ed.). Teachers College Press.
- Gube, J. (2022). Exploring pedagogic discourses of cultural responsiveness: A tale of two classrooms. *Pedagogy, Culture & Society*, 32(2), 553-571. <https://doi.org/10.1080/14681366.2022.2063366>
- Halpern, C., Aydin, H., Halpern, B., Franz, M., & Parks, T. (2025). Cultural or linguistic competence? Pre-service teachers' perceptions of their preparation to teach multilingual children. *Pedagogy, Culture & Society*, 1-18. <https://doi.org/10.1080/14681366.2025.2472417>
- Hair J. F., Black W. C., Babin B. J., Anderson R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Prentice Hall
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Hamdan, S. & Coloma, R. S. (2022). *Assessing teachers' cultural competency*. <https://eric.ed.gov/?id=EJ1358841>
- Hayes, A. F., & Coutts, J. J. (2020). Use Omega rather than Cronbach's alpha for estimating reliability. *Communication Methods and Measures*, 14(1), 1-24. <https://doi.org/10.1080/19312458.2020.1718629>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60. <https://doi.org/10.21427/D7CF7R>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Jamil, B., Shaoan, M. R., Irfan, S., Arif, M., & Okafor, M. U. (2025). Cross-cultural competence in pre-service teacher education towards global awareness: A study in a Pakistani context. *Journal of Teaching and Learning*, 19(3), 98-120. <https://doi.org/10.22329/jtl.v19i5.9397>
- JASP Team (2025). JASP (Version 0.19.3) [Computer software].
- Johnson, J. P., Lenartowicz, T., & Apud, S. (2006). Cross-cultural competence in international business: Toward a definition and a model. *Journal of International Business Studies*, 37(4), 525-543. <https://doi.org/10.1057/palgrave.jibs.8400205>

- Khalifa, M. A., Gooden, M. A., & Davis, J. E. (2016). *Culturally responsive school leadership: A synthesis of the literature*. *Review of Educational Research*, 86(4), 1272–1311. <https://doi.org/10.3102/0034654316630383>
- Kilicoglu, G., Kilicoglu, D., & Cho, Y. H. (2023). Effects of pre-service teachers' cultural competence on their social justice and self-efficacy beliefs: A cross-cultural comparison between Turkey, South Korea, and the United States. *Teachers and Teaching: Theory and Practice*, 29(7-8), 710–738. <https://doi.org/10.1080/13540602.2023.2191187>
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Prentice-Hall.
- Li, C. H. (2016). Confirmatory factor analysis with ordinal data: Comparing robust maximum likelihood and diagonally weighted least squares. *Behavior Research Methods*, 48, 936–949. <https://doi.org/10.3758/s13428-015-0619-7>
- Lozano, R. (2025). Cross-Cultural leadership dynamics among Filipino teachers in New Mexico, USA: Basis for training program. *Psychology and Education a Multidisciplinary Journal*, 34(9), 1096–1107. <https://doi.org/10.70838/pemj.340904>
- Maassen, E., D'Urso, E. D., van Assen, M. A. L. M., Nuijten, M. B., De Roover, K., & Wicherts, J. M. (2023). The dire disregard of measurement invariance testing in psychological science. *Psychological Methods*. Advance online publication. <https://doi.org/10.1037/met0000624>
- Mariyono, D. (2024). Machine learning in multicultural education. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4885996>
- Mengxue, Z., Yicheng, L., & Ziqiang, L. (2025). Cultural competency development in pre-service teachers: A transformative learning experience model. *Global Synthesis in Education Journal*, 3(1), 01–16. <https://doi.org/10.61667/8fn4n965>
- Nganga, S., & Kambutu, J. (2023). Culturally responsive professional development programs for teacher educators using community-based collaborative learning: Lessons learned from a native American community. *Education Sciences*, 14(7), 787. <https://www.mdpi.com/2227-7102/14/7/787>
- Piaget, J. (1977). *The development of thought: Equilibration of cognitive structures*. Viking.
- Qadhi, S. A., Yousef, W., & Abu-Shawish, R. K. (2025). Impact of cultural competence and education of a preservice teacher and pedagogical style. *Review of International Geographical Education*, 11(10), 2049–2059. <https://rigeo.org/menu-script/index.php/rigeo/issue/view/44>
- Raykov, T., & Marcoulides, G. A. (2012). *A first course in structural equation modeling* (2nd ed.). Routledge. <https://doi.org/10.4324/9780203930687>
- Rodman, J. (2015, June). *Cross-cultural competence: Review of assessment methodology and available assessment tools* [White paper]. U.S. Army Mission Command, Capabilities Development and Integration Directorate (CDID), Human Dimension Capabilities Development Task Force (HDCDTF). <https://cgsc.contentdm.oclc.org/digital/collection/p16040coll2/id/12>
- Ross, K. G., Thornson, C. A., & Arrastia, M. C. (2009). *Development of the Cross-Cultural Competence Inventory (CCCI): Final report for the Defense Equal Opportunity Management Institute*
- Ruales, S. T. P., Van Petegem, W., Tabudlong, J. M., & Agirdag, O. (2020). Increasing pre-service teachers' multicultural sensitivity through online learning. *Education and Information Technologies*, 26(1), 165–186. <https://doi.org/10.1007/s10639-020-10247-8>
- Salinda, Ma. T. (2025). Development of a cross-cultural competence health care model for Filipino nurses. *Asian Journal of Research in Nursing and Health*, 8(1), 165–175. <https://doi.org/10.9734/ajrnh/2025/v8i1193>
- Santoro, N., & Forghani-Arani, N. (2014). Interrogating practice in culturally diverse classrooms: What can an analysis of student resistance and teacher response reveal? *European Journal of Teacher Education*, 38(1), 58–70. <https://doi.org/10.1080/02619768.2014.944158>

- Savina, E., Fulton, C., & Beaton, C. (2025). Teacher emotional competence: A conceptual model. *Educational Psychology Review*, 37(40). <https://doi.org/10.1007/s10648-025-10018-2>
- Seelye, H. N. (1993). *Teaching culture: Strategies for intercultural communication* (3rd ed.). National Textbook Company.
- Tudayan, J. L. P., Ogoy, J. I. N., & Pangngay, J. J. (2024). Developing a cross-cultural competence scale for pre-service teachers: A Filipino case study. *Philippine Social Science Journal*, 6(4), 43-50. <https://doi.org/10.52006/main.v6i4.869>
- Tulomana, J., Tagimaucia, V., & Chand, S. P. (2023). Assessing the readiness of pre-service teachers to teach English to ESL learners in Fijian secondary schools. *BELT – Brazilian English Language Teaching Journal*, 14(1), e44931. <https://doi.org/10.15448/2178-3640.2023.1.44931>
- United Nations. (2023). *Global Citizenship*. United Nations. <https://www.un.org/en/academic-impact/global-citizenship>
- Van Dyne, L., Ang, S., & Koh, C. (2015). Development and validation of the CQS: The cultural intelligence scale. *Handbook of cultural intelligence* (pp. 34-56). Routledge.
- Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: An analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science*, 44(1), 119–134. <https://doi.org/10.1007/s11747-015-0455-4>
- Villegas, A. M., & Lucas, T. (2002). Preparing culturally responsive teachers: Rethinking the curriculum. *Journal of Teacher Education*, 53(1), 20–32.
- Vygotsky, L. S. (1978). Interaction between learning and development. In M. Gauvain & M. Cole (Eds.), *Readings on the development of children* (pp. 34–40). Scientific American Books.
- Wang, Y. W., Davidson, M. F., Yakushko, O. F., Savoy, H. B., Tun, J. A., & Bleiern, J. K. (2003). The scale of ethnocultural empathy: Development, validation, and reliability. *Journal of Counseling Psychology*, 50, 221–234.
- Willis, A. S. (2021). Teachers' cultural, social and emotional capabilities: How teacher compassion and humility is an antecedent to student confidence. *Pedagogy, Culture & Society*, 31(1), 91–108. <https://doi.org/10.1080/14681366.2021.1884122>
- Zhang, T. (2025). *Relative performance of MLR, WLSMV, and Bayes estimators: An investigation using confirmatory factor analysis with ordinal data*. (Doctoral dissertation, University of South Carolina). Scholar Commons. <https://scholarcommons.sc.edu/etd/8095>

Master Teachers' Technical Assistance Skills and Teachers' Performance in Public Schools

Renith S. Guanzon^{1*}, Mirabelle M. Bendanillo²

¹STI West Negros University

²Pinucauan High School

*Email : renithguanzon10@gmail.com

Abstract

This descriptive study investigated the technical assistance skills of master teachers, as well as teachers' performance, in two clusters of a medium-sized division in the Negros Island Region during the School Year 2025–2026. Eighty-one public school teachers took part by answering a validated questionnaire. Technical assistance skills were measured in the learning environment and diversity of learners, professional development, and community partnership. The study also considered teachers' age, sex, and highest educational attainment. Most participants were older, mostly female, and held master's or doctorate degrees. Master teachers demonstrated high technical assistance skills across all areas. Teachers' performance was rated very satisfactory, regardless of their profile. A significant difference in technical assistance skills appeared only in the learning environment and the diversity of learners when grouped by age. Other variables did not show significant differences in the other two areas. There were no significant differences in teachers' performance. The study found important links between technical assistance skills and teachers' performance, highlighting the key role of master teachers in improving instructional outcomes. Supporting age-responsive mentoring and capacity-building programs may help further improve technical assistance effectiveness and maintain high teacher performance.

Keywords: Master Teachers; Technical Assistance Skills; Teachers' Performance; Learning Environment and Diversity of Learners; Professional Development

1. Introduction

Effective teaching remains a central determinant of learners' academic success, making teacher support systems a critical component of educational quality. In this regard, master teachers in the Philippine context play a vital role in delivering technical assistance that enhances teachers' competencies and classroom practices. Anchored on the Department of Education framework, particularly the Philippine Professional Standards for Teachers, master teachers are expected to mentor, coach, and guide their colleagues toward continuous professional growth. Through these roles, they function as key instructional leaders who significantly contribute to improving teaching effectiveness and student learning outcomes (Department of Education [DepEd], 2017).

Moreover, beyond traditional supervision, technical assistance provides a vital educational framework that enables teachers to develop their skills through collaborative support methods. Specifically, this process requires ongoing mentoring, teaching, demonstration of successful methods, and delivery of situation-specific educational solutions. In essence, technical assistance serves as a capacity development framework that enables educators to develop their teaching skills, manage classrooms, and implement new curriculum materials. The Department of Education states that successful technical assistance creates a positive work atmosphere that allows teachers to develop their teaching skills and meet the different needs of their students (DepEd, 2016). Consequently, this developmental approach aligns with worldwide practices that demonstrate coaching and mentoring as essential elements for teacher effectiveness and student achievement.

However, despite the presence of master teachers as instructional leaders, difficulties persist in schools in using technical support to boost teacher performance. Teachers find it challenging to execute curriculum changes while they attempt to use new teaching methods and handle different student needs in their complicated classroom environments. The research demonstrates that structured mentoring and coaching programs have a strong positive effect on teachers' instructional skills and their overall job

performance. In support of these, research has shown that continuous professional development through coaching and technical support improved teaching results, according to the authors Darling-Hammond et al. (2017). Thus, these findings highlight the critical role of master teachers' technical assistance skills in enhancing teachers' performance and instructional quality.

Finally, the study aligns with global educational priorities, particularly United Nations Sustainable Development Goal 4, which seeks to provide everyone with equitable access to high-quality education and lifelong learning opportunities. This aligns with global educational priorities (United Nations, 2015). In this context, strengthening master teachers' technical assistance skills ensures that teachers receive the necessary support to deliver effective and responsive instruction. As a master teacher and a program head, the researchers want to examine how technical assistance can best help teachers improve. Drawing from personal experiences in mentoring colleagues and helping teachers with classroom issues, the researchers see the value in studying these leadership functions to offer insights that could improve teacher performance and support systems within the educational setting.

2. Objectives

This study aimed to determine the master teachers' level of technical assistance skills in relation to teachers' performance in two clusters of a medium-sized division in Negros Island Region, Philippines during the School Year 2025-2026. Specifically, this study sought answers to the following questions: What is the profile of the respondents in terms of age, sex, and educational attainment? What is the master teachers' level of technical assistance skills according to the areas of learning environment and diversity of learners, professional development, and community partnership? What is the level of teachers' performance when grouped according to the aforementioned variables? Is there a significant difference in the master teachers' level of technical assistance skills when grouped and compared according to the aforementioned variables? Is there a significant difference in the level of teachers' performance when grouped and compared according to the aforementioned variables? And, is there a significant relationship between the master teachers' level of technical assistance skills and the level of teachers' performance?

3. Materials and Methods

This study used a descriptive research design to determine the levels of master teachers' technical assistance skills and teachers' performance in two clusters of a medium-sized division in Negros Island Region during the School Year 2025-2026. Specifically, the descriptive research design is a quantitative research approach used to systematically describe the characteristics, conditions, or relationships of a particular population or phenomenon without manipulating variables. It focuses on collecting data that provide an accurate portrayal of existing situations, practices, or attitudes as they naturally occur (Creswell & Creswell, 2018). Thus, this design was deemed appropriate for this study because it aimed to discover what prevails in the current condition or relationships, the opinions and beliefs, the processes and effects, and the developing trends. As part of the scientific method, the design entails monitoring and characterizing a subject's behavior without exerting any influence.

In terms of respondents, the study involved eighty-one (81) public school teachers from two clusters in a medium-sized schools division in the Negros Island Region. These teachers were selected because they work directly under master teachers, who provide them with technical assistance. To ensure the relevance of the data, purposive sampling was utilized. This non-probability method involves choosing people based on specific criteria that match the research goals. Consequently, it allowed the researchers to include respondents who have the right knowledge, experience, or involvement with the variables being studied, ensuring that the data collected are relevant and useful for the study (Creswell & Creswell, 2018).

With regard to instrumentation, the study utilized a self-made survey questionnaire to determine the master teachers' level of technical assistance skills, while using secondary data on the teachers' work performance. The instrument consisted of two parts. Part I gathered respondents' profile information, including age, sex, and educational attainment. Part II constituted the bulk of the questionnaire and focused on the three areas of technical assistance skills. There were seven items per area, yielding 21

statements for respondents to rate. Responses were measured using a five-point Likert scale ranging from 5 (Always) to 1 (Never). Meanwhile, the teachers' performance was based on their Individual Performance Commitment and Review Form (IPCRF) for SY 2024-2025.

To ensure instrument quality, validity was established with five expert validators who are recognized education professionals, including education program supervisors, department heads, and school heads within the division. Following the criteria of Good and Scates, the instrument obtained a validation mean of 4.76, interpreted as Excellent, indicating high validity. Similarly, reliability was determined using Cronbach's alpha to assess internal consistency. A pilot test was conducted among 30 teachers who were not part of the actual respondents and were drawn from the same district. The master teachers' technical assistance skills yielded a reliability coefficient of 0.952, interpreted as Excellent. This result confirms that the research instrument is highly reliable.

In analyzing the data, different statistical treatments were employed based on the study objectives. Objectives 1 to 3 employed a descriptive analytical scheme, using frequency counts and percentages as statistical tools to assess the profile of respondents, the mean to assess the level of master teachers' technical assistance skills across the three areas, and the level of teachers' performance. On the other hand, objectives 4 and 5 utilized a comparative analytical scheme, applying the Mann-Whitney U test to determine significant differences in the levels of master teachers' technical assistance skills and teachers' performance when grouped and compared according to the aforementioned variables. Finally, Objective 6 employed Spearman rho to examine the significant relationship between the levels of master teachers' technical assistance skills and teachers' performance.

Lastly, ethical considerations were strictly observed throughout the conduct of the study. The researchers secured written informed consent from the respondents prior to data collection. Participation in the study was voluntary, and respondents were clearly informed of the purpose of the study, the procedures involved, and their right to withdraw at any time without penalty. Furthermore, to minimize potential harm, the confidentiality of all responses was guaranteed, and the anonymity of the respondents was maintained during data gathering, analysis, and reporting. In addition, the study adhered to the provisions of Republic Act No. 10173, otherwise known as the Data Privacy Act of 2012, which mandates the lawful, fair, and secure processing of personal and sensitive information.

4. Results and Discussion

This section presents the results, statistical analyses, and interpretation of the data collected in relation to the study's specific objectives.

Profile of the Respondents

Table 1: *Profile of Respondents*

Variables	Categories	Frequency	Percentage
Age	Younger (less than 39 years old)	39	48.10
	Older (39 years and above)	42	51.90
Sex	Male	21	25.90
	Female	60	74.10
Highest Educational Attainment	Lower (Bachelor's Degree)	34	42.00
	Higher (Master's or Doctorate Degrees)	47	58.00
	Total	81	100

Table 1, which shows 81 respondents as surveyed with respect to age, sex, and highest educational attainment, meticulously states the distribution of respondents based on the basis of the demographic variables.

Regarding age, it is seen that 42 respondents, or 51.90%, fall in the above-39 age category, whereas 39 respondents, or 48.10%, fall below the age of 39. These results suggest that the age distribution is relatively balanced between young and old teachers, with a mild lean towards older respondents. The findings suggest that the teaching circles represented in this study include both experienced educators and relatively younger educators, thus opening up opportunities for varied teaching experiences and pedagogical practices within the school environment.

A majority of the respondents consisted of female teachers, with 60 respondents for 74.10% and 21 respondents for male about 25.90%. Thus, fellowship from female teachers in this study setting is staggering. This corroborates the general orientation in the Philippine education system where teaching especially in basic sessions abounds in female educators. Educating learners is one thing that is heavily approached by the female educators, and they help manage classrooms while focusing on the child as a whole.

In terms of highest educational attainment, the biggest percentage of the respondents had graduate studies. Almost 58% of the respondents (47) had master's or doctor's degrees, while 42% of them (34) had bachelor's degrees. This implies that most teachers pursued graduate studies to further fine-tune their professionalism. In the Philippines, teachers are encouraged to pursue advanced studies as part of their professional development and career advancement, which may lead to enhanced teaching effectiveness and improved professional growth.

The general profile of the respondents reveals that the teaching workforce, which the study is predominantly female, only slightly dominates by older teachers and is mostly made up of educators with postgraduate qualifications; thus, it is a group with professional experience. Combining academic and professional capacities enhances its professional standing in the teaching field.

Descriptive Analysis of the Master Teachers' Level of Technical Assistance Skills

Table 2: Master Teachers' Level of Technical Assistance Skills in Learning Environment and Diversity of Learners

A. Learning Environment and Diversity of Learners	Mean	Interpretation
<i>My Master Teacher...</i>		
1. Assists in creating a positive and inclusive classroom environment that fosters respect and collaboration.	4.36	High
2. Provides strategies to manage diverse learner behaviors effectively and respectfully.	4.26	High
3. Offers guidance on how to address the needs of learners with different cultural, linguistic, and socioeconomic backgrounds.	4.07	High
4. Supports the adaptation of lessons to accommodate learners with special educational needs.	4.15	High
5. Shares practices that promote gender sensitivity and inclusive education.	4.19	High
6. Encourages the use of learner-centered strategies that cater to multiple intelligences and learning styles.	4.38	High
7. Coaches teachers on how to maintain a safe, orderly, and engaging learning environment.	4.23	High
Overall Mean	4.23	High

The data in Table 2 presents the Master Teachers' level of technical assistance skills in learning environments and the diversity of learners, measured through seven indicators describing how Master Teachers assist teachers in managing inclusive classrooms, addressing diverse learner needs, and creating positive learning environments. The overall mean score is 4.23, which indicates a "High Level." Of the items, Item 6, "Encourages the use of learner-centered strategies that cater to multiple intelligences and learning styles" had the highest mean of 4.38, which can be interpreted as a high level. On the other hand,

the item with the lowest mean is Item 3, “Offers guidance on how to address the needs of learners with different cultural, linguistic, and socioeconomic backgrounds,” which was scored at 4.07 and interpreted as a High Level.

Item 3 obtained the lowest mean of 4.07, although still interpreted as a high level. This item indicates that Master Teachers offer guidance on addressing the needs of learners with different cultural, linguistic, and socioeconomic backgrounds. The relatively lower mean suggests that teachers may still need additional support in implementing culturally responsive teaching practices and addressing the diverse backgrounds of learners in the classroom. The relatively lower rating in addressing learners’ diverse backgrounds implies the need to further strengthen teachers’ competencies in culturally responsive and inclusive teaching practices. Master Teachers may enhance their mentoring efforts by providing more professional discussions, training, and collaborative learning opportunities that help teachers understand and respond effectively to learner diversity.

Studies highlight the importance of instructional leadership in promoting inclusive education. These findings corroborate the study of Malipot (2020) and Martin (2025) highlighted that teachers need stronger professional support to effectively implement inclusive education policies and address diverse learner needs in Philippine classrooms. These findings also support the present result that, while Master Teachers demonstrate strong technical assistance skills in promoting positive learning environments, strengthening support for culturally responsive and inclusive practices can further improve teaching effectiveness.

Table 3: Master Teachers’ Level of Technical Assistance Skills in Professional Development

B. Professional Development	Mean	Interpretation
<i>My Master Teacher...</i>		
1. Encourages teachers to participate in school-based and external professional development programs.	4.31	High
2. Shares relevant training opportunities that align with teachers’ needs and interests.	4.20	High
3. Guides teachers in setting personal and professional growth goals.	4.41	High
4. Provides mentoring and coaching to enhance teaching practices.	4.30	High
5. Assists in the implementation of individual development plans (IDPs).	4.00	High
6. Supports teachers in reflecting on their teaching practices for continuous improvement.	4.20	High
7. Facilitates learning action cells (LAC sessions) to address instructional challenges.	4.35	High
Overall Mean	4.25	High

Table 3 demonstrates the Master Teachers’ level of technical assistance skills in professional development, measured through seven indicators describing how Master Teachers guide teachers in professional growth, mentoring, coaching, and participation in professional learning activities. The overall mean score is 4.25, which indicates a “High Level.” From the items, Item 3, “Guides teachers in setting personal and professional growth goals” had the highest mean of 4.41, which can be interpreted as a High Level. On the other hand, the item with the lowest mean is Item 5, “Assists in the implementation of individual development plans (IDPs),” which was scored at 4.00 and interpreted as a High Level.

Item 5 had the lowest mean score of 4.00, but this is still considered a High Level. This item shows that Master Teachers help teachers put their Individual Development Plans (IDPs) into practice. The lower rating for implementing Individual Development Plans suggests that mentoring systems should be improved so teachers receive steady support in reaching their professional goals. Master Teachers

could offer more regular follow-up, coaching, and reflective discussions to help teachers carry out their IDPs. Research shows that mentoring and coaching are important for teachers' professional growth.

These results reinforce the research of Dacanay et al. (2023) and Kraft, et al. (2018) which found that ongoing mentoring and support from Master Teachers can greatly improve teachers' instructional skills and overall development. In addition, these findings also support the research of Balagtas et al. (2019) who noted that mentoring and professional support help teachers turn their development goals into effective classroom practices. Lastly, these results substantiate the study of Magno (2018) who added that professional guidance and opportunities for reflection help teachers build their skills and teach more effectively.

Table 4: Master Teachers' Level of Technical Assistance Skills in Community Partnership

Community Partnership	Mean	Interpretation
My Master Teacher...		
1. Encourages collaboration between teachers and community stakeholders to support student learning.	4.36	High
2. Shares strategies for involving parents and guardians in school activities and learning programs.	4.26	High
3. Assists in organizing school-community activities that promote shared responsibility in education.	4.16	High
4. Supports teachers in identifying community resources that can enhance instruction.	4.17	High
5. Facilitates linkages with local organizations to support learners' academic and personal development.	4.06	High
6. Promotes the integration of community-based learning experiences into the curriculum.	4.06	High
7. Guides teachers on how to build and sustain productive relationships with external partners.	4.11	High
Overall Mean	4.17	High

Table 4 presents the Master Teachers' level of technical assistance skills in community partnership, measured through seven indicators describing how Master Teachers assist teachers in building collaboration with parents, community stakeholders, and external organizations to support learners' academic and personal development. The overall mean score is 4.17, which indicates a "High Level." From the items, Item 1, "Encourages collaboration between teachers and community stakeholders to support student learning" had the highest mean of 4.36, which can be interpreted as a High Level. On the other hand, the items with the lowest mean are Item 5, "Facilitates linkages with local organizations to support learners' academic and personal development" and Item 6, "Promotes the integration of community-based learning experiences into the curriculum," both of which were scored at 4.06 and interpreted as a High Level.

Items 5 and 6 received the lowest average score of 4.06, which remains within the High Level category. These items indicate that Master Teachers facilitate connections with local organizations and promote the integration of community-based learning into the curriculum. The marginally lower score suggests that teachers may require additional support to establish formal partnerships with external organizations and to incorporate community-based learning into their instructional practices.

The comparatively lower ratings for establishing connections with local organizations and integrating community-based learning indicate a need to enhance school-community collaboration initiatives. Master Teachers can further support teachers by identifying potential community partners, organizing collaborative activities, and incorporating community-based experiences that increase the relevance and impact of student learning.

Previous studies underscore the significance of robust school-community partnerships in improving educational outcomes. The results conform to the research of Brillantes et al. (2019) and

Mandolado and Ancho (2023), who found that when schools and communities work together, educational support systems become stronger and the quality of basic education in the Philippines improves. Alonzo (2018) also pointed out that partnerships between schools and community organizations help with resource mobilization, learner support programs, and community-based educational projects. These findings support the current result that Master Teachers are effective in providing technical assistance for community partnerships. However, building stronger connections with local organizations and including community-based learning in teaching can make school-community collaboration even more effective.

Descriptive Analysis in the Level of Teachers' Performance

Table 5: Level of Teachers' Performance When Grouped According to the Aforementioned Variables

Variables	Categories	Mean	Interpretation
Age	Younger	4.19	Very Satisfactory
	Older	4.19	Very Satisfactory
Sex	Male	4.11	Very Satisfactory
	Female	4.22	Very Satisfactory
Highest Educational Attainment	Lower	4.14	Very Satisfactory
	Higher	4.23	Very Satisfactory

Table 5 reveals teachers' performance levels based on age, sex, and highest educational attainment. It lists the mean scores and explains how teachers performed across these groups.

Younger and older teachers both had a mean score of 4.19, rated as Very Satisfactory. This shows that teachers perform at a high level regardless of their age. The results suggest that age does not affect teachers' ability to do their jobs well, as both groups show similar commitment and competence.

When teachers are grouped according to sex, male teachers obtained a mean score of 4.11, while female teachers scored slightly higher at 4.22. Both are rated as Very Satisfactory. This means that teachers perform well regardless of sex, and both groups contribute effectively to school goals. Those with higher educational attainment obtained a mean score of 4.23 and those with lower educational attainment obtained a mean score of 4.14, both are interpreted as Very Satisfactory. This indicates that teachers perform at a high level regardless of their educational attainment. However, the slightly higher mean for teachers with advanced educational qualifications suggests that further education may contribute to enhanced professional competence, improved instructional practices, and a deeper understanding of pedagogical strategies.

These findings corroborate the study by Maculada and Guanzon (2024), which found that teachers in public schools generally demonstrate very satisfactory levels of work performance, particularly when they exhibit strong commitment to their professional responsibilities. The study emphasized that teachers' dedication, sense of purpose, and professional values contribute significantly to maintaining high performance, regardless of their background. This suggests that motivation and commitment are key to effective teaching and good educational results.

Comparative Analysis of the Master Teachers' Level of Technical Assistance Skills When Grouped and Compared According to the Variables

Table 6. Difference in the Master Teachers' Level of Technical Assistance Skills in Learning Environment and Diversity of Learners When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	39	47.76	555.500	0.012		Significant
	Older	42	34.73				
Sex	Male	21	33.43	471.000	0.084	0.05	Not Significant
	Female	60	43.65				
Highest Educational Attainment	Lower	34	36.51	646.500	0.142		Not Significant
	Higher	47	44.24				

Table 6 summarizes the differences in Master Teachers' Technical Assistance Skills in the Learning Environment and Diversity of Learners when grouped by age, sex, and highest educational attainment, using the Mann–Whitney U test.

When grouped by sex and highest educational attainment, the results showed no significant difference in Master Teachers' technical assistance skills. For sex, the p-value was 0.084, which is higher than the 0.05 significance level. This means there was no significant difference between male (mean rank = 33.43) and female teachers (mean rank = 43.65). For the highest educational attainment, the p-value was 0.142, which is above 0.05, indicating no significant difference between teachers with lower (mean rank = 36.51) and higher (mean rank = 44.24) educational attainment. Therefore, the null hypothesis that there is no significant difference in Master Teachers' technical assistance skills in the learning environment and across the diversity of learners, when grouped and compared according to sex and highest educational attainment, is accepted. These results suggest that Master Teachers offer consistent and fair technical assistance in managing learning environments and addressing learner diversity, regardless of demographic characteristics.

However, a significant difference was found, as evidenced by a p-value of 0.012, which is less than the 0.05 level of significance. Therefore, the null hypothesis, which states that there is no significant difference in the Master Teachers' technical assistance skills in the learning environment and across the diversity of learners when grouped and compared according to age, is rejected. The mean rank indicates that younger teachers (47.76) perceive Master Teachers' technical assistance skills more highly than older teachers (34.73). This indicates that younger teachers perceive greater support from the guidance provided by Master Teachers in managing inclusive learning environments and addressing learner diversity. Younger teachers, who are still developing their classroom management and inclusive teaching competencies, may rely more on technical assistance, which may result in higher ratings. This may also suggest that younger teachers may need more structured and intensive support to manage diverse classrooms and use inclusive practices. At the same time, schools should continue supporting experienced teachers through advanced and collaborative methods, such as peer mentoring and reflective practice, to help them keep growing and stay effective in inclusive education.

These findings support the research by Mok and Staub (2021) and Kraft, et al. (2018), who found that coaching, mentoring, and supervision greatly improve teachers' instructional and classroom management skills, especially for less experienced teachers. Their study highlighted that professional support works best when it matches teachers' developmental needs, which helps explain why differences appear across age groups but not by sex or educational attainment.

Table 7. Difference in Master Teachers' Level of Technical Assistance Skills in Professional Development When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	39	46.18	617.000	0.052	0.05	Not Significant
	Older	42	36.19				
Sex	Male	21	35.10	506.000	0.174	0.05	Not Significant
	Female	60	43.07				
Highest Educational Attainment	Lower	34	37.22	670.500	0.210		Not Significant
	Higher	47	43.73				

Table 7 depicts the differences in Master Teachers' technical assistance skills in professional development, grouped by age, sex, and highest educational attainment, as measured by the Mann–Whitney U test.

The results showed no significant differences in Master Teachers' technical assistance skills in professional development when grouped and compared according to age, sex, or highest educational attainment. For age, the p-value was 0.052, which is just above the 0.05 significance level; therefore, there is no significant difference between younger (mean rank = 46.18) and older teachers (mean rank = 36.19). For sex, the p-value was 0.174, showing no significant difference between male (mean rank = 35.10) and female teachers (mean rank = 43.07). For educational attainment, the p-value was 0.210, indicating no significant difference between teachers with lower (mean rank = 37.22) and higher educational attainment (mean rank = 43.73). These results suggest that Master Teachers' technical assistance in professional development is similar across all groups, regardless of demographic characteristics. Therefore, the null hypothesis is accepted; there is no significant difference in the level of technical assistance skills among Master Teachers when grouped and compared according to age, sex, or highest educational attainment.

Since there are no significant differences, this means that Master Teachers provide professional development support in a consistent and fair way to all teachers. All teachers, no matter their age, sex, or educational background, have similar chances to receive mentoring, coaching, join training programs, and take part in activities like Learning Action Cells (LAC). This also shows that professional development is guided by shared goals and institutional guidelines, so all teachers benefit from ongoing learning and opportunities to improve their teaching.

These results support the study by Desimone and Garet (2015) and Desimone (2009), who found that effective professional development is marked by consistency, coherence, and group participation among teachers, rather than by individual demographic factors. Their study showed that when professional development is well organized and matches teachers' instructional needs, it improves teaching practices for all groups.

Table 8. Difference in the Master Teachers' Level of Technical Assistance Skills in Community Partnership When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	39	44.85	669.000	0.150	0.05	Not Significant
	Older	42	37.43				
Sex	Male	21	34.40	491.500	0.130	0.05	Not Significant
	Female	60	43.31				
Highest Educational Attainment	Lower	34	37.65	685.000	0.268		Not Significant
	Higher	47	43.43				

Table 8 shows the differences in Master Teachers' technical assistance skills in community partnership, comparing groups based on age, sex, and highest educational attainment using the Mann–Whitney U test.

When grouped according to age, sex, or highest educational attainment, the results showed no significant differences in Master Teachers' technical assistance skills in community partnership. For age, the p-value was 0.150, which is above the 0.05 significance level, indicating no significant difference between younger (mean rank = 44.85) and older teachers (mean rank = 37.43). For sex, the p-value was 0.130, showing no significant difference between male (mean rank = 34.40) and female teachers (mean rank = 43.31). For the highest educational attainment, the p-value was 0.268, indicating no significant difference between teachers with lower (mean rank = 37.65) and higher (mean rank = 43.43) educational attainment. Therefore, the null hypothesis is accepted, there is no significant difference in the level of technical assistance skills in community partnership among Master Teachers when grouped and compared according to age, sex, or highest educational attainment.

These results suggest that Master Teachers' technical assistance in community partnership is similar across all groups, regardless of demographic characteristics. Further, these imply that community partnership practices are uniformly implemented and inclusive, ensuring that all teachers receive equal support in engaging with parents, community stakeholders, and external organizations. This suggests that Master Teachers promote a culture of collaboration that is not influenced by individual teacher characteristics but is instead guided by institutional goals and shared responsibility for learners' development. Furthermore, it indicates that schools have established consistent mechanisms for fostering school–community linkages, enabling teachers to effectively involve stakeholders in educational activities and enhance students' learning experiences.

These findings reinforce the study by Epstein et al. (2019) and Epstein and Sheldon (2002), who found that effective school–family–community partnerships rely on systematic, school-wide practices rather than differences between individual teachers. Their study showed that when schools use structured ways to work with families and communities, all teachers can involve stakeholders effectively, which leads to better educational results and stronger support for students.

Comparative Analysis in the Level of Teachers' Performance

Table 9. Difference in the Level of Teacher's Performance When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	39	40.50	799.500	1.000		Not
	Older	41	40.50				Significant
Sex	Male	20	34.48	479.500	0.180	0.05	Not
	Female	60	42.51				Significant
Highest Educational Attainment	Lower	34	35.91	626.000	0.129		Not
	Higher	46	43.89				Significant

Table 9 presents the difference in the level of teachers' performance when grouped and compared according to age, sex, and highest educational attainment using the Mann–Whitney U test.

When grouped according to age, sex, and highest educational attainment, the results consistently revealed no significant difference in teachers' performance. Specifically, for age, the computed p-value of 1.000 indicates no difference between younger (mean rank = 40.50) and older teachers (mean rank = 40.50). Similarly, for sex, the p-value of 0.180 shows no significant difference between male (mean rank = 34.48) and female teachers (mean rank = 42.51). Likewise, for highest educational attainment, the p-value of 0.129 indicates no significant difference between teachers with lower (mean rank = 35.91) and higher educational attainment (mean rank = 43.89). Therefore, the null hypothesis, which states that there

is no significant difference in the level of teachers' performance when grouped and compared according to age, sex, and highest educational attainment, is accepted. These findings suggest that teachers' performance is consistently demonstrated across all groups, regardless of demographic characteristics.

In addition, the absence of significant differences implies that teachers maintain a uniformly high level of performance, which may be attributed to standardized professional expectations, shared competencies, and consistent instructional support within the school system. This indicates that performance is less influenced by demographic factors and more by professional commitment, institutional support, and instructional supervision.

The present findings partially conform to and partially negate the results of Go and Eslabon (2024). The results conform with respect to age, as both studies found no significant difference in teachers' performance when grouped according to age. However, the findings do not conform for other profile variables, as Go and Eslabon (2024) reported significant differences in teachers' performance when grouped according to plantilla position and educational attainment, whereas the present study found no significant differences in terms of sex and educational attainment. This discrepancy may be attributed to variations in research context, sample characteristics, or institutional support systems. It suggests that while certain contexts may highlight differences based on rank or qualifications, the present setting demonstrates that teachers' performance can remain consistent across demographic groups when strong supervisory support and standardized performance expectations are in place.

Relational Analysis Between the Master Teachers' Level of Technical Assistance Skills and the Level of Teachers' Performance

Table 10. Relationship Between the Master Teachers' Level of Technical Assistance Skills and the Level of Teachers' Performance

Variable	rho	p-value	Sig. level	Interpretation
Level of Master Technical Assistance Skills	0.003	0.001	0.05	Significant
Level of Teachers' Performance				

Table 10 reveals the correlation between Master Teachers' technical assistance skills and teachers' performance. The analysis found a rho value of 0.003 and a p-value of 0.001, which is below the 0.05 significance level. This means there is a statistically significant relationship between the two variables. However, the correlation is very weak and positive; therefore, even though the result is significant, the connection between Master Teachers' technical assistance skills and teachers' performance is minimal. As a result, the null hypothesis that there is no significant relationship between these variables is rejected.

These findings suggest that, while technical assistance from Master Teachers is statistically linked to teachers' performance, its direct effect is small. This means technical assistance by itself may not strongly predict teachers' performance. Other factors, such as teachers' motivation, experience, school environment, and leadership support, may have a bigger impact. The results also show that how technical assistance is carried out matters, highlighting the need for more focused and ongoing support that fits the specific context to improve its effect on teachers' performance.

The results of this study are in line with Tuico and Callo (2024), who examined how school heads' supervision, attitudes, and practices affect teachers' performance in public junior high schools. Tuico and Callo found that technical assistance practices are closely linked to teachers' performance, demonstrating the value of guidance, monitoring, and professional support for effective teaching. Like the present study, these findings suggest that supervision and technical help do matter, but their effect can vary depending on other factors. This means that, while technical assistance skills relate to teachers' performance, they may not be a strong predictor on their own. Instead, teacher performance likely

depends on several factors, including motivation, experience, and the school environment. This highlights the importance of taking a well-rounded approach to teacher development.

5. Conclusion

The findings suggest that technical assistance from master teachers is an important mechanism for improving teachers' instructional performance. Master teachers consistently delivered high levels of instructional support, while teachers demonstrated very satisfactory levels of performance, regardless of differences in demographic and professional profiles. The consistency speaks to the fact that effective technical assistance is a stable, professional support system in schools. It is interesting to note that age influenced some aspects of technical assistance, including the learning environment and learner diversity, but the overall pattern of findings supports the conclusion that practices of instructional support are generally consistent across personnel groups.

More broadly, the study reveals a positive relationship between master teachers' technical assistance skills and teachers' performance, indicating that ongoing instructional guidance, mentoring, and professional support are central to successful teaching. As a final point, the study contributes to knowledge by providing empirical evidence that technical assistance is not merely an administrative or supervisory function but an integral professional development strategy that improves teacher competence and performance.

References

- Alonzo, L. C., & Paglinawan, J. L. (2025). The relationship of stakeholders' involvement to the project sustainability plan of public schools. *International Journal of Research and Innovation in Social Science*, 9(6), 3772–3778. <https://rsisinternational.org/journals/ijriss/articles/the-relationship-of-stakeholders-involvement-to-the-project-sustainability-plan-of-public-schools/>
- Balagtas, M. U., Garcia, D. M. B., & Ngo, D. C. (2019). Looking through Philippine teachers' professional development practices for the 21st century. *Universal Journal of Educational Research*, 7(12), 2898–2904. <https://doi.org/10.13189/ujer.2019.071229>
- Brillantes, K. D. B., Orbeta, A. C., Jr., Francisco-Abrigo, K. A., Capones, E. M., & Jovellanos, J. B. B. (2019). Status of senior high school implementation: A process evaluation. Philippine Institute for Development Studies (PIDS) Discussion Paper Series No. 2019-13. <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1913.pdf>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297–334. <https://doi.org/10.1007/BF02310555>
- Dacanay, R., Conales, R., & Perez, D. (2023). Mentoring and technical assistance of master teachers in the Division of Palawan, Department of Education. *Psychology and Education: A Multidisciplinary Journal*, 8(7), 833–842. <https://www.ejournals.ph/article.php?id=21139>
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Palo Alto, CA: Learning Policy Institute. https://learningpolicyinstitute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf?
- Department of Education. (2016). *Technical assistance: Its new paradigm*. Department of Education. <https://www.deped.gov.ph/2016/01/29/technical-assistance-its-new-paradigm/>
- Department of Education. (2017). DepEd Order No. 42, s. 2017: National adoption and implementation of the Philippine Professional Standards for Teachers (PPST). <https://www.deped.gov.ph/2017/08/11/do-42-s-2017-national-adoption-and-implementation-of-the-philippine-professional-standards-for-teachers/>
- Desimone, L. M. (2009). Improving Impact Studies of Teachers' Professional Development: Toward Better Conceptualizations and Measures. *Educational Researcher*, 38(3), 181–199.

- Desimone, L. M., & Garet, M. S. (2015). Best practices in teachers' professional development in the United States. *Psychology, Society & Education*, 7(3), 252–263.
<https://www.semanticscholar.org/paper/Best-Practices-in-Teachers%E2%80%99Professional-in-the-Desimone-Garet/31ffd06b4df5bb399f782d3985f17311d2bc44ae>
- Epstein, J. L., & Sheldon, S. B. (2002). Present and Accounted For: Improving Student Attendance Through Family and Community Involvement. *The Journal of Educational Research*, 95(5), 308–318.
- Epstein, J. L., Sanders, M. G., Sheldon, S. B., Simon, B. S., Salinas, K. C., Jansorn, N. R., Van Voorhis, F. L., Martin, C. S., Thomas, B. G., Greenfield, M. D., Hutchins, D. J., & Williams, K. J. (2018). *School, family, and community partnerships: Your handbook for action* (4th ed.). Corwin Press.
<https://eric.ed.gov/?id=ED586508>
- Go, D., & Eslabon, R. (2024). School Heads' Instructional Supervisory Skills and Teachers' Performance. *Polaris Global Journal of Scholarly Research and Trends*, 3(1), 13–28.
<https://doi.org/10.58429/pgjsrt.v3n1a104>
- Good, C. V., & Scates, D. E. (1972). *Methods of research: Educational, psychological, and sociological* (3rd ed.). Appleton-Century-Crofts.
<https://archive.org/details/methodsofresearc0000good>
- Kraft, M. A., Blazar, D., & Hogan, D. (2018). The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence. *Review of Educational Research*, 88(4), 547–588.
- Maculada, D. R., & Guanzon, R. S. (2024). Teachers' religious commitment and work performance in public schools. *Polaris Global Journal of Scholarly Research and Trends*, 3(1), 29–38.
<https://doi.org/10.58429/pgjsrt.v3n1a109>
- Magno, C. (2018). Developing teachers' assessment literacy. *The Normal Lights*, 12(1), 1–22.
<https://po.pnuresearchportal.org/ejournal/index.php/normallights/issue/view/27>
- Malipot, M. H. (2020). Inclusive education in the Philippines: Challenges and opportunities for teachers. *Manila Bulletin Education Section*. <https://mb.com.ph/2020/01/31/inclusive-education-in-the-philippines/>
- Mandolado, J. T., & Ancho, I. V. (2023). School–Community Partnership in the Philippines: The Case of Best Implementors. *Journal of Education and Innovation*, 25(4), 1–16.
- Martin, M. M. (2025). Lens of Inclusive Education: School Heads and Classroom Teachers' Perspectives on Policy Implementation and Institutional Challenges in the Philippines
- Mok, S. Y., & Staub, F. C. (2021). Does coaching, mentoring, and supervision matter for teachers' instructional skills? A meta-analysis. *Thinking Skills and Creativity*, 42, 100971.
<https://doi.org/10.1016/j.tsc.2021.100971>
- Republic of the Philippines. (2012). Republic Act No. 10173: Data Privacy Act of 2012.
<https://www.officialgazette.gov.ph/2012/08/15/republic-act-no-10173/>
- Tuico, E. V. & Callo, E. C. (2024). School heads' direct supervision, attitudes, and practices and teachers' performance in public junior high schools. *eJournals.ph*. <https://ejournals.ph/article.php?id=25097>
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations. <https://sdgs.un.org/2030agenda>

Savoring Sweet and Sticky: Explicating the Significance of *Sinukmani* to the Culinary Heritage of Rosario, Batangas

Vee Jay C. Dalisay*, Aljene R. Agapay, Krizelle Mae Cuevas, Jacqueline A. Dequina,
Rica Mae H. Imperial, Arianne Matias, Roy Regin Rex A. De Torres

Lipa City Colleges, Philippines

*Email : veej dalisay28@gmail.com

Abstract

This study explores the cultural significance of *Sinukmani*, a traditional sticky rice delicacy, in the municipality of Rosario, Batangas. Motivated by the limited scholarly attention given to regional culinary heritage in the Philippines, the research aimed to investigate its historical, cultural, and social relevance to the community. A qualitative narrative design was employed, involving in-depth interviews with ten key participants, including local vendors, makers, and community leaders. Data were analyzed using thematic analysis within a narrative inquiry framework to identify recurring patterns related to *Sinukmani*'s origin and history, meaning and representation, variations and local adaptations, and modernization and commercialization. The findings reveal that *Sinukmani* serves as more than a festive delicacy—it is a symbol of unity, familial love, and cultural identity, often passed down through generations. Despite external pressures from commercialization and modern food practices, the community maintains strong efforts to preserve traditional recipes and preparation methods. The study concludes that *Sinukmani* is an integral part of Rosario's intangible cultural heritage, reinforcing community bonds and offering a unique culinary identity worth safeguarding for future generations.

Keywords: Sinukmani, Culinary Heritage, Kakanin

1. Introduction

"We are who we eat." This notion underscores how food shapes identities, relationships, and communities, from humanity's primate ancestors sharing food to early humans cooking together for survival (West, 2021). What people consume, how they acquire it, who prepares it, and who eats first provide insights into their traditions, values, and identities. Hence, food has been considered an important cultural signifier, with culinary heritage forming a significant part of the cultural package of any place.

According to Zocchi et al. (2021), culinary heritage — also referred to as food heritage or gastronomic heritage — is an umbrella concept that includes the material or tangible (e.g., ingredients and cooking accouterments) and immaterial or intangible (e.g., tastes, smells, techniques, recipes, and eating traditions) elements that contribute to the cultural values and characteristics of places. As food continues to change and evolve, there is growing interest in understanding how culinary heritage interacts with local traditions and histories.

In Southeast and East Asia, sticky rice is celebrated across multiple cuisines — from Thai and Lao savory dishes to Japanese *mochi* and Filipino *kakanin* like *suman* and *biko*, traditionally prepared for gatherings and celebrations (Sakamoto, 2021; Tedoco & Panes, 2024). Filipino culture, in particular, accords sticky rice deep cultural significance. Its preparation and sharing during holidays such as Christmas, New Year, and town *fiestas* strengthen social ties and foster a sense of belonging. As Besa and Dorotan (2014) note, the Philippines' rich culinary heritage offers a lens into its culture through beloved traditional foods. With approximately 13 million Filipinos engaged in rice farming (Arnaoudov et al., 2015), sticky rice delicacies or *kakanin* are integral to Filipino life.

The province of Batangas reflects this heritage through a fusion of native, Spanish, and Chinese influences. *Kakanin* like *suman* and *kalamay* serve not only as festival fare but also as meaningful symbols. For instance, in Batangueño wedding customs, godparents are given *suman* as *sabog* or *dulot* (gifts), symbolizing sweet marital blessings. *Kalamay*, with its sticky consistency, represents the couple's promise to stick together through life's trials (Romulo, 2012). These examples illustrate how food can embody traditions, relationships, and shared community values.

The municipality of Rosario in the western part of the province is hailed as the "Rice Granary of Batangas," owing to its top-notch rice production industry further bolstered by diverse livestock operations (Reyes, 2023). It is the home of a native *kakanin* known as *Sinukmani*, a traditional sticky rice delicacy made by simmering whole glutinous rice in coconut milk with brown sugar until caramelized. Characterized by its golden-brown color, chewy yet springy texture, and sweet-creamy flavor with a prominent coconut fragrance, *Sinukmani* is locally regarded as a signature dish of Rosario (Villegas, 2013; Manzano, 2021).

The town annually celebrates the *Sinukmani* Festival every June 9 to commemorate its founding and agricultural legacy. This festival showcases *Sinukmani* prepared by different barangays and creatively laid out on the streets, alongside cooking demonstrations, competitions, and food stalls. These attract both locals and tourists interested in experiencing the unique flavors of Batangas. The event also includes vibrant street dance competitions with participants dressed in *Sinukmani*-related costumes, mostly made out of rice sacks, bilao (round bamboo trays), and banigs (woven mats). This gathering not only showcases the town's rich heritage but also fosters a sense of unity and pride among locals (Esparagoza, 2021).

Despite *Sinukmani*'s enduring presence in Rosario's festivals and family gatherings, its origins remain undocumented, preserved only through oral tradition passed down across generations. This makes the heritage particularly vulnerable to erosion as modernization and commercialization reshape cooking practices, ingredient sourcing, and intergenerational transmission. The present study addresses this gap by explicating the significance of *Sinukmani* to Rosario's culinary heritage through a qualitative narrative approach. Drawing from the lived experiences of local makers and vendors, the research investigates its origin and history, meaning and representation, variations and local adaptations, and the pressures of modernization and commercialization, with implications for Rosario's cultural identity. Ultimately, the research seeks to document this orally transmitted heritage and contribute to its preservation for future generations.

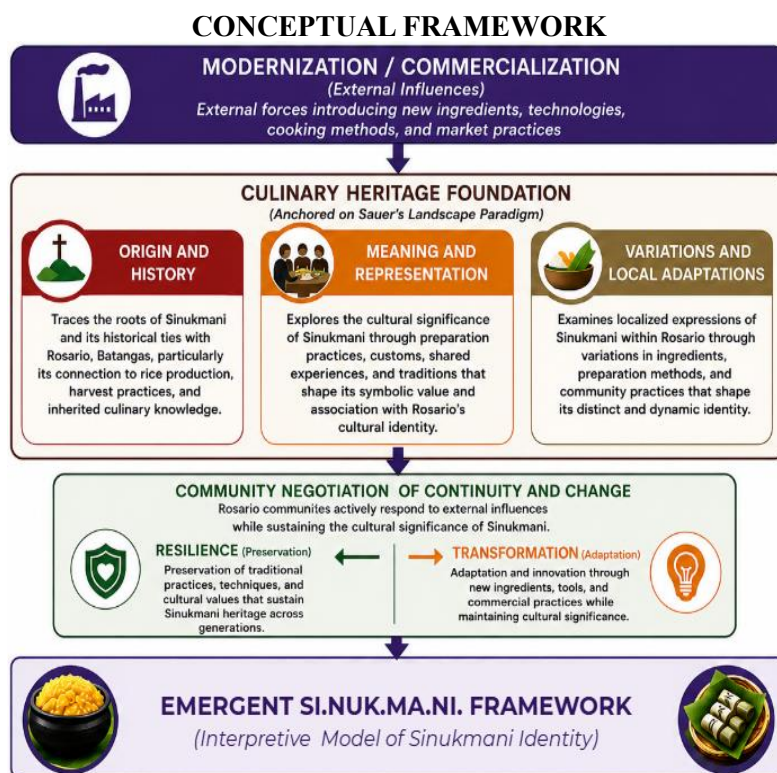


Figure 1. Conceptual Framework

Figure 1 presents the conceptual framework, anchored on Sauer's landscape paradigm. The framework identifies three foundational dimensions of culinary heritage—origin and history, meaning and representation, and variations and local adaptations—that provide the analytical basis for understanding *Sinukmani* as a living culinary heritage of Rosario, Batangas.

Origin and History examines *Sinukmani*'s historical ties to agricultural traditions, particularly rice production, harvest practices, and inherited culinary knowledge. Meaning and Representation explores its cultural significance through community practices and shared experiences. Variations and Local Adaptations examines how changes in ingredients, preparation methods, and community practices create localized expressions within Rosario. This study adapts Sauer's concept of areal differentiation by focusing on intra-community adaptations rather than geographic comparison.

Modernization and commercialization serve as external influences that interact with *Sinukmani*'s heritage foundation, introducing new ingredients, technologies, and market practices. These generate community responses through resilience—the preservation of traditional practices—and transformation—adaptation and innovation while maintaining cultural significance.

These dimensions and processes guided the analysis of participants' narratives regarding the continuity and transformation of *Sinukmani*. The resulting interpretations seek to develop the SI.NUK.MA.NI. framework, which represents *Sinukmani*'s contribution to Rosario's identity through unity, heritage, distinction, and continuous development.

Objectives

In explicating the culinary heritage significance of the *Sinukmani* to the Municipality of Rosario, Batangas, the present study sought to answer the following questions:

1. What is the significance of the culinary heritage of *Sinukmani* in terms of its:
 - 1.1 Origin and history
 - 1.2 Meaning and representation
 - 1.3 Variations and local adaptations
 - 1.4 Modernization and commercialization?
2. What are the implications of *Sinukmani*'s culinary heritage to Rosario identity?

2. Materials and Methods

Research Design

The current study employed a qualitative narrative design to explore the cultural heritage significance of *Sinukmani* in Rosario, Batangas. Narrative research seeks to understand how individuals make sense of their lived experiences and the meanings they attach to these experiences through storytelling (Kim, 2016). This design allowed for an in-depth examination of how *Sinukmani*, as a traditional delicacy, connects individuals to their heritage and local identity. By capturing personal stories from key informants, the study aimed to uncover the deeper meanings attached to *Sinukmani* and how it reflects the evolving cultural landscape of Rosario.

Participants

This study involved ten (10) key informants purposively selected based on their direct involvement in the traditional preparation and production of *Sinukmani*, deep knowledge of local culinary practices, and/or substantial roles in tourism initiatives that promote *Sinukmani* as a cultural and gastronomic symbol. Participants were identified with the assistance of local government officials and barangay leaders. The participants included home-based cooks, market vendors, business owners, and a tourism officer, allowing for a broad range of perspectives from various sectors of the community.

Instruments

The researchers used face-to-face semi-structured interviews. This method offers the opportunity to build rapport with respondents and gain a deeper understanding of their experiences and perspectives, including nonverbal cues that may not be captured through other methods (Bhasin, 2023). The

conversational flow also facilitates immediate feedback, allowing researchers to adapt their approach in real time. This method was well-suited for exploring informants' experiences, emotional connections, and evolving practices related to *Sinukmani*.

Procedure

The researchers first gathered the names of potential participants from different barangays and reached out to them through Facebook Messenger. Formal letters requesting consent to participate in semi-structured interviews were then sent. Once participants were identified, the researchers coordinated with them to schedule interviews at a convenient time. A consent form and information sheet were provided, detailing participants' involvement and the types of questions that might be asked. To ensure confidentiality, the researchers used codes instead of names. Permission was sought to record the interviews for accurate data capture. All audio recordings and transcripts were stored on a password-protected device accessible only to the researchers.

Data Analysis

Audio recordings were transcribed verbatim and checked for accuracy. Data were analyzed using thematic analysis within a narrative inquiry framework, ensuring that individual stories remained intact while recurring patterns were identified across the dataset. The analysis followed Braun and Clarke's (2006) six-phase approach: familiarization with data, initial coding, searching for themes, reviewing themes, defining and naming themes, and producing the final analysis. Coding was conducted manually, with researchers independently reviewing transcripts before convening to compare codes and resolve discrepancies through discussion.

To ensure trustworthiness, the study employed Lincoln and Guba's (1985) criteria: credibility through member checking; transferability through thick description of context and participant quotes; dependability through an audit trail documenting analytical decisions; and confirmability through reflexive journaling and peer debriefing among research team members.

Ethical Considerations

In conducting this study, several ethical considerations were carefully observed to uphold the integrity of the research process and ensure respectful engagement with the community. Before any data collection, all participants were provided with a clear explanation of the study's objectives, scope, and procedures. Informed consent was obtained, with assurances that participation was entirely voluntary and that individuals had the right to withdraw at any stage without penalty.

The researchers maintained honesty about the study's aims and methods, particularly how participants' narratives would contribute to a deeper understanding of *Sinukmani* as a cultural property. Special attention was given to cultural sensitivity, acknowledging the symbolic and emotional weight that *Sinukmani* holds within the community. Interactions with participants were carried out with full respect for local customs, values, and traditions.

To ensure participant privacy, confidentiality and anonymity were strictly upheld. All data were securely stored and accessible only to the research team. Identifiable information was removed from transcripts and reports; instead, general descriptors or pseudonyms were used in the presentation of findings.

In line with ethical practices in participatory research, community members were invited to review and provide feedback on interpretations related to their contributions. This collaborative approach fostered trust and ensured that their voices were authentically represented. The researchers are committed to sharing the final results with both the participants and the wider community in a manner that honors and preserves their cultural heritage.

3. Results

3.1 Significance of the Culinary Heritage of *Sinukmani*

Table 1.1 Significance of the Culinary Heritage of *Sinukmani* in Terms of Its Origin and History

Theme	Description	Representing Statements
Of Bountiful Harvests and Heritage	The deep-rooted history of <i>Sinukmani</i> connects with Rosario being an agricultural town. Initially tied to the harvest season, it symbolized gratitude for a bountiful crop and later became a staple in large celebrations like fiestas. Over time, <i>Sinukmani</i> has evolved into a cultural heritage that reflects the prosperity of the town, particularly its rich rice cultivation tradition.	<i>"Ang alam ko, noon pa man, sa mga ninuno namin, partena ng tradisyon ang Sinukmani. Madalas itong inihahanda kapag may anihan. Parang pasasalamat sa magandang ani ng palay. Unti-unting naging pangmalakihan na ang pagluluto nito tuwing fiesta, kaya't naging tatak na ito ng Rosario." (Sinukmani 9)</i>
		<i>"Ang pagsiSinukmani sa Rosario ay may mahabang kasaysayan Ipinapasa-pasa na po ito sa mga henerasyon. Kwento ng aking lola, mula pa daw sa mga unang naninirahan dito sa Rosario, ay may Sinukmani na. Isang paraan daw ito ng pagpapasalamat, pagdiriwang, at pagpapakita ng pagkakaisa." (Sinukmani 7)</i>
		<i>"Matagalnapanahonna ang Sinukmanisa Rosario. Sabi ng mga matatanda, simula pa noong panahon ng mga lola at lolo natin, may nagtitindig na ng palengke. Noon, mas simple ang paggawa ng Sinukmani. Pero kahit simple, masarap na masarap na." (Sinukmani 6)</i>
		<i>"Ang Sinukmani ay nagpapakita ng pagiging mayaman ng bayan natin sa bigas." (Sinukmani 10)</i>
History in the Shadows	The history of <i>Sinukmani</i> , while deeply embedded in the culture of Rosario, remains largely unknown or unclear to many. Despite its significance in local traditions and festivals, the exact origins of <i>Sinukmani</i> are often forgotten or overlooked, with the practice being passed down through generations more as a cherished custom than a documented historical event.	<i>"Hindi ko maalala, pero ang pagsiSinukmani dito sa Rosario ay kumbaga ay nagging tradisyon na tuwing kami ay mag pifiesta ay di kami ay nagawa ng Sinukmani at ipinaparadasa bayan." (Sinukmani 4)</i>
		<i>"Ang totoo po niyan, hindi ko alam ang eksaktong pinagmulan. Ang alam ko lang po ay ipinamana na ito sa amin ng aming mga ninuno. Isang tradisyong pinagyayaman at pinangangalagaan ng mga taga-Rosario sa paglipas ng panahon." (Sinukmani 5)</i>
		<i>"Hindi ko alam kung saan nagsimula pero sa aking pamamalagi dito sa Rosario ay napakatagal na itong nagsimula. Basta ang masisigurado ko ay galing ito sa pamana." (Sinukmani 8)</i>

Theme	Description	Representing Statements
Generations of Tradition	<i>Sinukmani</i> has become an integral part of family life and cultural heritage in Rosario. Passed down through generations, the act of preparing and sharing <i>Sinukmani</i> not only honors past generations but also strengthens familial ties through the shared experience of food and celebration.	<i>Kung tutuusin ang paggagawa naman ng Sinukmani ay nagsimula Talaga sa bawat tahanan dahil meron tayo matatanda na sila ang nagsimula o nagpasimula in most cases ng paggawa ng Sinukmani at salinlahi.</i> (Sinukmani 1)
		<i>"Naging parte na ng pamumuhay ko ang pagluluto ng Sinukmani dahil mula pa noong bata ako ay ito na ang ginagamit namin sa mga okasyon at handaan. Dati, tinuruan ako ng nanay ko, kaya naging paraan naman ito para kumita. Hanggang ngayon, ito na yung kinabubuhay ko, kaya nasanay na ako sa gawaing ito."</i> (Sinukmani 9)
		<i>"Saka itong paggagawa ko ng Sinukmani ay natutunan ko pa sa aking magulang sa aking ina. Siya ang nagturo sa akin. Kumbaga minana ko itong kanyang style ng paggagawa ng Sinukmani."</i> (Sinukmani 4)
Occasionally Perennial Delight	<i>Sinukmani</i> is a staple treat traditionally enjoyed by Rosarians during special occasions. Its enduring presence across generations and in various celebrations reflects its deep-rooted connection to the community's shared heritage.	<i>"Siguro yung madalas po itong inihahanda sa mga espesyal na okasyon, tulad ng mga kapistahan at pagtitipon-tipon ng pamilya minsan kapag undas ganyan."</i> (Sinukmani 5)
		<i>Parang hindi na maaalala na ang mga taga-Rosario ang Sinukmani. Di ba ga nga ito e kinaugaliaan na kaya ang Sinukmani ay parte na ng kahit anong tradisyon na mas madalas kinakain tuwing noche buena, media noche lalo na kapag fiestahan."</i> (Sinukmani 2)
		<i>"Ang Sinukmani ay kadalasang kinakainsa mga espesyal na okasyon, tulad ng kaarawan, kasal, at pista. Ito ay simbolo ng pagdiriwang at pagsasama-sama."</i> (Sinukmani 6)
		<i>"Mahalaga ang Sinukmani sa Rosario dahil ito ang laging handa tuwing may mga okasyon kagaya ng birthday, pasko at bagong taon. Para sa akin, hindi kumpleto ang piyesta o kahit simpleng salu-salo kung walang Sinukmani, dahil parte ito ng kultura ng bayan ng Rosario."</i> (Sinukmani 9)

Table 1.1 presents the themes identified during the interview with the key informants in terms of origin and history. These included Of Bountiful Harvests and Heritage, History in the Shadows, Generation of Tradition, and Occasionally Perennial Delight.

The origins of *Sinukmani* are deeply intertwined with the agricultural heritage of the municipality of Rosario. As a traditional rice delicacy, *Sinukmani* initially functioned as an expression of gratitude for a successful harvest, firmly embedded within the town's longstanding history of rice cultivation. Over time, it has evolved beyond its original ritual context to become a central element in communal festivities,

symbolizing both material abundance and the intergenerational transmission of cultural practices. Oral histories from local residents provide valuable insights into this tradition. One respondent observes, “Noon pa man, sa mga ninuno namin, parte na ng tradisyon ang Sinukmani. Madalas itong inihahanda kapag may anihan. Parang pasasalamat sa magandang ani ng palay” (Sinukmani 9), underscoring the practice’s roots in harvest-related celebrations. Furthermore, another testimony affirms the expansion of *Sinukmani*’s role in community life: “Kwento ng aking lola, mula pa daw sa mga unang naninirahan dito sa Rosario ay may Sinukmani na. Isang paraan daw ito ng pagpapasalamat, pagdiriwang, at pagpapakita ng pagkakaisa” (Sinukmani 7). These accounts reveal that the preparation of *Sinukmani* has historically functioned not merely as a culinary tradition but as a communal act of solidarity and thanksgiving.

Table 1.2 Significance of Culinary Heritage of *Sinukmani* in Terms of its Meaning and Representation

Theme	Description	Representing Statements
The Family that Sticks Together	<i>Sinukmani</i> represents the bonds that hold families together. The sticky texture of <i>Sinukmani</i> mirrors the close-knit relationships it celebrates. Passed down through generations, its preparation is a tradition that fosters unity and shared values.	“Tsaka itong paggagawa ko ng Sinukmani ay natutunan ko pa sa aking magulang sa aking ina. Siya ang nagturo sa akin. Kumbaga minana ko itong kanyang style ng paggagawa ng Sinukmani. ” (Sinukmani 4)
		“Dahil laki nga ako sa mahilig gumawa at kumain ng Sinukmani, though hindi ko siya gaano kapaborito, alam ko na ito ay isang tinatangkilik namin. Tsaka may kasabihan na kapag marunong ka kumain ng ganitong kakanin, sticky ang relationship ng pamilya. ” (Sinukmani 1)
		“Kwento ng aking lola, mula pa daw sa mga unang naninirahan dito sa Rosario ay may Sinukmani na. Isang paraan daw ito ng pagdiriwang, pagsasalo-salo, at pagpapakita ng pagkakaisa. ” (Sinukmani 7)
		“Kapag meron kaming mga gatherings sa bahay or mga reunion, hindi nawawala iyon kasi nandiyan pa rin kami sa paniniwala na kapag may ganitong klaseng pagkain, mas masarap ang pagiging together namin. Parang probably there is a psychological basis to that.” (Sinukmani 1)
Love Through Tradition	For the people of Rosario, <i>Sinukmani</i> is not just a food but a symbol of love, both familial and cultural. The act of preparing, sharing and enjoying this delicacy is an expression of deep affection and connection, representing not only family bonds but also the preservation of the cultural heritage of the community.	“Siguro yung madalas po itong inihahanda sa mga espesyal na okasyon, tulad ng mga kapistahan at pagtitipon-tipon ng pamilya minsan kapag unda ganyan. Isang paraan ito ng pagpapakita ng pagkakaisa at pagmamahal naming hehe. ” (Sinukmani 5)
		“Bahagi na po ito ng aking pagkatao, ng aking kultura, at ng aking pamilya. Hindi lang po ito pagkain; ito ay tradisyon, alaala, at

Theme	Description	Representing Statements
		<i>pagmamahal.</i> ” (Sinukmani 7)
		<i>“Dala na rin kasi ’yun (paggawa ng Sinukmani) ng aking pagmamahal sa ating kultura at tradisyon. Isang paraan ko rin yun para ... maibahagi sa susunod na henerasyon. Yung pagsiSinukmani din ang isa sa mga sumuhay sa aming pamilya noon talaga, kaya malaki yung naging bahagi niya sa buhay ko.</i> ” (Sinukmani 3)
Sweet Unity, Shared Memories	<i>Sinukmani fosters a sense of community, cooperation, and togetherness for the people of Rosario. Whether through the bayanihan spirit, the unifying experience of shared meals, or the idea of different ingredients coming together, the act of preparing and sharing this dish becomes an embodiment of collective unity and shared experiences.</i>	<i>“Part ng pakikipag-bayanihan natin dahil lalo kapag Sinukmani Festival nakikita natin buong kalsada ay napupuno at pinapakain ang mga tao ng libreng Sinukmani, so yun ang ilang tradisyon.”</i> (Sinukmani 1)
		<i>“Kapag may mga handaan, nandoon din siya. Yung pagiging espesyal niya, hindi kasi nasusukat sa isang lugar lamang... yung pagiging espesyal niya ay sa kung paano siya ginagawa at pagbubuklod-buklod yung mga tao para mag-enjoy.</i> ” (Sinukmani 1)
		<i>“Ang aming pagkakaisa, parang Sinukmani pinagsamasamang ingredients ay makakabuo ng isang masarap na panghimagas o merienda o pagkain sa kahi tanong oras.”</i> (Sinukmani 8)

Table 1.2 presents the theme identified during the interview with the key informants in terms of meaning and representation. These include *The Family that Sticks Together*, *Love Through Tradition*, and *Sweet Unity, Shared Memories*.

Sinukmani is not merely a dish but a cultural symbol that embodies the strength of family bonds. The sticky texture of the rice is a direct metaphor for the closeness and unity that are central to familial relationships. This delicacy is steeped in shared values and practices, passed down through generations, and its preparation is inherently a communal activity. As one respondent noted, *“Dahil laking-ako sa mahilig gumawa at kumain ng Sinukmani, though hindi ko siya kapaborito, pero alam ko na ito ay isang tinatangkilik namin sa kanin at may kasabihan: kapag marunong ka kumain ng ganitong kanin, sticky ang relationship ng pamilya.*

For the people of Rosario, *Sinukmani* represents more than just a food item; it stands as a symbol of love, familial ties, and cultural identity. The preparation, sharing, and enjoyment of this delicacy reflect deep-rooted familial connections and communal values, serving as a conduit for the preservation of cultural heritage through shared practices and traditions. One respondent expressed this idea by stating, *“Hindi lang po itopagkain; ito ay tradisyon, alaala, at pagmamahal”*, emphasizing that *Sinukmani* holds a significance that transcends its role as mere sustenance. It embodies a connection to both the past and the present, a reminder of the love and memories that are passed down through generations.

Sinukmani fosters a profound sense of community, cooperation, and unity among the people of Rosario. The preparation of this traditional dish often reflects the spirit of bayanihan, where individuals

come together to assist one another. The act of preparing and sharing *Sinukmani* provides opportunities for collective experiences that strengthen relationships within families and communities. As one respondent shared, “*Yung pagiging espesyal niya ay sa kung paano siya ginagawa at paghubuklod-buklod yung mga tao para mag-enjoy*,” emphasizing how the process of preparing and enjoying *Sinukmani* is a unifying experience that brings people together.

Table 1.3 Significance of Culinary Heritage of *Sinukmani* in Terms of its Variations and Local Adaptation

Theme	Description	Representing Statements
Simple and Pure	Using pure, whole glutinous rice in making <i>Sinukmani</i> in Rosario sets it apart from other places where ground glutinous rice is often used. This traditional method preserves the dish's authentic texture and flavor, making Rosario's <i>Sinukmani</i> uniquely rich and true to its cultural roots.	“ <i>Ah, oo, ang Sinukmani dito ay purong malagkit na bigas. Dun naman sa ibang lugar ay parang giniling... yung ginigiling ang malagkit, dito ay hindi ginigiling ang malagkit. purong malagkit laang na bigas.</i> ” (Sinukmani 2)
		“ <i>Nakikita ko namang ganyan laang din naman lagi ang Sinukmani sa ibang lugar eh... nagkakaiba laang siguro eh sa kakanin na gamit dahil ang iba e hindi buong malagkit na bigas e miminsan e ginigiling.</i> ” (Sinukmani 3)
Over the Top	From being a traditional recipe, <i>Sinukmani</i> has evolved into a more dynamic dish over the years through modern additions and creative toppings. The changes showcase the fusion of tradition and modernity, demonstrating how culinary heritage adapts to contemporary tastes while retaining its essence.	“ <i>Ngayon may iba'tiba na nga ng pagluluto bukod sa madali ngayon yung ingredients like cheese, buko, condensada, etc. so since ngayon nadagdagan mas napapasarap.</i> ” (Sinukmani 1)
		“ <i>Siguro e syang nagkaiba ay kung anu-anong inilalagay sa ibabaw na toppings kagaya ng mga mani, pinipig, nips, mga bukayo o kaya mga kaong tsaka langka kung tawagin dahil nga may mga nauusong bagay daw ipares sa Sinukmani.</i> ” (Sinukmani 2)
		“ <i>Siguro yung mga malaking experience na matagal ng panahon nagluluto, feel ko yung pinaka basic steps halos pareho lang naman eh nagkaiba na lang yun kung may idadagdag ka Talaga na ingredients sa Sinukmani</i> ” (Sinukmani 1)
Authentic Continuity	In Rosario, the process of making <i>Sinukmani</i> has stayed true to its roots, following the same traditional methods passed down through generations. This approach highlights the community's	“ <i>Inuuna ko munang isaing ang malagkit na bigas, at magkakayod ako ng niyog... Tapos, pag nakapagsalang ako ng tulyase papakuluan ko naman ang gata. Habang nakulo ang gata, lalagyan ko ito ng asukal at ng kaunting asin... Tsaka ko naman ilalagay yung sinaing kong malagkit at ng nailagay ko. Tuloy-tuloy lang ang halo hanggang sa magkapit-kapit ito.</i> ” (Sinukmani 2)

Theme	Description	Representing Statements
	commitment to preserving the original flavors and cultural essence of the beloved delicacy.	<i>“Sa proseso naman ng paggagawa ay ang una kong inihahanda ay ang malagkit. Huhugasan ko muna at tsaka ko isasaing... Ako’y nagkakayod na ng niyog. Pag nakayod ko, aking gagatain, at nang lumabas ang maraming gata...Tutunawin ko muna yang sangkaka. Pag natunaw ang sangkaka, tsaka ko ilalagay itong gata at hahaluin para lumahok at lalagyan ko ng asin at kaunting asukal.. Tuloy ang halo at nang gumanda ang Sinukmani. Pag kita mong medyo luto na ay hihinaan mo na ang apoy at iyo munang takluban..” (Sinukmani 6)</i> <i>"edi bago ako magsimula ang ginagawa ko sa bigas na malagkit ay di akin munang ibinababad sa tubig..di yang gata aking kinakayod mano mano. Bago akoy nagawa din ng latik na sya kong maitoppings... Isasalang ang malagkit na bigas sa apoy ng maluto yung anay isasaing mo... Pagkatapos, akin nang isasalang ang gata at asukal. Hahaluin nang mahinahon hanggang sa kumulo at maglahok na silang dalawa. Sunod ay di aking ilalahok na ang malagkit na isinaing, bago tuloy-tuloy pa rin ang halo ng hindi tuong mangapit sa tulyase. Pagka medyo brown na ang kulay at nagkakapit-kapit na ang malagkit, ibig sabihin noon ay sya ay luto na.." (Sinukmani 10)</i>

Table 1.3 presents the theme identified during the interview with the key informants in terms of variations and local adaptations. This includes the Simple and Pure, Over the top and Authentic Continuity.

Rosario’s *Sinukmani* stands out for its deep commitment to tradition, particularly in its use of whole glutinous rice instead of the ground variety commonly found in other regions. This method preserves the dish’s authentic texture and rich flavor, as locals often emphasize, *“Dito ay hindi ginigiling ang malagkit, purong malagkit laang na bigas.”* The use of whole rice results in a chewier, more satisfying texture that distinguishes Rosario’s *Sinukmani* from other regional versions. This approach is a direct reflection of the community’s dedication to keeping their culinary traditions intact.

Sinukmani, a beloved traditional dish, has undergone significant evolution over the years, embracing modern influences while maintaining its cultural roots. Originally prepared with basic ingredients like glutinous rice, coconut milk, and brown sugar, *Sinukmani* has evolved into a dish that incorporates modern flavors and ingredients, such as cheese, condensed milk, and coconut strips. As one respondent shared, *“Ngayon may iba’t iba na nga ng pagluluto, bukod sa madali ngayon yung ingredients like cheese, buko, condensada, etc., so since nadagdagan, mas napapasarap.”* This adaptation demonstrates how *Sinukmani* has embraced contemporary tastes while still maintaining its essence. Additionally, the variety of toppings has become a space for culinary creativity, with innovative additions like peanuts, pinipig, nips, candied coconut (bukayo), kaong, and jackfruit. As another respondent noted, *“Siguro eh syang nagkaiba ay kung anu-anong inilalagay sa ibabaw na toppings kagaya ng mga mani, pinipig, nips, mga bukayo o kaya mga kaong tsaka langka.”*

In Rosario, Batangas, the traditional preparation of *Sinukmani* reflects more than just culinary practice—it is a cultural ritual that embodies the town’s respect for heritage. Each step, from soaking glutinous rice to manually extracting coconut milk and stirring over steady heat, has been carefully preserved through generations. As one respondent shared, “*Inuuna ko munang isaing ang malagkit... papakuluan ko naman ang gata... tuloy-tuloy lang ang halo hanggang sa magkapit-kapit ito,*” emphasizing the patience and precision required.

Table 1.4 Significance of the Culinary Heritage of *Sinukmani* in Terms of Modernization and Commercialization

Theme	Description	Representing Statements
Contemporary Conveniences	<i>Sinukmani</i> -making has shifted from labor-intensive methods to more efficient processes aided by modern tools and technologies. While some traditions are preserved, these advancements reflect how modern tools make the cooking process faster and more efficient while maintaining the authenticity of <i>Sinukmani</i> .	“ <i>Lahat ay ginagawa ng kamay kasi di naman uso yung mga makinana para samadalingprosesoinabotnaminyung mga ganun. Ngayon po, may mga makabagong kagamitan na, syempre nakakatulong para mapabilis ang paggawa...</i> ” (Sinukmani 5)
		“ <i>Naiiba laang ay kung saan ka nagluluto, syempre may gasul na hindi na kagaya dating kailangan mo pang mag siga ng kahoy na tamang apoy laang</i> ” (Sinukmani 3)
		“ <i>Pinapanatili pa rin po namin ang mga tradisyonal na paraan, pero may mga modernong gamit na rin po kami para mapabilis ang proseso.</i> ” (Sinukmani 7)
		“ <i>Ngayon, may mga gamit na tulad ng coconut milk in cans at LPG, non-stick cooking pots, ganyan. Kahit mga measuring cup ginagamitan na e para mas timbang yung lasa kaya’t mas madali at mabilis.</i> ” (Sinukmani 9)
<i>Sinukmani</i>, a source of income	What was once a family dish shared during special occasions is now a vital source of income for many families in Rosario. The preparation and sale of <i>Sinukmani</i> are not just business ventures but are deeply embedded in the identity and heritage of the people who continue to pass down the craft.	“ <i>Naku, anak, malaki ang bahagi ng Sinukmani sa buhay ko. Simula bata pa ako, nakikita ko na ang mga magulang ko na gumagawa ng Sinukmani. Para bang nakaukit na sa puso ko ang amoy at lasa ng Sinukmani. Hanggang ngayon, kahit matanda na ako, patuloy pa rin akong nagbebenta ng Sinukmani. Para sa akin, hindi lang ito negosyo, Kundi parte na ng aking pagkakakilanlan.</i> ” (Sinukmani 6)
		“ <i>Gawa ng siya ang number 1 na binibiling kakanin dito. Siyang palaging binibiling kakanin dito, laging hinahanap ng mga dumadayo dahil din nga sa Sinukmani Festival at nadidiscoversa sa ibang tao.</i> ” (Sinukmani 3)
		“ <i>Malaki, hijo. Bata pa lang ako, kasama na ng pamilya namin ang Sinukmani sa mga okasyon—fiesta, binyag, o kahit simpleng salu-salo. Ngayon, ito ang isa sa mga</i>

Theme	Description	Representing Statements
		<i>pinagkukunan ko ng kabuhatan.</i> ” (<i>Sinukmani</i> 9)

Table 1.4 presents the themes identified during the interview with the key informants in terms of modernization and commercialization. These include the Contemporary Conveniences and the Source of Income.

People in Rosario, Batangas, have differing perspectives on how *Sinukmani* should be prepared, reflecting a broader tension between tradition and modernization. While many locals view traditional methods as vital cultural expressions, others appreciate the efficiency and consistency brought by modern tools. Respondents noted that using gas stoves, non-stick pans, and pre-packaged ingredients like canned coconut milk has streamlined the process, making it more suitable for today’s fast-paced lifestyles. As one shared, “*Ngayon po, may mga makabagong kagamitan na, siyempre nakakatulong para mapabilis ang paggawa.*” This shift has allowed more people to produce *Sinukmani* with ease and uniform quality.

The transformation of *Sinukmani* from a traditional family delicacy into a vital economic asset reflects the evolving role of food heritage in the lives of the people of Rosario, Batangas. Historically prepared during special occasions and communal gatherings, *Sinukmani* has retained its cultural value while simultaneously adapting to meet the livelihood needs of many locals. For some, the dish remains an emotional anchor, tied to memories and identity. One respondent shared, “*Naku, anak, malaki ang bahagi ng Sinukmani sa buhay ko... Para sa akin, hindi lang ito negosyo, Kundi parte na ng aking pagkakakilanlan,*” emphasizing that making and selling *Sinukmani* is not merely a form of income—it is a personal and cultural legacy passed down through generations.

3.2 The Implications of *Sinukmani*’s Culinary Heritage to Rosario’s Identity

The findings reveal that *Sinukmani* functions as more than a local delicacy; it operates as a tangible and symbolic anchor of Rosario’s collective identity. Its presence in festivals, familial gatherings, and daily economic life positions it as a unifying cultural element that connects past and present generations. The community’s simultaneous preservation of traditional methods and adoption of modern practices reflects a dynamic identity—one that honors agricultural roots while navigating contemporary change.

Through the analysis of participant narratives, the study developed the **SI.NUK.MA.NI. framework**, named after the syllabic structure of *Sinukmani* itself. Each dimension emerged from the data as follows:

- **SI (*Simbolo ng Pagkakaisa*)** reflects the communal solidarity and familial bonds evidenced in collective preparation and festival participation.
- **NUK (*Nukal sa Pamana*)** captures the agricultural origins and intergenerational transmission that anchor *Sinukmani* to Rosario’s history.
- **MA (*Maitatangi*)** recognizes the community’s adaptive creativity in recipe variation while maintaining core identity.
- **NI (*Nililinang*)** documents the selective incorporation of modern tools and commercial practices.

These dimensions demonstrate that culinary heritage is not a static legacy but a living resource that reinforces communal pride and positions Rosario as a steward of distinctive cultural traditions.

4. Discussion

The findings of this study highlight that the culinary heritage of *Sinukmani* in Rosario is deeply rooted in agricultural tradition and sustained through intergenerational practice. Originating as an expression of gratitude for bountiful rice harvests, *Sinukmani* has evolved from a harvest ritual into a staple of communal celebration, reflecting how food traditions adapt while maintaining core meaning.

This transformation aligns with Zocchi et al.'s (2021) understanding of culinary heritage as encompassing both tangible and intangible elements that continuously interact with local conditions.

The study also reveals a tension central to intangible heritage preservation: the absence of documented origins. Participants consistently acknowledged that *Sinukmani*'s history is preserved only through oral transmission—a pattern that places the tradition at risk as generational practices shift. This "history in the shadows" underscores the fragility of orally transmitted heritage and the urgency of documentation, particularly as modernization and commercialization accelerate change.

Sinukmani further functions as a mechanism of strengthening familial, intergenerational and community ties. Its preparation and sharing strengthen familial bonds and community solidarity, with the sticky texture itself serving as a metaphor for relational closeness. The *bayanihan* spirit evident in collective cooking and festival participation illustrates how culinary heritage operates as lived social practice rather than a static cultural artifact.

The coexistence of resilience and transformation in *Sinukmani* practice validates the study's conceptual framework. Traditional methods—whole glutinous rice, manual coconut extraction, wood-fire cooking—persist alongside gas stoves, canned milk, and creative toppings. This duality does not indicate heritage erosion but rather its dynamism: the community selectively integrates innovation while preserving meaning. The emergent SI.NUK.MA.NI. framework captures this dialectic, offering a transferable model for understanding how heritage food systems navigate modernization pressure without sacrificing cultural integrity.

5. Conclusion

Based on the results, the researchers conclude that *Sinukmani* is more than a traditional delicacy — it is a vital expression of Rosario's cultural identity. Rooted in agricultural and communal traditions, it has long symbolized abundance, gratitude, and unity during festive occasions, despite the limited written records of its origin. For Rosarians, *Sinukmani* represents familial bonds and intergenerational solidarity, with its preparation and sharing reinforcing collective memory and cultural values. The continued use of whole glutinous rice highlights a strong commitment to authenticity, while the incorporation of modern ingredients and toppings reflects adaptability to changing tastes and lifestyles. Despite these innovations, the preservation of traditional methods demonstrates a deep respect for culinary heritage as a living tradition that sustains local identity across generations.

The culinary heritage of *Sinukmani* holds profound implications for the identity of Rosario, as reflected in the SI.NUK.MA.NI. framework. Each element—Simbolo ng Pagkakaisa, Nukal sa Pamana, Maitatangi, and Nililinang—captures a unique dimension of how this traditional delicacy reinforces communal bonds, preserves historical and agricultural roots, embraces innovation, and evolves with the times. *Sinukmani* is not merely a local dish but a living cultural symbol that unites generations, strengthens community pride, and reflects Rosario's resilience in preserving its traditions amidst modernization. Through this framework, *Sinukmani* emerges as a vital vessel of cultural memory and a cornerstone of Rosario's evolving identity.

Recommendations

Drawing from the SI.NUK.MA.NI. framework, the following strategies are proposed to preserve and sustain *Sinukmani* as a cultural and culinary heritage:

1. Documentation

- Conduct systematic historical and cultural mapping of *Sinukmani*, including oral history collection from elder practitioners.
- Register *Sinukmani* as a tangible cultural heritage property of Rosario to ensure formal recognition and protection.
- Produce a community recipe journal documenting traditional recipes, family stories, and preparation techniques.

2. Livelihood and Organization

- Establish a *Sinukmani* Makers' Organization to facilitate collaboration, bulk purchasing, shared training, and unified market representation.
 - Improve quality standards, packaging, and shelf-life to expand market reach while maintaining authenticity.
 - Support local rice farmers through direct partnerships to ensure sustainable ingredient sourcing and economic reciprocity.
3. Education and Marketing
- Integrate family-centered events into the *Sinukmani* Festival—cook-offs, storytelling sessions, and intergenerational workshops—to strengthen knowledge transmission.
 - Leverage social media and digital platforms for video tutorials, maker profiles, and direct sales to broaden audience engagement.
 - Develop educational initiatives highlighting farmers' contributions to enhance public appreciation of the agricultural foundation of *Sinukmani* heritage.

References

- Agustin, Z., Camila, M., Francia, Y., & Bermas, J. (2024). From bowl to soul: Exploring the emotional and social role of Kinalas among young Nagueño. *Journal of Ethnic Foods*. <https://doi.org/10.1186/s42779-024-00259-x>
- Assmann, S. (2024). Culinary heritage in Asia: National and regional identities—Reflections from the field. *Routledge Open Research*, 3, Article 6. <https://doi.org/10.12688/routledgeopenres.18143.1>
- Austria, R. B. (2024). Native delicacies of Pangasinan. Pangasinan State University. <https://main.psu.edu.ph/wp-content/uploads/2023/11/Native-Delicacies-of-Pangasinan-2.pdf>
- Barahan, C. F. C. (2023). Impact of rice delicacies among selected areas in the province of Biliran. *OPSearch: American Journal of Open Research*, 2(3), 87–93. <https://doi.org/10.58811/opsearch.v2i3.44>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Brown, A. (2023). Culinary heritage of Mesilla: Women's voices on cooking traditions [Doctoral dissertation, ProQuest Dissertations Publishing].
- Csergo, J. (2018). Food as a collective heritage brand in the era of globalization. *International Journal of Cultural Property*, 25, 449–468. <https://doi.org/10.1017/S0940739118000322>
- Delmonte, D., & Cabaguing, A. (2024). Socio-cultural perspective of fiesta celebration. *International Journal for Multidisciplinary Research*, 6. <https://doi.org/10.36948/ijfmr.2024.v06i01.12707>
- De Villa, B. D. M., Domingo, T. M. M., Ramirez, R. J. C., & Mercado, J. M. T. (2022). Explicating the culinary heritage significance of Filipino kakanin using bibliometrics (1934–2018). *International Journal of Gastronomy and Food Science*, 28, 100522. <https://doi.org/10.1016/j.ijgfs.2022.100522>
- Geyzen, A. (2014). Food studies and the heritage turn: A conceptual repertoire. *Food & History*, 12, 67–96. <https://doi.org/10.1484/J.FOOD.5.108963>
- Kalenjuk Pivarski, B., Grubor, B., Banjac, M., Đerčan, B., Tešanović, D., Šmugović, S., Radivojević, G., Ivanović, V., Vujasinović, V., & Stošić, T. (2023). The sustainability of gastronomic heritage and its significance for regional tourism development. *Heritage*, 6(4), 3402–3417. <https://doi.org/10.3390/heritage6040180>
- Kaluza, J. (2023). Using narrative analysis in qualitative research. *Dovetail*. <https://dovetail.com/research/narrative-analysis/>
- Kim, J.-H. (2016). *Understanding narrative inquiry: The crafting and analysis of stories as research*. SAGE Publications.
- Liba, R. (2017). Native rice delicacies of Naic, Cavite: An exploratory study of gastronomical past, present, and future [Unpublished research paper]. ResearchGate. <https://www.researchgate.net/publication/319626026>

- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.
- Mangundayao, K. L. (2023). Alah Eh, Sinsay Na!: A case study of the strategic development of Batangas Province culinary identity. *International Journal on Hospitality and Tourism Research*, 2(2), 50–69. <https://ijhtr.com/wp-content/uploads/2023/07/4-ijhtr-mangundayao.pdf>
- Mahino, S. G. (2024, March 27). Kakanin: The rich history of the popular Filipino rice snacks, explained. Yahoo! Lifestyle. <https://www.yahoo.com/lifestyle/kakanin-rich-history-popular-filipino-110009153.html>
- Manik, S., Ramani, A., Majumder, R., Hossain, S., & Hazra, T. (2024). Traditional Foods for Festivity: Linking Food Diversity with Socio-Cultural Aspects. In S. Roy, P. Nisha, & R. Chakraborty (Eds.), *Traditional Foods: The Reinvented Superfoods* (pp. 69-88). Springer. https://doi.org/10.1007/978-3-031-72757-3_4
- Mercado, J. M. T., & Andalecio, A. B. P. (2020). Ysla de panciteria: A preliminary study on the culinary heritage significance of pancit using the heritage documentation approach—the case of Luzon Island, Philippines. *Journal of Ethnic Foods*, 7, Article 31. <https://doi.org/10.1186/s42779-020-00057-1>
- Mohd Fikri, N. H., Abdul Rahman, A. E., & Noh, I. (2021). Exploring culinary heritage practices among the younger Chetti generations in Melaka. *Journal of Ethnic Foods*, 8, Article 25. <https://doi.org/10.1186/s42779-021-00101-8>
- Pagano, U. (2023). Sociological explorations of food: Interconnections, aesthetics, and rituals in culinary practices. *Science & Philosophy*, 11(1), 140–157. <https://doi.org/10.23756/sp.v11i1.1218>
- Partarakis, N., Kaplanidi, D., Doulgeraki, P., Karuzaki, E., Petraki, A., Metilli, D., Bartalesi, V., Adami, I., Meghini, C., & Zabulis, X. (2021). Representation and presentation of culinary tradition as cultural heritage. *Heritage*, 4(2), 612–640. <https://doi.org/10.3390/heritage4020036>
- Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). SAGE Publications.
- Romagnoli, M. (2019). Gastronomic Heritage Elements at UNESCO: Problems, Reflections on and Interpretations of a New Heritage Category. *International Journal of Intangible Heritage*, 14, 157–171. <https://doi.org/10.35638/ijih.2019.14.019>
- Sorato, A. (2024). Venetian culinary heritage management: Exploring authenticity in the realm of tourism and cultural identity through a visual analysis (Master's thesis, Ca' Foscari University of Venice). <https://hdl.handle.net/20.500.14247/23934>

High Awareness, Limited Understanding: Assessing Students' Knowledge of the Bill of Rights in a Philippine State University

**Ma. Jilyn C. Niedo, Reyna Mae P. Valencerina, John John R. Lomibao, Ariel S. Bulao,
Ryan Rhy M. Aquino, Danschiel Genre Dean B. Ramos***

College of Criminal Justice Education, Pangasinan State University – Binmaley Campus, Philippines

*Email : dgdramos_bnlly000010@psu.edu.ph

Abstract

Legal literacy is essential to democratic participation, individual protection, and responsible citizenship. Despite the constitutional guarantee of rights, many students remain familiar with legal concepts without fully understanding their meaning and application. This study examined the level of awareness and understanding of the Bill of Rights among university students across multiple campuses of Pangasinan State University. Specifically, it determined students' awareness of constitutional provisions, assessed their level of understanding, and described the distribution of these outcomes when grouped according to selected profile variables. The study employed a descriptive quantitative research design using a structured questionnaire administered to 394 student respondents. Weighted means and descriptive statistics were used to analyze the data. Findings revealed that respondents demonstrated a high level of awareness regarding the Bill of Rights, with an overall mean of 4.06 interpreted as Aware. However, their level of understanding registered only a moderate level, with an overall mean of 2.98 interpreted as Moderate Understanding. Across sex categories, awareness remained consistently high, while understanding showed only modest variation. When grouped according to source of information, respondents relying on news media and online platforms obtained relatively higher awareness and understanding scores than those relying on textbooks and digital sources. The results indicate a clear gap between awareness and understanding. While students are generally familiar with constitutional rights, many may lack the deeper comprehension needed to interpret, apply, and assert these rights in practical situations. The study concludes that legal literacy programs in higher education should move beyond awareness campaigns and prioritize deeper constitutional education through applied learning, critical discussion, and sustained civic instruction.

Keywords: legal literacy; constitutional rights; Bill of Rights; civic education; university students

1. Introduction

Legal literacy remains a fundamental requirement for democratic participation, yet its development within higher education reveals a persistent gap between awareness and understanding. While individuals are presumed to know the law under the principle *ignorantia iuris neminem excusat*, this assumption is rarely met in practice. Many individuals recognize their rights but lack the capacity to interpret and apply them in real-world situations, limiting their ability to exercise these rights effectively.

Human rights are universally recognized as inherent and inalienable, formally articulated in the Universal Declaration of Human Rights and institutionalized through national legal systems. In the Philippines, these protections are embedded in the 1987 Constitution, particularly in the Bill of Rights, which defines the limits of state power and safeguards individual liberties. Despite this strong legal framework, the existence of rights does not guarantee their meaningful understanding or application among citizens.

Empirical studies consistently show that students possess awareness of human rights but lack depth in understanding their meaning and practical implications. Students are generally familiar with the concept of human rights but do not demonstrate comprehensive knowledge of their scope and applicability (Baglari, 2021). Similarly, many learners have heard of fundamental rights yet remain uncertain about their nature, functions, and real-world relevance (Binjha, 2022). This limitation extends to broader civic knowledge, where insufficient understanding of constitutional principles raises concerns

about declining civic competence and engagement (Coggins et al., 2020). These findings suggest that exposure to legal concepts does not necessarily lead to meaningful comprehension.

The issue is further complicated by the increasing reliance on informal sources of information such as media and digital platforms. While these channels expand access to legal information, they often promote fragmented and surface-level knowledge. Students may become aware of their rights through these sources but remain uncertain when required to interpret or apply them. As a result, awareness becomes widespread, but understanding remains limited and inconsistent.

This gap reflects a structural issue in legal and constitutional education. The challenge is not the absence of information but the lack of depth, integration, and application in learning. Without deliberate educational strategies, students may continue to develop only partial legal literacy, which is insufficient for informed citizenship and the effective assertion of rights.

In this context, this study examined the level of awareness and understanding of the Bill of Rights among university students across multiple campuses of Pangasinan State University. It aimed to determine the extent of students' legal literacy, describe patterns across selected demographic variables, and assess whether a gap exists between awareness and understanding. The findings are expected to contribute empirical evidence to ongoing discussions on constitutional education and provide a basis for strengthening legal literacy initiatives in higher education.

Objectives

This study aimed to assess the level of legal literacy of university students with particular focus on their awareness and understanding of the Bill of Rights.

Specifically, it sought to:

- (1) determine the level of awareness of students regarding the provisions of the Bill of Rights;
- (2) assess the level of understanding of students in relation to constitutional rights;
- (3) describe the distribution of awareness and understanding when grouped according to selected demographic variables; and
- (4) identify implications for strengthening legal literacy and constitutional education among university students.

2. Materials and Methods

This study employed a descriptive research design to assess the level of awareness and understanding of university students regarding the Bill of Rights. The design was appropriate as it allowed the systematic collection and analysis of data to describe patterns of legal literacy among the respondents.

The respondents of the study consisted of 394 university students from Pangasinan State University across multiple campuses. The participants were selected using voluntary participation. In terms of demographic characteristics, the majority of respondents were aged 20–22 years old, with a higher proportion of female students. Respondents were distributed across different year levels, providing representation from first-year to fourth-year students.

The primary instrument used in the study was a structured questionnaire consisting of two main parts: awareness and understanding of the provisions of the Bill of Rights. The instrument included 22 indicators corresponding to specific sections of the Bill of Rights. Responses were measured using a five-point Likert scale. For awareness, the scale ranged from 1 (Not Aware) to 5 (Fully Aware). For understanding, the scale ranged from 1 (Very Low Understanding) to 5 (Very High Understanding).

Prior to data collection, the instrument underwent content validation to ensure clarity and relevance of the items. The questionnaire was then administered to the respondents, and participation was voluntary.

The data collected were analyzed using descriptive statistical tools, including frequency distribution and weighted mean. These measures were used to determine the level of awareness and

understanding of students and to describe patterns across demographic variables. The results were presented in tabular form for clarity and comparison.

3. Results

This section presents the level of awareness and understanding of students regarding the provisions of the Bill of Rights based on weighted mean scores. It also describes the distribution of aggregated scores when grouped according to selected demographic variables.

The results showed that students demonstrated a high level of awareness across the provisions of the Bill of Rights, with an overall mean of 4.06, interpreted as “Aware.”

Among the provisions, Section 1 obtained the highest mean score ($M = 4.43$), followed by Section 2 ($M = 4.33$) and Section 9 ($M = 4.29$), all interpreted as “Fully Aware.” Section 12 ($M = 4.23$) and Section 14 ($M = 4.19$) also reflected high levels of awareness.

Other provisions, including Sections 17 ($M = 4.18$), 8 ($M = 4.13$), and Sections 4, 6, and 7 ($M = 4.12$), consistently fell within the “Aware” category. Similarly, Sections 5 and 11 ($M = 4.09$), Section 18 ($M = 4.05$), and Section 10 ($M = 3.98$) indicated that students were generally aware of these constitutional provisions.

Lower mean scores, though still within the “Aware” category, were observed in Sections 13 and 16 ($M = 3.97$), Section 20 ($M = 3.95$), Section 19 ($M = 3.89$), Section 15 ($M = 3.75$), Section 21 ($M = 3.69$), and Section 22 ($M = 3.61$).

Table 1 Level of Awareness of Students on the Bill of Rights

Indicators	Weighted Mean	Description	Rank
Section 1. Due process and equal protection	4.43	Fully Aware	1
Section 2. Search and seizure	4.33	Fully Aware	2
Section 9. Just compensation	4.29	Fully Aware	3
Section 12. Rights of the accused	4.23	Fully Aware	4
Section 14. Presumption of innocence	4.19	Aware	5
Section 17. Self-incrimination	4.18	Aware	6
Section 8. Right to association	4.13	Aware	7
Section 4. Freedom of speech and expression	4.12	Aware	8
Section 6. Liberty of abode and travel	4.12	Aware	8
Section 7. Right to information	4.12	Aware	8
Section 3. Privacy of communication	4.11	Aware	9
Section 5. Freedom of religion	4.09	Aware	10
Section 11. Access to courts	4.09	Aware	10
Section 18. Political detention and servitude	4.05	Aware	11
Section 10. Obligation of contracts	3.98	Aware	12
Section 13. Right to bail	3.97	Aware	13
Section 16. Speedy disposition of cases	3.97	Aware	13
Section 20. Imprisonment for debt	3.95	Aware	14
Section 19. Cruel punishment	3.89	Aware	15
Section 15. Habeas corpus	3.75	Aware	16
Section 21. Double jeopardy	3.69	Aware	17
Section 22. Ex post facto law	3.61	Aware	18
Overall Mean	4.06	Aware	

¹Legend:

4.51–5.00 (Fully Aware);

3.51–4.50 (Aware);

2.51–3.50 (Moderately Aware);

1.51–2.50 (Slightly Aware);

1.00–1.50 (Not Aware)

Following the assessment of awareness, the level of understanding of students regarding the provisions of the Bill of Rights is presented in Table 2. The results revealed that students demonstrated an overall “Average Understanding” of the Bill of Rights, with an overall mean of 2.94.

Section 2 obtained the highest mean score ($M = 3.15$), followed by Section 3 ($M = 3.08$). Sections 4, 7, and 17 shared the same mean ($M = 3.00$), indicating consistent levels of understanding across these provisions.

Sections 1, 5, and 6 followed closely ($M = 2.99$), while Section 8 ($M = 2.97$), Sections 13 and 20 ($M = 2.96$), and Sections 9, 16, and 19 ($M = 2.95$) remained within the “Average Understanding” category.

Lower mean scores were observed in Section 12 ($M = 2.90$), Sections 10 and 11 ($M = 2.89$), Sections 15 and 18 ($M = 2.86$), and Section 21 ($M = 2.80$). Section 22 ($M = 2.69$) also reflected average understanding.

Notably, Section 14 recorded the lowest mean score ($M = 2.02$), interpreted as “Little Understanding,” indicating a gap in comprehension compared to the other provisions.

Table 2 Level of Understanding of Students on the Bill of Rights

Indicators	Weighted Mean	Description	Rank
Section 2. Search and seizure	3.15	Average Understanding	1
Section 3. Privacy of communication	3.08	Average Understanding	2
Section 4. Freedom of speech and expression	3.00	Average Understanding	3
Section 7. Right to information	3.00	Average Understanding	3
Section 17. Self-incrimination	3.00	Average Understanding	3
Section 1. Due process and equal protection	2.99	Average Understanding	4
Section 5. Freedom of religion	2.99	Average Understanding	4
Section 6. Liberty of abode and travel	2.99	Average Understanding	4
Section 8. Right to association	2.97	Average Understanding	5
Section 13. Right to bail	2.96	Average Understanding	6
Section 20. Imprisonment for debt	2.96	Average Understanding	6
Section 9. Just compensation	2.95	Average Understanding	7
Section 16. Speedy disposition of cases	2.95	Average Understanding	7
Section 19. Cruel punishment	2.95	Average Understanding	7
Section 12. Rights of the accused	2.90	Average Understanding	8
Section 10. Obligation of contracts	2.89	Average Understanding	9
Section 11. Access to courts	2.89	Average Understanding	9
Section 15. Habeas corpus	2.86	Average Understanding	10
Section 18. Political detention and servitude	2.86	Average Understanding	10
Section 21. Double jeopardy	2.80	Average Understanding	11
Section 22. Ex post facto law	2.69	Average Understanding	12
Section 14. Presumption of innocence	2.02	Little Understanding	13
Overall Mean	2.94	Average Understanding	

¹ Legend:

4.21–5.00 (Very High Understanding);

3.41–4.20 (High Understanding);

2.61–3.40 (Average Understanding);

1.81–2.60 (Little Understanding);

1.00–1.80 (Very Little Understanding)

To describe the distribution of awareness and understanding of students when grouped according to selected demographic variables, the aggregated scores were examined across categories such as sex and source of information. The results are presented in Table 3.

Table 3. Distribution of Aggregated Scores of Awareness and Understanding by Profile Variables

Profile Variable	Group	Mean Score
Sex	Male	9.60
	Female	16.67
Source of Information	Digital	5.93
	Textbook	8.27
	News	12.60
	Online Platforms	11.47

The results show variations across demographic groups. Female respondents obtained higher aggregate scores compared to male respondents, while students who relied on news and online platforms demonstrated higher scores than those using textbooks and digital materials.

4. Discussion

The findings of this study establish a clear pattern: students demonstrate a high level of awareness of the Bill of Rights, but only an average level of understanding. This indicates that while students are familiar with constitutional provisions, their ability to interpret and apply these rights remains limited. This conclusion is firmly supported by the data, as reflected in the consistently high awareness scores and comparatively lower understanding scores across all sections.

This result challenges a common assumption in legal and civic education that exposure to legal concepts is sufficient to develop comprehension. The findings suggest that awareness does not necessarily lead to understanding, indicating a disconnect between knowledge acquisition and cognitive processing of legal principles. This has implications for existing models of legal literacy, which often equate familiarity with competence.

The pattern observed across specific provisions further supports this conclusion. Rights that are more visible and frequently discussed, such as due process and search and seizure, obtained higher awareness scores. In contrast, more technical provisions, such as double jeopardy and ex post facto laws, consistently ranked lower. This suggests that students' knowledge is shaped by exposure and repetition rather than depth of instruction. This conclusion is supported by the distribution of scores across sections, indicating uneven comprehension of constitutional concepts.

The findings also suggest that students' engagement with information sources may influence their level of familiarity with constitutional rights. Students who relied on news and online platforms obtained higher aggregated scores compared to those using textbooks and other sources. However, this observation is based on aggregated data and should be interpreted as a pattern rather than a definitive causal relationship.

Taken together, these findings indicate that current instructional approaches may be insufficient in developing deeper legal understanding. The results support the hypothesis that students are aware of their rights but lack the ability to fully comprehend and apply them. This highlights the need to reconsider how constitutional education is delivered in higher education institutions.

The implications of these findings extend to both educational practice and research. From an instructional perspective, there is a need to shift from content-based teaching toward application-oriented learning. Strategies such as case analysis, scenario-based exercises, and contextual discussions may help bridge the gap between awareness and understanding. From a research perspective, future studies should examine how different teaching methods influence students' ability to interpret and apply legal concepts. Experimental or quasi-experimental designs may be used to test the effectiveness of interactive and problem-based approaches in improving legal comprehension.

Future research may also explore the role of information sources in shaping legal literacy. Given the observed variations in aggregated scores, further investigation is needed to determine how digital media, formal education, and informal learning environments contribute to students' understanding of

constitutional rights. Longitudinal studies may also be conducted to assess how awareness and understanding evolve over time.

Overall, the study demonstrates that legal literacy cannot be measured solely through awareness. While students are informed about their rights, there remains a need to deepen their understanding to ensure that these rights can be meaningfully exercised. Addressing this gap is essential for strengthening civic competence and promoting informed participation in a democratic society.

5. Conclusion

This study examined the level of awareness and understanding of the Bill of Rights among university students and found a clear gap between familiarity and comprehension. While students demonstrated a high level of awareness of constitutional provisions, their level of understanding remained only average. This indicates that knowledge of rights does not necessarily translate into the ability to interpret and apply them.

The findings highlight that legal literacy among students is characterized by surface-level familiarity rather than deep conceptual understanding. This suggests that current approaches to constitutional education may be effective in introducing legal concepts but insufficient in developing analytical and application-based competencies.

The study also showed that awareness and understanding are not uniformly distributed across demographic groups, indicating that exposure to information sources may influence students' engagement with legal concepts. However, these variations should be interpreted with caution due to the descriptive nature of the data.

Overall, the study underscores the need to strengthen legal education by focusing on deeper comprehension and practical application of constitutional rights. Enhancing students' understanding is essential to ensure that they are not only aware of their rights but are also capable of exercising and defending them in real-world contexts.

Acknowledgements

The authors would like to express their sincere gratitude to Pangasinan State University for its continued support in the conduct of this study. Appreciation is also extended to the College of Criminal Justice Education for providing the academic environment and resources necessary for the completion of this research.

References

- Baglari, N. (2021). A study on the awareness of human rights education among higher secondary students. *Journal of Research in Humanities and Social Science*, 9(7), 76–79. Retrieved June 10, 2026, from <https://www.questjournals.org/jrhss/papers/vol9-issue7/Ser-4/K09077679.pdf>
- Binjha, P. B. (2022). Students' Awareness of Human Rights Education at Higher Secondary School level. *International Journal of Social Science and Human Research*, 05(10), 4746–4749. <https://doi.org/10.47191/ijsshr/v5-i10-46>
- Coggins, P. E., Heuer, J. A., & Anderson, M. A. (2020). A Crisis in Civic Conscience in the United States? Knowledge and Understanding of the U.S. Bill of Rights among a Group of Undergraduate Students Citizens of the United States. *World Journal of Social Science*, 7(1), 12. <https://doi.org/10.5430/wjss.v7n1p12>

Literacy, Ethical Awareness, and Readiness for AI Integration in Lipa City Colleges: Basis for an Institutional AI Policy

April D. Acielo

Director, Lipa City Colleges, Lipa City Batangas Philippines

Email : appleaciolo research@gmail.com

Abstract

This study examined the levels of AI literacy, ethical awareness, and institutional readiness for Artificial Intelligence (AI) integration in higher education and explored the relationships among these variables. Using a quantitative-descriptive design, data were collected from 344 respondents selected through simple random sampling using standardized and researcher-made questionnaires. Statistical tools included frequency, percentage, weighted mean, composite mean, and Pearson's r .

Findings showed that respondents demonstrated satisfactory AI literacy across affective, behavioral, and cognitive dimensions, a high level of ethical awareness, and moderate institutional readiness for AI integration. Significant positive relationships were found among AI literacy, ethical awareness, and institutional readiness, indicating that greater AI competence and ethical understanding are associated with stronger organizational preparedness. It concludes that while respondents are receptive to AI adoption, structured capacity-building initiatives and institutional policy support are needed. An Institutional AI Policy is proposed to promote responsible, ethical, and effective AI integration in academic and research practices.

Keywords: Artificial Intelligence; AI Literacy; Ethical Awareness; AI Readiness; Higher Education; Lipa City Colleges

1. Introduction

Artificial Intelligence (AI) has rapidly evolved from a specialized technological innovation into a transformative force influencing nearly every sector of society, including business, healthcare, science, governance, research, and education. AI-powered technologies such as machine learning, natural language processing, predictive analytics, and intelligent automation have become integrated into everyday life through smartphones, virtual assistants, search engines, and smart devices. As AI continues to reshape human activities, individuals are expected not only to use these technologies effectively but also to understand their capabilities, limitations, and societal implications. Consequently, AI literacy has emerged as one of the essential competencies for the twenty-first century, equipping learners with the knowledge, skills, attitudes, and values necessary to engage responsibly with AI technologies (Ng, 2024). As Masigan (2023) emphasized, governments and educational institutions should leverage AI as a strategic tool for national development rather than merely responding to its disruptive effects.

The growing integration of AI has significantly influenced the educational landscape. AI-powered applications now support personalized learning, intelligent tutoring systems, automated assessment, academic writing assistance, content generation, and administrative decision-making. These technologies have improved instructional efficiency while creating new opportunities for innovative teaching and learning practices. AI systems can generate educational materials, provide immediate feedback, curate learning resources, and support differentiated instruction through natural language processing and machine learning algorithms (Ortiz, 2024). Rather than replacing educators, AI has increasingly been viewed as a complementary tool that enhances teaching effectiveness and student learning when implemented responsibly.

As AI becomes embedded in education, AI literacy has become an indispensable educational outcome. AI literacy extends beyond the technical ability to use AI tools; it encompasses understanding AI concepts, critically evaluating AI-generated outputs, applying AI appropriately, recognizing its limitations, and addressing the ethical implications of AI technologies (Long & Magerko, 2020; Ng et al., 2021). Recent studies have proposed learner-centered AI literacy frameworks that integrate cognitive,

behavioral, affective, and ethical dimensions to prepare individuals for responsible AI engagement (Ng et al., 2023). These frameworks recognize that effective AI literacy requires not only technical competence but also ethical judgment, critical thinking, collaboration, and responsible decision-making in increasingly AI-driven environments.

Despite its transformative potential, AI presents significant ethical, legal, and societal challenges. Concerns regarding algorithmic bias, transparency, misinformation, academic integrity, data privacy, intellectual property rights, and workforce displacement have become central issues in discussions on AI adoption (Davenport & Ronanki, 2018; Manyika et al., 2017). The 2023 AI Index Report further revealed a substantial increase in documented incidents involving the unethical use of AI, underscoring the need for stronger governance and ethical safeguards. Recognizing these challenges, UNESCO (2021), through its *Recommendation on the Ethics of Artificial Intelligence*, established global principles promoting human rights, transparency, accountability, fairness, and responsible AI governance. These recommendations emphasize that educational institutions must cultivate not only AI competencies but also ethical awareness to ensure that AI technologies are used responsibly and sustainably.

Within the Philippine context, AI has gained increasing attention as a strategic enabler of educational innovation. AI technologies have demonstrated considerable potential in enhancing teaching effectiveness, improving administrative efficiency, strengthening research productivity, and supporting institutional decision-making (Giray et al., 2024). Complementing these developments, the Philippine Skills Framework for Analytics and Artificial Intelligence (PSF-AAI), developed through the collaboration of the Department of Information and Communications Technology (DICT) and the Analytics and Artificial Intelligence Association of the Philippines (AAP), provides competency standards that guide workforce development and curriculum enhancement. Likewise, the Commission on Higher Education (CHED) continues to encourage higher education institutions to pursue digital transformation and Education 4.0 initiatives by integrating emerging technologies into instruction, research, and institutional operations. These national initiatives highlight the growing expectation for higher education institutions to develop graduates who are competent, ethical, and prepared for an AI-enabled society.

While these national and international initiatives provide strategic directions for AI integration, empirical evidence regarding AI literacy, ethical awareness, and readiness among students in many Philippine higher education institutions remains limited. Existing studies have largely focused on the technical applications of AI or educators' perspectives, while relatively few have comprehensively examined students' AI literacy by simultaneously considering their cognitive understanding, behavioral practices, affective disposition, ethical awareness, and readiness for responsible AI utilization within specific institutional contexts. Consequently, higher education institutions often lack localized evidence necessary to formulate institutional AI policies, design appropriate capacity-building programs, and implement responsible AI governance.

This gap is particularly relevant to Lipa City Colleges, which recognizes AI as an emerging driver of innovation in instruction, research, and institutional development. As the institution advances its digital transformation initiatives, there is a need to establish baseline evidence regarding students' AI literacy, ethical awareness, and readiness for AI integration. Understanding students' current competencies and perceptions will enable the institution to identify existing strengths, competency gaps, ethical concerns, and professional development needs that can inform institutional planning and policy formulation.

Therefore, this study assesses the extent of AI utilization, AI literacy, ethical awareness, and readiness for AI integration among students of Lipa City Colleges. Specifically, it seeks to generate empirical evidence that will guide the development of an evidence-based AI Training and Development Program and support the formulation of an Institutional AI Policy that promotes ethical, responsible, and effective AI integration in instruction, research, and creative works. By addressing the identified research gap, the study contributes to the growing body of literature on AI literacy in Philippine higher education while providing practical recommendations for institutional policy and sustainable AI implementation.

2. Objectives

1. What is the level of AI literacy of selected college students in terms of:
 - 1.1. Affective learning
 - 1.2. Behavioral Learning
 - 1.3. Cognitive Learning
2. What is the level of ethical awareness of the respondents?
3. What is the perception of the respondents on the level of readiness in AI integration of Lipa City Colleges?
4. Is there a significant relationship between the responses of the respondents in the level of AI literacy, level of ethical awareness and their perception on the level of readiness in AI integration of Lipa City Colleges?
5. Based from the findings of the study, what institutional AI policy should be proposed for a responsible AI use?

3. Materials and Methods

This study employed a quantitative descriptive-correlational research design to examine the extent of AI literacy, ethical awareness, and institutional readiness for AI integration among college students of Lipa City Colleges. The descriptive component was utilized to determine the respondents' level of AI literacy in terms of affective, behavioral, and cognitive learning, as well as their ethical awareness and perceptions of institutional readiness for AI integration. The correlational component was used to determine the relationships among AI literacy, ethical awareness, and institutional readiness.

The population of the study consisted of 3, 204 undergraduate students officially enrolled at Lipa City Colleges during the first semester of SY 2025-2026. From this population, a sample of 344 respondents was selected. The sample size was determined using Raosoft Sample Size Calculator at a 95% confidence level with a 5% margin of error, ensuring adequate representation of the target population.

The study employed simple random sampling to provide every eligible student with an equal opportunity to participate in the research. A master list of enrolled students was obtained from the Office of the Registrar upon approval from the appropriate school authorities. Each student was assigned a unique identification number, and respondents were randomly selected using a computer-generated randomization procedure until the required sample size was achieved. This sampling technique minimized selection bias and enhanced the representativeness of the sample.

Moreover, the standardized AI Literacy Questionnaire (AILQ) retained its original structure as developed and validated by Ng et al. (2023). The researcher-developed sections on ethical awareness and institutional readiness were subjected to content validation by three experts specializing in educational technology, artificial intelligence in education, and research methodology and measurement. The validators evaluated each item based on clarity, relevance, appropriateness, and alignment with the research objectives. Their recommendations were incorporated to improve the wording, organization, and overall quality of the questionnaire before its administration.

Prior to data collection, the researcher secured approval from the appropriate institutional authorities of the institution. Upon approval, respondents were selected through the prescribed sampling procedure. Participants were informed about the purpose of the study, the voluntary nature of their participation, and their rights as research respondents before signing the informed consent form.

Questionnaires were administered through both face-to-face distribution and an online survey platform (Google Forms) to maximize participation and accessibility. Completed questionnaires were checked for completeness before encoding and statistical analysis.

In terms of ethical consideration, this study adhered to the ethical principles governing human participant research. Participation was entirely voluntary, and respondents provided informed consent prior to completing the questionnaire. Participants were informed that they could withdraw from the study at any stage without penalty. The confidentiality and anonymity of all respondents were strictly maintained, and no personally identifiable information was disclosed in any report or publication. All collected data were

securely stored and used exclusively for academic and research purposes in accordance with the Data Privacy Act of 2012 (Republic Act No. 10173).

Lastly, the collected data were analyzed using appropriate descriptive and inferential statistical techniques. Frequency counts, percentages, rankings, weighted means, and composite means were used to determine the levels of AI literacy, ethical awareness, and institutional readiness. Pearson Product-Moment Correlation (Pearson's r) was employed to determine the relationships among the major variables of the study.

4. Results

Table 1 Summary of Findings on the Level of AI literacy of Selected College Students

Level of AI literacy	Composite Mean	VI	R
Affective learning	2.78	Agree	2
Behavioral Learning	2.63	Agree	3
Cognitive Learning	2.91	Agree	1

Table 1 presents the summary of findings on the level of AI literacy of selected college students in terms of affective learning, behavioral learning, and cognitive learning. The overall results reveal that all dimensions obtained verbal interpretations of “Agree,” indicating that the respondents generally possess a positive and acceptable level of AI literacy across the three domains assessed.

Among the indicators, cognitive learning obtained the highest composite mean of 2.91 and ranked first. This finding suggests that the students demonstrate a relatively strong understanding and awareness of Artificial Intelligence concepts, functions, and applications. The result implies that the respondents are knowledgeable about the role of AI in education and are capable of understanding how AI technologies operate and assist in academic tasks. The finding supports the idea that today's college students, being digital natives, are increasingly knowledgeable about emerging technologies and their educational applications. According to studies, cognitive AI literacy is essential in enabling students to critically evaluate and appropriately use AI technologies in academic and professional contexts.

Affective learning ranked second with a composite mean of 2.78 and a verbal interpretation of “Agree.” This indicates that the respondents generally possess positive attitudes, interests, and perceptions toward the use of Artificial Intelligence. The result suggests that students are receptive to integrating AI into their academic activities and recognize its potential benefits in improving learning experiences, productivity, and access to information. Furthermore, the finding implies that students are emotionally and psychologically open to utilizing AI technologies, which is an important factor in technology acceptance and adoption.

Meanwhile, behavioral learning obtained the lowest composite mean of 2.63, although it still garnered a verbal interpretation of “Agree.” This finding indicates that while students are knowledgeable about AI and possess positive attitudes toward it, the actual application and consistent utilization of AI technologies in their academic activities may still be moderate. The lower ranking may imply that students have limited opportunities, resources, or confidence to fully integrate AI into their daily learning practices. It may also suggest that although students understand AI concepts, there remains a need for further training, guidance, and institutional support to strengthen their practical and responsible use of AI tools.

Table 2 Level of Ethical Awareness of the College Student-Respondents in AI

Items	WM	VI	R
I am aware that AI use must be strictly limited to what is necessary to achieve a legitimate goal.	3.38	Strongly Agree	2
I understand that AI systems must undergo risk assessments to prevent individual or societal harm.	3.43	Strongly Agree	1
I believe AI systems should be designed to prevent safety risks or security breaches.	3.33	Strongly Agree	3.5

Items	WM	VI	R
I am aware that vulnerabilities in AI must be mitigated across the AI lifecycle.	3.20	Agree	9.5
I recognize that personal data used in AI systems must be collected, stored, and deleted under robust privacy regulations.	3.20	Agree	9.5
I am familiar with the concept of informed consent as it applies to AI data use.	3.08	Agree	17
I believe decision-making about AI should involve various groups (e.g. developers, users, policymakers).	3.24	Agree	8
I am aware that governance frameworks for AI should evolve based on stakeholder input and changing contexts.	3.06	Agree	18
I understand that humans (individuals or institutions) must be ultimately accountable for AI-based decisions.	3.19	Agree	11.5
I am aware of mechanisms such as audits, oversight, and whistle-blower protections related to AI systems.	2.86	Agree	20
I know that individuals affected by AI decisions should have access to understandable explanations of how those decisions were made.	3.16	Agree	14.5
I acknowledge that transparency levels might vary depending on privacy, security, or safety constraints.	3.18	Agree	13
I believe critical decisions such as those affecting rights—should not be delegated solely to AI.	3.26	Strongly Agree	6
I support the idea that humans must retain the ultimate authority to review or override AI decisions.	3.25	Strongly Agree	7
I am aware that AI technologies must be evaluated for their environmental, social, and economic impact in line with sustainable development goals.	3.33	Strongly Agree	3.5
I believe organizations should monitor AI's long-term sustainability effects.	3.31	Strongly Agree	5
I feel that staff and stakeholders should receive education on AI ethics and rights-based impacts.	3.19	Agree	11.5
I am familiar with concepts such as algorithmic bias, digital literacy, and civic engagement in AI contexts.	2.93	Agree	19
I understand that AI systems must be designed to prevent discriminatory outcomes and ensure equitable treatment for all.	3.12	Agree	16
I acknowledge that inclusive design should consider marginalized groups, languages, genders, ages, and disabilities.	3.16	Agree	14.5
Composite Mean	3.19	Agree	

As shown in the table, the college student-respondents strongly agreed that they understand that AI systems must undergo risk assessments to prevent individual or societal harm, obtaining the highest weighted mean of 3.43 and ranking first among the indicators. This indicates that students possess a high degree of ethical awareness regarding the potential risks and societal implications of artificial intelligence.

In contrast, the respondents only agreed that they are aware of mechanisms such as audits, oversight, and whistleblower protections related to AI systems, obtaining the lowest weighted mean of 2.86 and ranking 20th. This result implies that while students recognize the ethical importance of AI regulation, they are less familiar with the specific governance and accountability mechanisms that ensure AI's ethical deployment. The composite mean of 3.19 signifies that the college student-respondents

agreed on their level of ethical awareness in AI, reflecting a moderate but positive ethical literacy among the group.

Table 3 Level of Readiness of the College Student-Respondents for AI Integration in Lipa City Colleges

Items	WM	VI	R
The institution has sufficient technological resources (computers, internet, and software) to support AI integration.	3.23	Agree	1
The school's digital infrastructure is reliable enough to accommodate AI-based applications.	3.06	Agree	3
The availability of technical support staff is adequate to handle AI-related issues.	3.02	Agree	5
The institution provides access to updated AI tools and platforms.	2.96	Agree	8
Training opportunities are available to enhance AI-related skills.	3.01	Agree	6
The institution supports capacity-building programs related to AI use.	2.97	Agree	7
The institution has clear policies or guidelines for responsible AI use.	3.12	Agree	2
There is a strategic plan for AI integration within the institution.	2.94	Agree	9
The institution fosters a culture of innovation to sustain AI readiness.	3.03	Agree	4
Composite Mean	3.04	Agree	

As gleaned in Table 3, the student-respondents agreed that the institution has sufficient technological resources (computers, internet, and software) to support AI integration, which obtained the highest weighted mean of 3.23 and ranked first among the indicators. This finding indicates that students perceive their institution as technologically equipped and infrastructure-ready to adopt artificial intelligence (AI) in educational processes.

Conversely, the student-respondents agreed the least that there are strategic plans for AI integration within the institution, with a weighted mean of 2.94 and lowest rank of 9. This finding suggests that although the institution may possess sufficient infrastructure, there is a perceived gap in strategic planning and policy direction toward AI adoption.

The composite mean of 3.04 concluded that the college student-respondents agreed on their level of readiness for AI integration in Lipa City Colleges, indicating a moderate yet positive institutional readiness for embracing AI technologies. This suggests that while infrastructure and digital resources are generally in place, strategic, organizational, and policy-level preparations still need strengthening.

Table 4 Relationship Between the Ethical Awareness in AI, Readiness for AI Integration, and AI Literacy

Variable	r-value	p-value	Decision	Interpretation
Ethical Awareness in AI Versus AI Literacy:				
Affective Learning	0.35	1.00E-8	Reject Ho	Highly Significant
Behavioural Learning	0.34	2.00E-8	Reject Ho	Highly Significant
Cognitive Learning	0.47	0.0000	Reject Ho	Highly Significant
Readiness for AI Integration Versus AI Literacy:				
Affective Learning	0.35	1.00E-8	Reject Ho	Highly Significant
Behavioural Learning	0.37	0.0000	Reject Ho	Highly Significant
Cognitive Learning	0.39	0.0000	Reject Ho	Highly Significant

As gleaned in the table, when the responses of the college student-respondents on their level of ethical awareness in AI were compared to their level of AI literacy, the computed r-values of 0.35 for affective learning, 0.34 for behavioral learning, and 0.47 for cognitive learning, with p-values less than 0.01, indicate significant relationships between the two variables. This means that as students' ethical

awareness in AI increases, their literacy in affective, behavioral, and cognitive learning dimensions also tends to improve. Furthermore, the stronger correlation found between ethical awareness and cognitive learning ($r = 0.47$) suggests that students who are ethically aware tend to have a more advanced cognitive understanding of AI.

Finally, when comparing the level of ethical awareness in AI with the level of AI readiness, the computed r -values of 0.35 for affective learning, 0.37 for behavioral learning, and 0.39 for cognitive learning—all with p -values less than 0.01—also show significant relationships between these constructs. This means that higher ethical awareness among students correlates with greater readiness to adopt and engage with AI technologies across emotional, behavioral, and cognitive dimensions.

Summary of the Proposed AI Institutional Policy

The proposed Institutional AI Policy recognizes Artificial Intelligence (AI) as a supportive educational tool that enhances teaching, learning, research, creative works, and institutional operations while preserving academic integrity and human accountability. AI applications, including generative AI platforms, such as ChatGPT, grammar and language enhancement tools, data analysis software, and AI-assisted creative technologies, may be utilized to facilitate idea generation, language improvement, literature searching, data visualization, and other academic or scholarly tasks. However, AI shall function only as an assistive technology and shall not replace human critical thinking, originality, creativity, professional judgment, or decision-making. As a general institutional guideline, AI-generated or AI-assisted content should not exceed 30% of the overall academic, research, or creative output, ensuring that at least 70% of the work reflects the student's or author's original analysis, interpretation, and intellectual contribution. Exceptions may be allowed for courses or projects where AI applications constitute a required learning outcome, subject to the approval of the faculty member or the Research and Creative Works Office.

To promote transparency and responsible AI utilization, all AI-generated or AI-assisted content used in academic requirements, research, creative works, and scholarly publications shall be properly disclosed and acknowledged in accordance with institutional academic integrity guidelines. AI-assisted research involving human participants or sensitive information shall comply with the Data Privacy Act of 2012 (Republic Act No. 10173) and, when applicable, undergo institutional ethics review. Likewise, AI-generated analyses, interpretations, and other outputs must be critically reviewed and validated by the author before submission or publication, with the author remaining fully accountable for the accuracy, originality, and ethical compliance of the work. The policy further promotes the integration of AI literacy and ethics across the curriculum, continuous faculty and student capacity-building initiatives, institutional monitoring of AI use, and periodic policy review to ensure that AI adoption remains aligned with emerging technologies, ethical standards, and national and international regulatory frameworks.

5. Discussion

The findings indicate that the college student-respondents generally demonstrated a satisfactory level of AI literacy across the affective, behavioral, and cognitive dimensions, with cognitive learning obtaining the highest rating. This suggests that students possess a relatively strong conceptual understanding of artificial intelligence, including its functions, applications, and potential role in education. The finding is not surprising considering that today's college students are continuously exposed to AI-powered applications such as ChatGPT, virtual assistants, recommendation systems, and automated learning platforms, allowing them to develop familiarity with AI concepts through both formal and informal learning experiences. This result supports the AI Literacy Framework of Long and Magerko (2020), which emphasizes that AI literacy begins with developing foundational knowledge before learners can critically evaluate and responsibly utilize AI technologies. Similarly, Ng et al. (2023) argued that cognitive competence serves as the foundation upon which ethical and practical AI skills are developed.

Although behavioral learning received the lowest rating among the three dimensions, it was still interpreted as "Agree," indicating that students occasionally apply AI technologies in their academic activities but may not yet consistently integrate them into their learning practices. The relatively lower

behavioral dimension suggests that possessing knowledge about AI does not automatically translate into responsible or sustained utilization. This finding may reflect limited institutional guidance, insufficient hands-on training, or uncertainty regarding the ethical and appropriate use of AI tools in academic work. The disparity between cognitive and behavioral learning underscores the need for educational institutions to move beyond awareness-building by providing authentic learning experiences, project-based activities, and institutional policies that encourage responsible AI utilization. This observation is likewise consistent with UNESCO's (2021) recommendation that AI education should cultivate not only technical competencies but also practical and ethical capabilities for responsible AI engagement. The respondents also demonstrated a generally positive level of ethical awareness regarding artificial intelligence. Their highest level of agreement concerned the need for AI systems to undergo risk assessments before deployment, indicating that students recognize the potential societal consequences associated with AI technologies. This finding reflects increasing public discourse surrounding responsible AI, misinformation, algorithmic bias, and digital privacy, which may have contributed to students' awareness of AI-related risks. However, respondents reported lower familiarity with governance mechanisms such as audits, oversight systems, and whistleblower protections. This suggests that while students understand broad ethical principles, they possess less knowledge of the institutional and regulatory structures that operationalize ethical AI governance. Similar observations have been reported in previous studies, which found that learners are generally aware of AI ethics but have limited understanding of governance frameworks, accountability mechanisms, and regulatory compliance (Ng et al., 2021; UNESCO, 2021).

This finding highlights the importance of incorporating AI governance, institutional accountability, and policy literacy into higher education curricula rather than focusing solely on ethical concepts. Regarding institutional readiness, the respondents perceived Lipa City Colleges to be moderately prepared for AI integration. Students expressed confidence in the availability of technological resources such as computers, internet connectivity, and software, suggesting that the institution has established a basic digital infrastructure capable of supporting AI-enhanced learning. However, the relatively lower rating assigned to strategic planning indicates that respondents perceive gaps in institutional direction, governance, and long-term implementation strategies. This finding reinforces the view that institutional readiness extends beyond technological infrastructure. Effective AI integration likewise depends on leadership commitment, faculty capability, governance mechanisms, ethical safeguards, curriculum alignment, technical support, and continuous evaluation. Consequently, while the institution appears technologically prepared, stronger strategic planning and comprehensive AI governance policies are necessary to ensure sustainable and responsible AI adoption.

The study further revealed statistically significant positive relationships between ethical awareness and AI literacy across the affective, behavioral, and cognitive domains. These findings indicate that students with higher levels of ethical awareness also tended to report higher levels of AI literacy. It is important to note that these results demonstrate association rather than causation. The observed relationships suggest that ethical awareness and AI literacy develop concurrently and may reinforce one another within educational settings. This finding is consistent with contemporary AI literacy frameworks that position ethical reasoning as an integral component of AI competence rather than a separate construct (Long & Magerko, 2020; Ng et al., 2021). The relatively stronger correlation between ethical awareness and cognitive learning further suggests that students who possess greater conceptual understanding of AI are also more likely to appreciate its ethical implications.

Similarly, significant positive relationships were observed between institutional readiness and the three dimensions of AI literacy. These results suggest that students who perceive their institution as more prepared for AI integration also tend to report higher levels of affective, behavioral, and cognitive AI literacy. Rather than implying that institutional readiness directly improves AI literacy, the findings indicate that these variables are significantly associated. This relationship supports previous studies suggesting that supportive learning environments, accessible technological resources, and institutional commitment create favorable conditions for developing AI competencies among learners. The findings therefore emphasize that successful AI integration requires a balanced approach that simultaneously strengthens student competencies, institutional governance, faculty capability, and ethical safeguards.

6. Conclusion

This study found that college students of Lipa City Colleges generally demonstrated satisfactory levels of AI literacy across the affective, behavioral, and cognitive domains, with cognitive learning emerging as the strongest dimension. The respondents likewise exhibited positive ethical awareness regarding the responsible use of artificial intelligence and perceived the institution to be moderately prepared for AI integration, particularly in terms of technological resources. However, lower ratings on behavioral AI literacy, AI governance mechanisms, and institutional strategic planning indicate opportunities for strengthening practical AI competencies and organizational preparedness.

The study further established statistically significant positive relationships between AI literacy, ethical awareness, and institutional readiness. These findings suggest that students who reported higher ethical awareness also tended to demonstrate higher AI literacy and perceive greater institutional readiness for AI integration. While these relationships do not imply causation, they underscore the interconnected nature of AI competencies, ethical understanding, and institutional support in fostering responsible AI adoption.

Lastly, the findings highlight the need for higher education institutions to move beyond technological readiness by developing comprehensive AI governance frameworks, strengthening faculty capability, integrating AI literacy and ethics across academic programs, and establishing evidence-based institutional policies. The proposed Institutional AI Policy provides a practical framework for guiding the ethical, responsible, and sustainable integration of artificial intelligence into instruction, research, creative works, and institutional operations at Lipa City Colleges.

Acknowledgements

The researcher wishes to acknowledge the Lipa City Colleges for funding this institutional research.

References

- Davenport and Ronanki, 2018 T.H. Davenport, R. Ronanki Artificial intelligence for the real world *Harvard Business Review*, 96 (1) (2018), pp. 108-116
- Giray, L.G., De Silos, P.Y., Adornado, A., Buelo, R.J., Galas, E.M., Reyes-Chua, E., Santiago, C.J., & Ulanday, M.L. (2024). Use and Impact of Artificial Intelligence in Philippine Higher Education: Reflections from Instructors and Administrators. *Internet Reference Services Quarterly*.
- Long, D., & Magerko, B. (2020). What is AI literacy? Competencies and design considerations. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–16.
- Masigan, (2023). Coping with artificial intelligence. *The Philippine Star*.
<https://www.philstar.com/opinion/2023/06/21/2275410/coping-artificial-intelligence>
- Ng, W. (2021). *Technology-enhanced learning and digital literacy: A framework for developing AI readiness*. Springer.
- Ng, D. T. K., Wu, W., Leung, J. K. L., Chiu, T. K. F., & Chu, S. K. W. (2024). Design and validation of the AI literacy questionnaire: The affective, behavioural, cognitive and ethical approach. *British Journal of Educational Technology*, 55, 1082–1104. <https://doi.org/10.1111/bjet.13411>
- Ng, W., Leung, R., & Chu, S. (2021). Developing AI literacy: The role of behavioral engagement and digital readiness. *Computers & Education*, 175, 104323.
- Ortiz, (2024). The Issue Of Artificial Intelligence In Education.
<https://www.depedsanjuancity.ph/news/archive/2024/07>
- UNESCO. (2019). *Artificial Intelligence for Sustainable Development: A Framework*. United Nations Educational, Scientific and Cultural Organization (UNESCO).
- UNESCO. (2021). UNESCO (2021), *Recommendation on the Ethics of Artificial Intelligence*.
<https://www.unesco.org/en/artificial-intelligence/recommendation-ethics>

Pagbangon: Optimism, Resilience, and Emotional Coping Among Filipino Survivors of Adversity

Carmela Grace M. Gumawid*, Ramaica Maneclang, Richelle S. Ocsillos, Cynthia P. Lopez,
Francis Ivan D. Bolleser

Lyceum-Northwestern University, Dagupan City, Philippines

*Email : gumawid.carmelagrace.m@gmail.com

Abstract

Psychological recovery following disasters is shaped by both individual psychological resources and the contexts in which survivors rebuild their lives. This study examined the levels of optimism, resilience, and emotional coping, determined the differences in these variables between urban and rural Filipino young adult flood survivors, and analyzed the relationships among optimism, resilience, and emotional coping within the context of pagbangon in Pangasinan, Philippines. A quantitative descriptive-comparative and correlational design was employed involving 317 participants (165 urban and 152 rural) aged 18–30 years, using the State Optimism Measure, the Connor–Davidson Resilience Scale-10 (CD-RISC-10), and the Filipino Coping Strategies Scale (FCSS). Data were analyzed using descriptive statistics, independent-samples *t*-tests, and Pearson correlation. Respondents demonstrated high levels of optimism and resilience, while emotional coping strategies were moderately utilized overall. Urban respondents reported significantly higher optimism ($p = .040$) and resilience ($p = .023$) than rural respondents. Significant differences were also found in relaxation/recreation, cognitive reappraisal, tolerance, and overactivity ($p < .05$), while other coping strategies showed no significant group differences. Optimism was strongly associated with resilience ($r = .677, p < .001$), and both constructs were positively related to problem-solving, social support, relaxation/recreation, and cognitive reappraisal. These findings indicate that *pagbangon* is a multidimensional process shaped by optimism, resilience, emotional coping, and contextual conditions, with urban communities benefiting from greater structural resources and rural communities relying more on cognitive reappraisal. The results support culturally grounded, context-sensitive psychosocial interventions for flood-prone communities.

Keywords: Optimism; Resilience; Emotional Coping; Disaster Recovery; Filipino Young adults

1. Introduction

The Philippines is among the most disaster-prone countries in the world, with floods representing one of the most frequent and damaging hazards. Recurrent flooding events result not only in physical destruction and economic loss but also in prolonged psychological distress among affected populations (Heanoy & Brown, 2024; Dulawan et al., 2024). For many Filipino survivors, the experience of flooding disrupts daily life, displaces communities, and creates significant emotional strain. Within the Filipino cultural context, recovery from such adversity is often understood through the concept of *pagbangon*, or the process of rising again after hardship, which reflects both individual resilience and collective strength (Garay, Garay, and Martinez, 2020).

Psychological recovery following disasters such as flooding has been consistently associated with key protective factors, including optimism, resilience, and emotional coping. Optimism refers to the tendency to maintain positive expectations about future outcomes, which supports adaptive cognitive appraisal during stressful events. Resilience, on the other hand, reflects the capacity to recover, adapt, and maintain functioning despite exposure to adversity (Alcantara, 2022; Aterrado, Herrera, and Alfonso, 2022). In addition, emotional coping strategies—such as problem-solving, cognitive reappraisal, and reliance on social and religious support—enable individuals to regulate distress and restore psychological balance (Obuobi-Donkor et al., 2022; Chen et al., 2024). Prior research has shown that these constructs are significantly related and contribute to improved psychological adjustment and well-being in post-disaster contexts.

In the Philippine setting, these psychological processes are further shaped by cultural values such as *bayanihan* (communal unity) and faith-based coping, which strengthen collective recovery and social support systems (Dulawan et al., 2024). Existing studies have examined optimism, resilience, and coping among disaster-affected populations; however, these variables are often investigated independently or within non-Filipino contexts. Moreover, limited empirical research has specifically explored how these psychological factors are related among Filipino flood survivors, particularly when considering differences between urban and rural communities where access to resources, infrastructure, and social networks may vary.

Given these gaps, there remains a need for context-specific research that examines the level, relationships, and group differences of optimism, resilience, and emotional coping within the lived experiences of Filipino flood survivors. This study was conducted in Pangasinan, a province in Northern Luzon recurrently affected by seasonal flooding due to its location along the Agno River basin and exposure to recurring typhoons. Two flood-prone communities were selected based on the recommendation of their respective Local Government Units and City Disaster Risk Reduction and Management Offices: Barangay Lasip Grande, Dagupan City (urban) and Barangay Cabayaoasan, Bugallon (rural), both with documented histories of flood-related displacement and evacuation. Examining these structurally distinct yet geographically proximate communities allow for a meaningful comparison of how urban and rural contexts shape psychological recovery among flood survivors.

Accordingly, the present study aimed to examine the level of optimism, resilience, and emotional coping among young adult Filipino flood survivors, determine differences between urban and rural groups, and analyze the relationships among these variables. Filipino young adults were the focus of this study because emerging adulthood is a developmental stage characterized by identity exploration, increasing independence, and greater educational, occupational, and family responsibilities (Arnett, 2000). Experiencing disasters during this period may affect psychological adjustment while also providing opportunities to develop resilience and adaptive coping skills. Filipino young adults are vulnerable to disaster-related psychological distress but are also capable of contributing to family and community recovery efforts (Bessaha, Hayward, and Gatanas, 2022). By situating these variables within the context of flooding, this study contributes to a more nuanced and culturally relevant understanding of psychological recovery, highlighting how individual strengths and contextual factors support the process of *pagbangon* among Filipino survivors.

This study is anchored on two complementary theoretical perspectives. At the individual level, Lazarus and Folkman's (1984) Transactional Model of Stress and Coping provides the cognitive-appraisal foundation, positing individuals evaluate and respond to stressors, through primary appraisal of threat and secondary appraisal of available resources, directly shapes their coping behaviors and psychological outcomes. Individuals who appraise stressors as manageable are more likely to engage in adaptive emotional coping, which in turn sustains resilience and positive future expectations. At the cultural level, this Western cognitive framework is extended and situated within Sikolohiyang Pilipino through the concept of *pagbangon*, which captures the collectivist, faith-driven, and community-embedded dimensions of Filipino disaster recovery that purely cognitive models do not fully account for. Within this integrated framework, optimism operates as the cognitive appraisal resource that initiates adaptive coping, emotional coping strategies serve as the behavioral response mechanisms through which distress is regulated, and resilience reflects the sustained capacity to recover — with *pagbangon* representing the culturally grounded process through which all three interact in the Filipino context.

2. Objectives

This study examined the levels of optimism, resilience, and emotional coping, determined the differences in these variables between urban and rural Filipino young adult flood survivors, and analyzed the relationships among optimism, resilience, and emotional coping in the psychological recovery (*pagbangon*) of Filipino flood survivors across urban and rural communities. Specifically, the study sought to: (a) determine the level of optimism, resilience, and emotional coping of Filipino young adults' flood survivors; (b) assess whether significant differences exist in optimism, resilience, and emotional

coping between urban and rural respondents; and (c) analyze relationships among optimism, resilience, and emotional coping among the respondents.

3. Materials and Methods

This study employed a quantitative descriptive–comparative and correlational design to examine the level and relationships among optimism, resilience, and emotional coping among Filipino flood survivors in urban and rural communities.

A total of 317 Filipino young adult flood survivors aged 18–30 years participated in the study, comprising 165 respondents from Barangay Lasip Grande, Dagupan City (urban) and 152 respondents from Barangay Cabayaoasan, Bugallon, Pangasinan (rural). The two study sites were purposively selected because they are among the communities in Pangasinan that recurrently experience flooding. Barangay Cabayaoasan is situated adjacent to the Agno River Basin, making it highly susceptible to riverine flooding, while Barangay Lasip Grande frequently experiences flooding due to the overflow of nearby river systems during periods of heavy rainfall and typhoons. The selection of these barangays was validated through consultation with their respective Local Government Units (LGUs), which confirmed that both communities are consistently affected by recurring flood events and therefore appropriate sites for examining psychological recovery among flood survivors. Eligible Filipino young adults residing in the selected barangays were selected using the study's inclusion criteria. The required sample size was determined using the Taro Yamane formula.

Standardized questionnaires were used to measure the study variables. Optimism was assessed using the State Optimism Measure (Millstein et al., 2019), resilience using the Connor–Davidson Resilience Scale–10 (Connor & Davidson, 2003; Campbell-Sills, Forde, & Stein (2009), and emotional coping using the Filipino Coping Strategies Scale (Rilveria, 2018). The State Optimism Measure and CD-RISC-10 were contextually adapted by rephrasing selected items to reflect flood-related experiences among Filipino survivors. Both adapted instruments underwent expert content validation and pilot testing prior to data collection to ensure clarity and cultural appropriateness. The Filipino Coping Strategies Scale was adopted without modification. Responses were measured using Likert-type scales, with higher scores indicating higher level of the constructs. Reliability testing demonstrated good internal consistency for the adapted State Optimism Measure (Cronbach's $\alpha = .807$) and CD-RISC-10 (Cronbach's $\alpha = .868$) and excellent internal consistency for the Filipino Coping Strategies Scale (Cronbach's $\alpha = .940$).

Data were analyzed using SPSS. Descriptive statistics (mean and standard deviation) were used to summarize the data, while independent-samples *t*-tests and Pearson product-moment correlation (*r*) were employed to examine group differences and relationships among variables. Pearson correlation was done using individual raw scores, thus converting the scores into interval scales. Statistical significance was set at $p < .05$.

4. Results

Table 1. Level of Optimism Among Filipino Survivors of Adversity

OPTIMISM							
Community	Mean	SD	Sig. (2-tailed)	F	t-value	df	Interpretation
Urban	3.89	.81	.040	.330	2.063	314.541	Significant
Rural	3.70	.78					

Legend: (4.21–5.00: Strongly Agree – Very High Level); (3.41–4.20: Agree – High Level); (2.61–3.40: Neither Agree nor Disagree – Moderate Level); (1.81–2.60: Disagree – Low Level); (1.00–1.80: Strongly Disagree – Very Low Level).

Filipino flood survivors reported a high level of optimism in both urban ($M = 3.89$, $SD = 0.81$) and rural ($M = 3.70$, $SD = 0.78$) communities, as both mean scores fall within the "High Level" category. An independent samples *t*-test revealed a statistically significant difference in optimism between the two

groups ($t = 2.063$, $df = 314.541$, $p = .040$), indicating that respondents from urban communities exhibited significantly higher level of optimism than those from rural communities.

Table 2. Level and Differences in Emotional Coping Strategies (FCSS) Among Filipino Flood Survivors by Community

Coping Strategies	Urban Mean	SD	Rural Mean	SD	t	df	Hedges' <i>g</i> (95% CI)	Sig. (2-tailed)	Interpretation
1. Problem-Solving (Pagtugon)	3.15	0.68	3.04	0.78	1.337	300.269	0.151 [-0.07, 0.37]	.182	Not Significant
2. Religiosity (Pagka Relihiyoso)	3.30	0.76	3.37	0.76	-.726	313.142	-0.081 [-0.30, 0.14]	.468	Not Significant
3. Social Support (Paghingi ng Tulong)	2.49	0.79	2.52	0.72	-.289	314.974	-0.032 [-0.25, 0.19]	.773	Not Significant
4. Relaxation/Recreation (Paglilibang)	3.20	0.69	2.84	0.73	4.463	308.736	0.502 [0.28, 0.73]	.000	Significant
5. Cognitive Reappraisal (Pagsusuri)	2.57	0.52	2.70	0.59	-2.094	302.307	-0.236 [-0.46, -0.02]	.037	Significant
6. Tolerance (Pagtitiis)	2.85	0.78	2.65	0.84	2.191	306.425	0.247 [0.03, 0.47]	.029	Significant
7. Overactivity (Pagmamalabis)	2.52	0.75	2.30	0.73	2.663	313.629	0.299 [0.08, 0.52]	.008	Significant
8. Emotional Release (Paglabas ng Saloobin)	2.13	0.69	2.12	0.80	.048	299.766	0.005 [-0.21, 0.23]	.962	Not Significant
9. Substance Use (Pagbibisyo)	1.62	0.77	1.60	0.74	.318	314.332	0.036 [-0.18, 0.26]	.751	Not Significant

Legend: (4.21–5.00: Strongly Agree – Very Highly Utilized); (3.41–4.20: Agree – Highly Utilized); (2.61–3.40: Neither Agree nor Disagree – Moderately Utilized); (1.81–2.60: Disagree – Slightly Utilized); (1.00–1.80: Strongly Disagree – Very Minimally Utilized).

Note. Hedges' *g* is reported in place of raw Cohen's *d* to correct for the unequal urban and rural sample sizes (165 vs. 152); values were computed from group means and pooled standard deviations and interpreted using Cohen's (1988) benchmarks (~ 0.20 = small, ~ 0.50 = medium, ~ 0.80 = large). All effect sizes for this table are small to negligible except for relaxation/recreation, which shows a moderate effect.

Table 2 presents the level and differences in emotional coping strategies among Filipino flood survivors across urban and rural communities. Overall, emotional coping strategies were moderately utilized by young adults from both urban ($M = 2.68$) and rural ($M = 2.58$) communities. Among the nine strategies assessed, religiosity (Urban $M = 3.30$, $SD = 0.76$; Rural $M = 3.37$, $SD = 0.76$), relaxation/recreation (Urban $M = 3.20$, $SD = 0.69$; Rural $M = 2.84$, $SD = 0.73$), and problem-solving (Urban $M = 3.15$, $SD = 0.68$; Rural $M = 3.04$, $SD = 0.78$) obtained the highest mean scores in both communities, indicating these were the most frequently utilized coping strategies. In contrast, substance use obtained the lowest mean scores in both communities (Urban $M = 1.62$, $SD = 0.77$; Rural $M = 1.60$, $SD = 0.74$), suggesting it was the least utilized coping strategy across groups. The independent samples *t*-test revealed no statistically significant differences between urban and rural young adult flood survivors in five of the nine coping strategies: problem-solving ($t(300.269) = 1.337$, $g = 0.15$, 95% CI [-0.07, 0.37], $p = .182$), religiosity ($t(313.142) = -.726$, $g = -0.08$, 95% CI [-0.30, 0.14], $p = .468$), social support ($t(314.974) = -.289$, $g = -0.03$, 95% CI [-0.25, 0.19], $p = .773$), emotional release ($t(299.766) = .048$, $g = 0.01$, 95% CI [-0.21, 0.23], $p = .962$), and substance use ($t(314.332) = .318$, $g = 0.04$, 95% CI [-0.18,

0.26], $p = .751$). Conversely, statistically significant differences were observed in four coping strategies. Urban respondents reported significantly higher utilization of relaxation/recreation ($t(308.736) = 4.463$, $g = 0.50$, 95% CI [0.28, 0.73], $p < .001$), tolerance ($t(306.425) = 2.191$, $g = 0.25$, 95% CI [0.03, 0.47], $p = .029$), and overactivity ($t(313.629) = 2.663$, $g = 0.30$, 95% CI [0.08, 0.52], $p = .008$) compared to rural respondents. Rural respondents, on the other hand, reported significantly higher utilization of cognitive reappraisal ($t(302.307) = -2.094$, $g = -0.24$, 95% CI [-0.46, -0.02], $p = .037$) compared to their urban counterparts. With the exception of relaxation/recreation, which showed a moderate effect ($g = 0.50$), all significant group differences in coping strategies corresponded to small effect sizes, indicating that while urban and rural respondents differed reliably on these dimensions, the practical magnitude of these differences was modest.

Table 3. Level and Differences of Resilience (CD-RISC-10) Among Filipino Survivors of Adversity

RESILIENCE CD-RISC-10							
Community	Mean	SD	Sig. (2-tailed)	F	t-value	df	Interpretation
Urban	37.66	7.30	.023	.683	2.288	308.520	Significant
Rural	35.71	7.78					

Note: High Scores means higher level of resiliency, low scores mean low level of resiliency (scores of individuals / 40)

Both urban ($M = 37.66$, $SD = 7.30$) and rural ($M = 35.71$, $SD = 7.78$) respondents demonstrated a high level of resilience. An independent samples t -test indicated a statistically significant difference in resilience between the two groups ($t = 2.288$, $df = 308.520$, $p = .023$), with respondents from urban communities exhibiting significantly higher resilience scores than those from rural communities.

Table 4. Pearson Correlation Between Optimism and Resilience

	RESILIENCE	INTERPRETATION
OPTIMISM	.677**	Significant; strong positive
Sig. (2-tailed)	.000	

Note. $N = 317$. $p < .01$ (2-tailed). Correlation is significant at the 0.01 level. **Legend:** (0.80 to 1.00: Very Strong Positive); (0.60 to 0.79: Strong Positive); (0.40 to 0.59: Moderate Positive); (0.20 to 0.39: Weak Positive); (0.00 to 0.19: Very Weak Positive); (-1.00 to -0.80: Very Strong Negative); (-0.79 to -0.60: Strong Negative); (-0.59 to -0.40: Moderate Negative); (-0.39 to -0.20: Weak Negative); (-0.19 to -0.01: Very Weak Negative).

A statistically significant strong positive correlation was found between optimism and resilience, $r(315) = .677$, $p < .001$, indicating that higher optimism was associated with higher resilience.

Table 5. Pearson Correlation Between Resilience and Emotional Coping

	EMOTIONAL COPING VARIABLES	r-value	p-value	Interpretation
RESILIENCE	Problem-Solving (Pagtugon)	.488**	.000	Significant - Moderate Positive
	Religiosity (Pagkarelihiyoso)	.222**	.000	Significant - Weak Positive
	Social Support (Paghingi ng Tulong)	.433**	.000	Significant - Moderate Positive
	Relaxation/Recreation (Paglilibang)	.332**	.000	Significant - Weak Positive
	Cognitive Reappraisal (Pagsusuri)	.251**	.000	Significant - Weak Positive
	Tolerance (Pagtitiis)	-.008	.890	Not Significant - Very Weak Negative
	Overactivity (Pagmamalabis)	.416**	.000	Significant - Moderate Positive

	Emotional Release (Paglabas ng Saloobin)	.228**	.000	Significant - Weak Positive
	Substance Use (Pagbibisyo)	-.080	.154	Not Significant - Very Weak Negative

Legend: (0.80 to 1.00: Very Strong Positive); (0.60 to 0.79: Strong Positive); (0.40 to 0.59: Moderate Positive); (0.20 to 0.39: Weak Positive); (0.00 to 0.19: Very Weak Positive); (-1.00 to -0.80: Very Strong Negative); (-0.79 to -0.60: Strong Negative); (-0.59 to -0.40: Moderate Negative); (-0.39 to -0.20: Weak Negative); (-0.19 to -0.01: Very Weak Negative).

Resilience showed significant positive correlations with most emotional coping strategies. Moderate correlations were observed with problem-solving ($r = .488, p < .001$), social support ($r = .433, p < .001$), and overactivity ($r = .416, p < .001$). Weak but significant correlations were found with relaxation/recreation ($r = .332, p < .001$), cognitive reappraisal ($r = .251, p < .001$), religiosity ($r = .222, p < .001$), and emotional release ($r = .228, p < .001$).

No statistically significant relationships were found between resilience and tolerance ($r = -.008, p = .890$) or substance use ($r = -.080, p = .154$).

Table 6. Pearson Correlation Between Optimism and Emotional Coping

	EMOTIONAL COPING VARIABLES	r-value	p-value	Interpretation
OPTIMISM	Problem-Solving (Pagtugon)	.390**	.000	Significant - Weak Positive
	Religiosity (Pagkarelihiyoso)	.164**	.003	Significant - Very Weak Positive
	Social Support (Paghingi ng Tulong)	.377**	.000	Significant - Weak Positive
	Relaxation/Recreation (Paglilibang)	.354**	.000	Significant - Weak Positive
	Cognitive Reappraisal (Pagsusuri)	.212**	.000	Significant - Weak Positive
	Tolerance (Pagtitiis)	.047	.403	Not Significant - Very Weak Positive
	Overactivity (Pagmamalabis)	.258**	.000	Significant - Weak Positive
	Emotional Release (Paglabas ng Saloobin)	.146**	.009	Significant - Very Weak Positive
	Substance Use (Pagbibisyo)	-.058	.301	Not Significant - Very Weak Negative

Legend: (0.80 to 1.00: Very Strong Positive); (0.60 to 0.79: Strong Positive); (0.40 to 0.59: Moderate Positive); (0.20 to 0.39: Weak Positive); (0.00 to 0.19: Very Weak Positive); (-1.00 to -0.80: Very Strong Negative); (-0.79 to -0.60: Strong Negative); (-0.59 to -0.40: Moderate Negative); (-0.39 to -0.20: Weak Negative); (-0.19 to -0.01: Very Weak Negative).

Optimism showed significant positive correlations with several coping strategies, including problem-solving ($r = .390, p < .001$), social support ($r = .377, p < .001$), relaxation/recreation ($r = .354, p < .001$), overactivity ($r = .258, p < .001$), and cognitive reappraisal ($r = .212, p < .001$).

Very weak but significant correlations were also observed with religiosity ($r = .164, p = .003$) and emotional release ($r = .146, p = .009$). No statistically significant relationships were found between optimism and tolerance ($r = .047, p = .403$) or substance use ($r = -.058, p = .301$).

5. Discussion

This study examined the levels of optimism, resilience, and emotional coping, determined the differences in these variables between urban and rural Filipino young adult flood survivors, and analyzed the relationships among optimism, resilience, and emotional coping within the context of *pagbangon* in Pangasinan, Philippines. The findings collectively indicate that *pagbangon* is not driven by any single psychological resource but rather emerges from the interplay of positive cognitive orientations, adaptive behavioral responses, cultural values, and environmental conditions.

The high level of optimism and resilience observed among respondents suggest that repeated exposure to flooding does not inevitably erode positive psychological functioning among young adults. Rather, survivors appear capable of sustaining positive future expectations while maintaining adaptive functioning in the face of recurring adversity. This finding aligns with prior Philippine-based research demonstrating that optimism serves as a protective cognitive resource by fostering persistence, adaptive appraisal, and confidence during stressful situations (Alcantara, 2022; Aterrado, Herrera, and Alfonso, 2022). Consistent with Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, individuals who appraise stressors as manageable are more likely to engage in active, problem-focused coping, which in turn reinforces resilience over time.

The significant urban–rural differences in optimism and resilience indicate that psychological recovery is shaped not only by individual characteristics but also by structural and environmental conditions. Urban respondents from Barangay Lasip Grande, Dagupan City reported significantly higher optimism and resilience compared to rural respondents from Barangay Cabayaoasan, Bugallon. This disparity may reflect the comparatively greater availability of institutional resources in urban Pangasinan, including access to formal disaster response mechanisms, healthcare services, communication infrastructure, educational opportunities, and post-disaster livelihood support. These contextual advantages may strengthen urban young adults' confidence in their ability to recover, thereby elevating both their optimism and their resilience scores. Conversely, rural young adults, despite demonstrating comparable level of culturally grounded coping, may face structural barriers — including limited access to psychosocial services, digital information, and formal recovery programs — that constrain their capacity to maintain positive future expectations following flooding. These findings are consistent with the developmental context of emerging adulthood (Arnett, 2000), wherein access to education, employment, and community networks during the ages of 18 to 30 significantly shapes psychological adjustment. Urban young adults, who are more likely to have stable access to these developmental resources, may be better positioned to sustain optimism and adaptive functioning amid disaster-related disruptions.

The emotional coping findings provide additional insight into the culturally situated nature of *pagbangon*. Across both communities, respondents most frequently utilized religiosity, relaxation/recreation, and problem-solving, while substance use was the least utilized strategy. The prominence of religiosity is consistent with the enduring role of faith and spirituality in Filipino disaster coping, wherein religious belief provides a source of meaning, hope, and emotional stability amid loss (Garay, Garay, and Martinez, 2020; Dulawan et al., 2024). Similarly, the high utilization of problem-solving reflects an active coping orientation that enables survivors to regain a sense of agency and control despite disaster-related uncertainty.

While the two communities did not significantly differ in five of the nine coping strategies — namely problem-solving, religiosity, social support, emotional release, and substance use — four strategies showed statistically significant group differences. Urban respondents reported significantly higher utilization of relaxation/recreation, tolerance, and overactivity, whereas rural respondents demonstrated significantly higher cognitive reappraisal. The higher use of relaxation/recreation among urban respondents may be attributable to greater access to recreational spaces, structured community activities, and leisure opportunities available in Dagupan City. Rural respondents' comparatively higher cognitive reappraisal, on the other hand, suggests that in the relative absence of external recovery resources, rural young adults may more readily turn to internal cognitive restructuring — reframing the

flood experience in ways that make it feel more manageable or meaningful — as a primary means of emotional regulation.

The significantly higher utilization of overactivity (*pagmamalabis*) among urban respondents warrants particular critical attention. Although this study's correlational findings indicate that overactivity is positively associated with resilience ($r = .416, p < .001$), this association should not be interpreted as straightforwardly adaptive. In Filipino psychology, *pagmamalabis* refers to excessive engagement in tasks, work, or activities as a means of emotional avoidance. In the short term, such behavioral immersion may reduce distress by preventing rumination and providing a sense of productivity, which could superficially support resilience scores. However, sustained overactivity risks suppressing unprocessed grief, delaying genuine emotional recovery, and contributing to psychological exhaustion or burnout over time. Urban environments, which typically offer greater access to work, digital engagement, and social activities, may inadvertently reinforce this pattern among young adults seeking distraction from disaster-related distress. Psychosocial interventions should therefore be mindful of this dynamic and encourage survivors to complement behavioral engagement with deeper emotional processing approaches such as cognitive reappraisal, social support, and structured reflection.

The correlational findings further demonstrate that optimism, resilience, and adaptive emotional coping function as mutually reinforcing psychological resources. The strong positive correlation between optimism and resilience ($r = .677, p < .001$) indicates that individuals with higher positive expectations tend to also possess stronger adaptive capacity, consistent with the cognitive-appraisal pathway described by Lazarus and Folkman (1984). Moreover, both optimism and resilience were significantly and positively associated with adaptive coping strategies — particularly problem-solving, social support, relaxation/recreation, and cognitive reappraisal — suggesting that higher level of these psychological resources facilitate engagement in constructive coping behaviors that support recovery. Notably, neither optimism nor resilience was significantly associated with tolerance or substance use, indicating that passive endurance and avoidant behaviors contribute minimally to successful psychological recovery. These results affirm prior disaster research demonstrating that active, engaged coping produces more favorable psychological outcomes than passive or avoidant responses (Chen et al., 2024; Obuobi-Donkor et al., 2022).

6. Conclusion

This study demonstrated that Filipino young adult flood survivors in Pangasinan generally exhibited high level of optimism and resilience and moderately utilized adaptive emotional coping strategies. Urban respondents reported significantly higher optimism and resilience than rural respondents, while the two communities shared similarities in the majority of coping strategies, with significant differences emerging only in relaxation/recreation, cognitive reappraisal, tolerance, and overactivity. Optimism and resilience were strongly and positively correlated, and both constructs were significantly associated with adaptive coping strategies, particularly problem-solving, social support, relaxation/recreation, and cognitive reappraisal.

Taken together, these findings affirm that *pagbangon* is a multidimensional recovery process sustained by the convergence of positive cognitive expectations, adaptive behavioral coping, deeply embedded cultural values, and enabling environmental conditions. Recovery among Filipino young adults cannot be reduced to individual psychological strengths alone; it is meaningfully shaped by the structural and developmental contexts within which young adults navigate post-disaster life, including access to education, livelihood, digital resources, and community support systems.

These findings carry practical implications for disaster risk reduction and mental health programming. Local Government Units (LGUs) and Disaster Risk Reduction and Management (DRRM) Offices should develop structured psychosocial programs specifically designed for young adults that integrate Psychological First Aid, resilience- and optimism-building modules, and peer support groups anchored in the Filipino value of bayanihan. Particular attention should be given to rural communities, where lower optimism and resilience scores suggest a greater need for accessible, community-based psychological services and recovery resources. Interventions should also be designed to move survivors

beyond behavioral distraction strategies such as overactivity toward deeper emotional processing through cognitive reappraisal training and facilitated social support. Digital mental health platforms may further extend the reach of these services to underserved rural populations.

Future research should employ longitudinal designs to trace how optimism, resilience, and coping strategies evolve across distinct stages of disaster recovery, from immediate response through long-term reconstruction. Subsequent studies should also investigate the moderating roles of socioeconomic status, disaster severity, social capital, family functioning, and community infrastructure on the process of *pagbangon*, in order to develop more targeted, evidence-based interventions for young adults in disaster-prone communities across the Philippines.

Acknowledgements

Deep gratitude is also extended to the disaster survivors who willingly participated in this study despite their experiences of adversity. Their openness and honesty in sharing their experiences made this research meaningful and possible. The researchers also express their appreciation to individuals who continue to face everyday adversities with strength and resilience, whose lived realities inspired the direction and relevance of this study on *pagbangon*. Finally, heartfelt thanks are given to all friends, family members, and supporters of the researchers for their continuous encouragement, patience, and motivation throughout the conduct of this research.

References

- Alcantara, R. (2022). *Spirituality and resiliency among natural disaster adult survivors*. *Silliman Journal*, 63(1), 35–55. <https://sillimanjournal.su.edu.ph/index.php/sj/article/view/18>
- Arnett, J. J. (2000). Emerging adulthood: *A theory of development from the late teens through the twenties*. *American Psychologist*, 55(5), 469–480. <https://doi.org/10.1037/0003-066X.55.5.469>
- Aterrado, K., Herrera, M., & Alfonso, J. (2022). *The mediating effect of positive emotions to community resilience and individual resilience of flood survivors in Tanay, Rizal, Philippines*. *Journal of Positive School Psychology*, 6(9), 5333–5347. <https://journalppw.com/index.php/jpsp/article/view/5333>
- Bessaha, M., Hayward, R. A., & Gatanas, K. (2022). *A scoping review of youth and filipino young adults' roles in natural disaster mitigation and response: Considerations for youth wellbeing during a global ecological crisis*. School of Social Welfare, Stony Brook University. <https://www.researchgate.net/publication/355918141>
- Campbell-Sills, L., Forde, D. R., & Stein, M. B. (2009). *Demographic and childhood environmental predictors of resilience in a community sample*. *Journal of Psychiatric Research*, 43(12), 1007–1012. <https://doi.org/10.1016/j.jpsychires.2009.01.013>
- Chen, H., Marzo, R. R., Htay, N. N., Anuar, H., Naidu, J., & Rahman, A. (2024). *Positive coping and community resilience in disaster management for flooding in Malaysia*. *Journal of Angiotherapy*, 8(2). <https://doi.org/10.25163/angiotherapy.829464>
- Connor, K. M., & Davidson, J. R. T. (2003). *Development of a new resilience scale: The Connor–Davidson Resilience Scale (CD-RISC)*. *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Dulawan, J. M. T., Imamura, Y., Amaguchi, H., & Ohara, M. (2024). *Social drivers of flood vulnerability: Understanding household perspectives and persistence of living in flood zones of Metro Manila, Philippines*. *Water*, 16(6), 799. <https://doi.org/10.3390/w16060799>
- Garay, G., Garay, M. C., & Martinez, H. (2020). *Resilience amidst adversity: The many faces of resilience in Filipinos*. *International Journal of Social Science and Humanities Research*, 8(2), 327–335. <https://www.researchpublish.com/upload/book/paperpdf-1593090736.pdf>
- Heanoy, E. Z., & Brown, N. R. (2024). *Impact of natural disasters on mental health: Evidence and implications*. *Healthcare*, 12(18), 1812. <https://doi.org/10.3390/healthcare12181812>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

- Millstein, R. A., Chung, W.-J., Hoepfner, B. B., Boehm, J. K., Legler, S. R., Mastromauro, C. A., & Huffman, J. C. (2019). *Development of the State Optimism Measure*. *General Hospital Psychiatry*, 58, 83–93. <https://doi.org/10.1016/j.genhosppsych.2019.04.002>
- Obuobi-Donkor, G., Eboreime, E., Shalaby, R., Agyapong, B., Adu, M. K., Owusu, E., Mao, W., Oluwasina, F., Pazderka, H., & Agyapong, V. I. O. (2022). *Evaluating community resilience and associated factors one year after the catastrophic Fort McMurray flood*. *International Journal of Environmental Research and Public Health*, 19(23), 16153. <https://doi.org/10.3390/ijerph192316153>
- Rilveria, J. R. C. (2018). *The development of the Filipino coping strategies scale*. *Asia-Pacific Social Science Review*, 18(1), Article 9. <https://animorepository.dlsu.edu.ph/apssr/vol18/iss1/9>

Utilization of Artificial Intelligence in Academic Work Among Criminology Students at Tomas Claudio Colleges

Ma. Charisse B. Vedaña*, Jhason E. Rodriguez, Andrea Diane T. Iposada, Ma. Roselle P. Limon,
John Gianne B. Perdiguerra, Margee Lei Guada L. Benavidez

Tomas Claudio Colleges

*Email : mcvedana@gmail.com

Abstract

This study, examines the perception of criminology students at Tomas Claudio Colleges regarding the use of artificial intelligence (AI) in academic work, particularly in terms of its usability, impact on learning, and ethical implications. It aims to determine students' profiles (age, sex, and year level), assess their level of perception on AI use, and identify significant differences when grouped according to these variables. A descriptive research design was employed, using a structured questionnaire administered to 80 selected criminology students. Data were analyzed to evaluate their perceptions in terms of frequency of use, ease of use, ethical concerns, and impact on learning. Findings revealed that most respondents were aged 18–20, predominantly male, and distributed across year levels. Overall, students showed a moderately positive perception of AI. They agreed that AI is easy to use and beneficial for academic tasks such as research and organization. However, concerns regarding academic integrity, over-dependence, and reduced critical thinking were also identified. Statistical analysis showed no significant differences in most variables when grouped by sex, except in ethical concerns. The study concludes that AI serves as a valuable support tool in academic work but must be used responsibly. Its significance lies in highlighting the need for clear institutional guidelines, integration of AI literacy in education, and promotion of ethical practices to ensure that AI enhances learning without compromising academic integrity.

Keywords: Artificial Intelligence; Academic Work; Impact on Learning; Ethical Concerns.

1. Introduction

Artificial Intelligence (AI) has become increasingly integrated into education. Artificial Intelligence (AI) has rapidly transformed the educational landscape, influencing how students approach academic tasks such as writing, research, and information processing. AI-powered tools are now widely used to assist in generating ideas, improving grammar, and organizing academic content. As a result, students are able to complete tasks more efficiently and access a wide range of information with ease. However, the increasing reliance on AI in academic work raises important concerns regarding academic integrity, over-dependence, and the potential decline of critical thinking skills.

Globally, the integration of AI in education is recognized as a transformative movement that has been evolving for over a decade. A comprehensive review of AI developments from 2010 to 2020 highlights that international educational systems have been progressively adopting these technologies to reshape learning and teaching paradigms (Zhai et al., 2021). The recent rise of generative AI and large language models has further catalyzed a worldwide academic debate regarding the opportunities for personalized support versus the challenges of maintaining institutional integrity (Kasneci et al., 2023). Studies in diverse international settings, such as at top-tier universities in China, indicate that students across the globe increasingly view AI as a beneficial resource for navigating complex subjects and enhancing academic engagement (Yan et al., 2025)

Recent studies have highlighted both the advantages and limitations of AI in education. According to Holmes et al. (2019), AI technologies can enhance personalized learning and reduce the workload of students by providing immediate feedback and academic support. Similarly, Zhai (2022) found that AI tools can generate structured and coherent academic outputs, making them useful for research and writing tasks. These findings suggest that AI can significantly improve students' academic performance when used appropriately.

Despite these benefits, several researchers have raised concerns about the ethical implications of AI use. Thorp (2023) emphasized that AI-generated content may lead to issues in academic honesty, particularly when students submit work that is not entirely their own. In the same way, Yadava (2023) pointed out that over-reliance on AI tools may weaken students' ability to think critically and independently. This creates a debate within the academic community regarding whether AI should be embraced as a learning tool or regulated to prevent misuse.

The acceptance and use of AI can be further explained through theoretical perspectives. The Technology Acceptance Model suggests that students tend to adopt AI tools when they find them helpful in completing academic tasks efficiently and when these tools are easy to use (Davis, 1989). Cognitive Load Theory also explains that AI helps reduce the difficulty of complex academic activities, allowing students to accomplish tasks with less mental effort. However, too much reliance on such tools may affect deeper learning processes (Sweller, 1988). Additionally, Social Learning Theory relates to the student's usage of AI by the influence of their surroundings, including classmates and academic practices, which shape how they perceive and utilize these technologies.

In the Philippine context, the integration of AI in education is still developing. Educational institutions have begun to recognize the importance of balancing innovation with ethical responsibility. According to Muñoz (2025), the implementation of AI in Philippine education presents both opportunities and challenges, particularly in ensuring equitable access and proper regulation. This highlights the need for clear institutional guidelines to promote responsible AI use among students.

Despite the growing body of literature, there is limited research focusing specifically on criminology students and their perception of AI in academic work. Given that criminology students are expected to uphold ethical standards and critical decision-making in their future profession, understanding their perception of AI is essential.

Therefore, this study aims to examine the perception of criminology students of Tomas Claudio Colleges regarding the use of Artificial Intelligence in academic work. Specifically, it seeks to determine their level of perception in terms of frequency of use, ease of use, ethical concerns, and impact on learning, as well as identify any significant differences when grouped according to their profile. The findings of this study are expected to contribute to the development of policies and strategies that promote the responsible and ethical use of AI in education.

Objectives

The researchers aim to examine the perception of criminology students of Tomas Claudio Colleges regarding the use of Artificial Intelligence (AI) in academic work, particularly in terms of its usability, impact on learning, and ethical implications. The study seeks to determine how students' demographic characteristics influence their acceptance and use of AI, as well as to identify key concerns related to its application in academic settings. Furthermore, it aims to generate recommendations that will promote the responsible and ethical use of AI and support the development of institutional policies that enhance students' learning experiences. This study sought to answer the following questions;

1. What is the demographic profile of the criminology student of Tomas Claudio Colleges in terms of age, sex, and year level?
2. What is the level of perception of criminology students on the use of AI in academic work in terms of the aspects of frequency of use, ease of use, ethical concerns and impact on learning?
3. Is there a significant difference in the perception of criminology students toward using AI in academic work in terms of the above-mentioned aspects when grouped according to their profile?
4. What recommendation can be proposed to enhance the responsible and ethical use of AI in academic work among criminology students of Tomas Claudio Colleges?

2. Materials and Methods

This study utilized a quantitative research design, specifically descriptive research design employing a questionnaire checklist as the research instrument. The respondents of the study were from different year level. 20 respondents each from the 1st, 2nd, 3rd and 4th year levels.

The study utilized a researchers'-made questionnaire-checklist as the main instrument in gathering the needed data. The questionnaire consisted of two major sections. The first section gathered the demographic profile of the respondents, including age, sex, and year level. This information was necessary to determine possible differences in perceptions when respondents were grouped according to these variables, as well as to provide a clearer description of the study population. The second section contained the main set of questions, composed of twenty (20) statements related to AI use in academic work. These items were evenly distributed across four key dimensions: frequency of use, ease of use, ethical concerns, and impact on learning. Each statement was carefully formulated to measure a specific aspect of students' perceptions, ensuring that the data collected would be both relevant and comprehensive.

The study followed a systematic process beginning with the approval of the research title. The researchers gathered relevant literature and developed the manuscript, which was reviewed and refined based on feedback.

Before distributing the questionnaire, necessary permissions were secured from appropriate authorities. The questionnaires were then administered to the respondents, collected, and the data were organized, tallied, and tabulated. Afterward, the data were analyzed and interpreted to draw the study's findings, conclusions, and recommendations.

Data collection was done using a questionnaire checklist, developed from related studies, modified to align with the objectives and scope of the research and to ensure it would provide sufficient and effective data. Each question was carefully checked and modified for clarity. The researchers utilized software tools like SPSS and Excel for efficient data gathering and analysis. The statistical tools used to describe the data were frequency, percentage, and mean. To assess if there is a significant difference on the perception of criminology students on the use of AI in academic work in terms of different aspects when grouped according to their profile one-way analysis of variance (ANOVA) and T-test was used.

3. Results

The respondents' demographic profile was analyzed in terms of age, sex, and year level. The study included eighty (80) selected criminology students from Tomas Claudio Colleges, all of whom utilize Artificial Intelligence in their academic work.

Table 1: Respondents' Profile with respect to age, sex, and year level

AGE	F	%	R
18 – 20 years old	40	50.0	1
21 – 22 years old	25	31.25	2
23 – 25 years old	15	18.75	3
TOTAL	80	100.0	

SEX	F	%	R
Male	52	65.0	1
Female	28	35.0	2
TOTAL	80	100.0	
YEAR LEVEL	f	%	R
1st year level	20	25.0	1
2nd year level	20	25.0	1
3rd year level	20	25.0	1
4th year level	20	25.0	1
TOTAL	80	100.0	

In terms of age, most of the respondents were 18–20 years old, with a frequency of 40 and a percentage of 50.0%, which ranked first. Respondents who were 21–22 years old ranked second with a frequency of 25 and a percentage of 31.25%, followed by respondents aged 23–25 years old, who ranked third with a frequency of 15 and a percentage of 18.75%.

In terms of sex, 65.0% of them were male with a frequency of 52, which ranked first, and 35.0% were female with a frequency of 28, which ranked second.

In terms of year level, the respondents were evenly distributed among first year, second year, third year, and fourth year, each with a frequency of 20 and a percentage of 25.0%, resulting in a four-way tie for the first rank.

Table 2 Perception of Criminology Students of Tomas Claudio Colleges on the Use of Artificial Intelligence in Academic Work in Terms of Frequency of Use

Frequency of Use	WX	VI	Rank
I often use AI tools for academic tasks.	2.95	MA	2
I use AI tools to help complete research, essays or assignments.	2.85	MA	3
I use AI regularly when I need academic assistance or quick explanations.	3.01	MA	1
AI tools are part of my study routine.	2.64	MA	5
I use AI tools both inside and outside the classroom for academic – related tasks.	2.69	MA	4
Overall WX	2.83	MA	

LEGEND:

Rank	Mean Range	Abbreviation	Verbal Interpretation	$\bar{W}\bar{X}$ = Mean $\bar{V}\bar{I}$ = Verbal Interpretation
5	3.26 – 4.00	SA	Strongly Agree	
4	2.51 – 3.25	MA	Moderately Agree	
3	1.76-2.50	SLA	Slightly Agree	
2	1.0 – 1.75	D	Disagree	
1				

As shown in the table above, the respondents' frequency of use was verbally interpreted as Moderately Agree across all five (5) indicators. The item ranked first was "I use AI regularly when I need academic assistance or quick explanations," with a weighted mean of 3.01, verbally interpreted as Moderately Agree. This was followed by "I often use AI tools for academic tasks," which ranked second with a weighted mean of 2.95 and the same verbal interpretation. The third-ranked item, "I use AI tools to help complete research, essays, or assignments," obtained a weighted mean of 2.85 and was also interpreted as Moderately Agree. The fourth item, "I use AI tools both inside and outside the classroom for academic-related tasks," recorded a weighted mean of 2.69 with a Moderately Agree interpretation. Lastly, "AI tools are part of my study routine" ranked fifth, with a weighted mean of 2.64 and a Moderately Agree verbal interpretation. The overall computed weighted mean of 2.83 indicates that the respondents moderately agree in terms of their frequency of AI use.

The results imply that students are still in the adjustment and exploration stage of integrating AI into their academic activities. This suggests that while AI tools are accessible, there may be limitations such as lack of deeper familiarity, insufficient training, or concerns about academic integrity that prevent more frequent use. The higher reliance on AI for quick explanations indicates that students view AI primarily as a support tool for understanding concepts, rather than a comprehensive academic partner.

Furthermore, the findings are consistent with the study of Kasneci et al. (2023), which emphasized that students commonly use AI tools for quick assistance and clarification, rather than for complex academic tasks, especially during the early stages of adoption.

Table 3. Perception of Criminology Students of Tomas Claudio Colleges on the Use of Artificial Intelligence in Academic Work in Terms of Ease of Use

Ease of Use	WX	VI	Rank
AI tools are easy to access and operate.	3.41	SA	1
I find AI tools user-friendly and convenient.	3.20	MA	3
Using AI saves me time and effort in academic work.	3.14	MA	4
I can easily understand how to use AI applications for learning.	3.24	MA	2
I feel confident using AI tools without needing much assistance.	2.91	MA	5
Composite WX	3.18	MA	

LEGEND:

Rank	Mean Range	Abbreviation	Verbal Interpretation	$\bar{W}\bar{X}$ = Mean $\bar{V}\bar{I}$ = Verbal Interpretation
5	3.26 – 4.00	SA	Strongly Agree	
4	2.51 – 3.25	MA	Moderately Agree	
3	1.76-2.50	SLA	Slightly Agree	
2	1.0 – 1.75	D	Disagree	
1				

As shown in the table, respondents' perceptions of ease of use include four (4) indicators rated as "Moderately Agree" and one (1) as "Strongly Agree." The highest-ranked statement, "AI tools are easy to access and operate," obtained a weighted mean of 3.41, interpreted as "Strongly Agree." This was followed by "I can easily understand how to use AI applications for learning," which ranked second with a

weighted mean of 3.24, interpreted as “Moderately Agree.” The third item, “I find AI tools user-friendly and convenient,” recorded a weighted mean of 3.20 with the same interpretation. Next, “Using AI saves me time and effort in academic work” ranked fourth, with a weighted mean of 3.14, also interpreted as “Moderately Agree.” Lastly, “I feel confident using AI tools without needing much assistance” ranked fifth, with a weighted mean of 2.91 and was likewise interpreted as “Moderately Agree.” Overall, the computed weighted mean of

a. suggests that respondents moderately agree on the ease of use of AI tools. The results indicate that the accessibility of AI tools greatly contributes to their adoption among students. Since respondents strongly agree that these tools are easy to access and operate, educational institutions can take advantage of this by incorporating AI into learning activities without requiring complicated technical preparation. However, the moderate ratings in terms of understanding, convenience, and confidence imply that students may still need additional guidance, training, or orientation to use AI tools effectively. This shows that accessibility alone does not guarantee full competence, emphasizing the importance of proper support.

b. Moreover, while AI tools are recognized for saving time and effort, their full potential can only be achieved when students are equipped with sufficient knowledge and effective strategies for their use. These findings align with the study of Davis (1989) under the Technology Acceptance Model (TAM), which highlights that perceived ease of use plays a crucial role in influencing users’ acceptance of technology. The strong agreement on accessibility further suggests that users are more likely to adopt AI tools when they are simple and easy to operate.

Table 4. Perception of Criminology Students of Tomas Claudio Colleges on the Use of Artificial Intelligence in Academic Work in Terms of Ethical Concern

Ethical Concern	WX	VI	Rank
I am aware that excessive use of AI can lead to academic dishonesty.	3.24	MA	2
I believe AI should be used with honesty and proper acknowledgement.	3.28	SA	1
I worry that AI may promote plagiarism among students.	3.13	MA	4
AI tools may give some students an unfair academic advantage over others.	3.21	MA	3
It is ethical to use AI for grammar correction or language improvement in assignments.	3.10	MA	5
Composite WX	3.19	MA	

LEGEND:

Rank	Mean Range	Abbreviation	Verbal Interpretation	W$\bar{X}$ = Mean VI = Verbal Interpretation
5	3.26 – 4.00	SA	Strongly Agree	
4	2.51 – 3.25	MA	Moderately Agree	
3	1.76-2.50	SLA	Slightly Agree	
2	1.0 – 1.75	D	Disagree	
1				

As reflected in the table, ethical concerns the four items consist of four (4) items interpreted as “Moderately Agree” and one (1) item as “Strongly Agree.” The highest-ranked statement, “I believe AI should be used with honesty and properacknowledgment,” obtained a weighted mean of 3.28 and was interpreted as “Strongly Agree.” This was followed by “I am aware that excessive use of AI can lead to academic dishonesty,” which ranked second with a weighted mean of 3.24 and a “Moderately Agree” interpretation. The third-ranked item, “AI tools may give some students an unfair academic

advantage over others,” recorded a weighted mean of 3.21, also interpreted as “Moderately Agree.” Next, “I worry that AI may promote plagiarism among students” ranked fourth, with a weighted mean of 3.13 and the same interpretation. Lastly, “It is ethical to use AI for grammar correction or language improvement in assignments” ranked fifth, with a weighted mean of 3.10 and was likewise interpreted as “Moderately Agree.” Overall, the computed weighted mean of 3.19 indicates that respondents moderately agree regarding ethical concerns in the use of AI.

The findings suggest that students have a basic awareness of ethical AI use, particularly in terms of honesty and proper acknowledgment. However, the generally moderate level of agreement across most indicators implies that some uncertainty remains about ethical boundaries, especially when distinguishing appropriate from inappropriate uses of AI. Concerns related to academic dishonesty, plagiarism, and unfair advantage indicate that AI tools may pose risks to academic fairness if not properly guided or regulated.

Additionally, students’ acceptance of AI for grammar correction and language improvement shows that they view it as a supportive tool rather than a substitute for their own work. These results are consistent with the study of Kasneci et al. (2023), which highlights that although AI provides valuable academic support, it also introduces ethical challenges, particularly in maintaining academic integrity and preventing misuse such as plagiarism.

Table 5. Perception of Criminology Students of Tomas Claudio Colleges on the Use of Artificial Intelligence in Academic Work in Terms of Impact on Learning

Impact on Learning	WX	VI	Rank
AI encourages me to learn independently.	2.45	SA	5
AI helps me understand lessons better.	3.00	MA	2
AI tools make learning more engaging and efficient.	2.87	MA	3
I rely too much on AI, which reduces my critical thinking.	2.51	MA	4
Overall, AI has a positive impact on my learning.	3.10	MA	1
Composite WX	2.79	MA	

LEGEND:

Rank	Mean Range	Abbreviation	Verbal Interpretation	WX̄ = Mean VI = Verbal Interpretation
5	3.26 – 4.00	SA	Strongly Agree	
4	2.51 – 3.25	MA	Moderately Agree	
3	1.76-2.50	SLA	Slightly Agree	
2	1.0 – 1.75	D	Disagree	
1				

As presented in the table, respondents’ perceptions of the impact of AI on learning include four (4) items interpreted as “Moderately Agree” and one (1) item as “Slightly Agree.” The top-ranked statement, “Overall, AI has a positive impact on my learning,” obtained a weighted mean of 3.10 and was interpreted as “Moderately Agree.” This was followed by “AI helps me understand lessons better,” which ranked second with a weighted mean of 3.00, also interpreted as “Moderately Agree.” The third-ranked item, “AI tools make learning more engaging and efficient,” recorded a weighted mean of 2.87 with the same interpretation. Next, “I rely too much on AI, which reduces my critical thinking” ranked fourth, with a weighted mean of 2.51 and was likewise interpreted as “Moderately Agree.” Lastly, “AI encourages me to learn independently” ranked fifth, obtaining a weighted mean of 2.45 and was interpreted as “Slightly Agree.” Overall, the computed weighted mean of 2.79 indicates that respondents moderately agree regarding the impact of AI on learning.

The findings suggest that AI has the potential to improve students’ learning experiences, particularly in enhancing understanding and increasing efficiency. However, the moderate level of agreement across most indicators implies that its full benefits are not yet fully realized, possibly due to limited familiarity, inconsistent usage, or lack of structured integration into the learning process.

The recognition that AI may reduce critical thinking highlights an important concern, indicating that excessive dependence on AI could negatively affect the development of cognitive skills. Furthermore, the relatively low rating on independent learning suggests that AI tools do not automatically foster self-directed learning among students.

These results are consistent with Zhang et al. (2025), which found that students generally perceive AI as a useful tool for improving understanding and engagement, especially in complex subjects. At the same time, the concern about reduced critical thinking supports the findings of Giray et al. (2024), which emphasized that overreliance on AI may limit students' analytical and problem-solving abilities.

Table 6. Computed Overall Weighted Mean

Aspects	WX	VI	Rank
Frequency of Use	2.83	MA	3
Ease of Use	3.18	MA	2
Ethical Concern	3.19	MA	1
Impact on Learning	2.79	MA	4
Overall WX	3.00	MA	

The table above presents the computed overall weighted mean for each aspect, along with the general weighted mean. Ethical Concern ranked first, obtaining a weighted mean of 3.19 and interpreted as “Moderately Agree.” This was followed by Ease of Use, which placed second with a weighted mean of 3.18, also interpreted as “Moderately Agree.” Frequency of Use ranked third, with a weighted mean of 2.83 and the same verbal interpretation. Lastly, Impact on Learning ranked fourth, recording a weighted mean of 2.79 and likewise interpreted as “Moderately Agree.” Overall, the computed weighted mean of 3.00 indicates that respondents moderately agree across all aspects.

Moreover, as shown on the table below, when respondents were grouped according to age, the results showed significant differences in terms of frequency of use ($p = 0.028$) and ease of use ($p = 0.034$). Since these p -values are below the standard threshold of 0.05, the differences are considered statistically significant and may be attributed to age-related factors rather than chance. Thus, the null hypothesis for these aspects is rejected. On the other hand, no significant differences were found in ethical concern ($p = 0.065$) and impact on learning ($p = 0.184$), as these p -values exceed 0.05, indicating that the variations are likely due to chance. Therefore, the null hypothesis for these aspects is accepted.

Table 7. Test of Significant Difference on the Perception of Criminology Students of Tomas Claudio Colleges on the Use of Artificial Intelligence in Academic Work in Terms of Age and Year Level

Aspect	F – comp	P – values	Decision	Verbal Interpretation
Age				
Frequency of Use	3.732	.028	Rejected Ho	Significant
Ease of Use	3.526	.034	Rejected Ho	Significant
Ethical Concern	2.834	.065	Accepted Ho	Not Significant
Impact on Learning	1.730	.184	Accepted Ho	Not Significant
Year Level				
Frequency of Use	9.133	.000	Rejected Ho	Significant
Ease of Use	3.460	.020	Rejected Ho	Significant
Ethical Concern	1.392	.252	Accepted Ho	Not Significant
Impact on Learning	3.714	.015	Rejected Ho	Significant

When respondents were grouped according to age, the p -values for frequency of use ($p = 0.028$)

and ease of use ($p = 0.034$) are both below the 0.05 level of significance, indicating significant differences. Therefore, the null hypothesis for these two aspects is rejected. However, ethical concern ($p = 0.065$) and impact on learning ($p = 0.184$) have p-values greater than 0.05, indicating no significant differences. Thus, the null hypothesis for these aspects is accepted.

In terms of year level, the p-values for frequency of use ($p = 0.000$), ease of use ($p = 0.020$), and impact on learning ($p = 0.015$) are all below the 0.05 level of significance, indicating significant differences. Hence, the null hypothesis for these variables is rejected. However, ethical concern ($p = 0.252$) shows no significant difference since it is above the 0.05 threshold, leading to the acceptance of the null hypothesis for this aspect.

The findings suggest that age and year level influence students' frequency of AI use and their perception of its ease of use, while year level also affects how students perceive AI's impact on learning. This indicates that students with greater academic experience are more likely to integrate AI into their academic work and recognize its benefits. In contrast, the absence of significant differences in ethical concern across both age and year level implies that students share similar views regarding academic integrity and the responsible use of AI, regardless of their demographic profile.

These findings highlight the importance of providing year-level-based AI training and guidance, particularly for lower-year students who may still be developing their familiarity with AI tools. At the same time, institutions should continue promoting consistent ethical standards and institutional policies to ensure the responsible and ethical use of AI across all student groups. These results are consistent with Muñoz (2025), who emphasized that ethical perceptions are largely shaped by institutional values rather than demographic characteristics, and with Diloy et al. (2024), who found that while AI usage varies according to students' academic exposure, ethical concerns remain relatively consistent among learners.

Table 8. T-test on the Significant Difference on the Perception of Criminology Students of Tomas Claudio Colleges on the Use of Artificial Intelligence in Academic Work in Terms of Sex

Aspects	Mean	df	t – Value	Sig. Value	Decision	Verbal Interpretation
Frequency of Use	.817	78	.818	.369	Accepted Ho	Not Significant
Ease of Use	2.654	78	.865	.107	Accepted Ho	Not Significant
Ethical Concern	4.057	78	-.480	.047	Rejected Ho	Significant
Impact on Learning	.013	78	1.276	.909	Accepted Ho	Not Significant

As presented in the table above, the frequency of use ($p = 0.369$), ease of use ($p = 0.107$), and impact on learning ($p = 0.909$) showed no significant differences when grouped according to sex, since all p-values are greater than the 0.05 level of significance. Therefore, the null hypothesis for these aspects is accepted. In contrast, the ethical concern ($p = 0.047$) demonstrated a significant difference, as its p-value is less than 0.05, leading to the rejection of the null hypothesis for this variable.

The lack of significant differences in frequency of use, ease of use, and impact on learning suggests that AI tools are similarly accessible and beneficial to both male and female students. This indicates that sex does not significantly influence how students utilize or perceive the functional aspects of AI in their academic activities. However, the significant difference in ethical concern implies that male and female students may differ in their level of awareness or sensitivity toward ethical issues such as academic integrity, plagiarism, and fairness. This suggests that ethical perceptions of AI use are not entirely uniform across sexes and may be shaped by variations in values, attitudes, or learning experiences.

These findings are consistent with Zhang et al. (2025), which reported that AI usage and perceived usefulness do not significantly vary between sexes, as both male and female students generally

have equal exposure to digital technologies.

4. Discussion

The findings of the study reveal that the respondents, who were criminology students from Tomas Claudio Colleges, are predominantly within the age bracket of 18–20 years old, indicating that most participants belong to a younger generation of learners who are generally more exposed to digital technologies. The higher proportion of male respondents also reflects the common trend in criminology programs where male students tend to outnumber females. Meanwhile, the equal distribution across year levels suggests that the data captures perspectives from students at different stages of academic development, providing a balanced view of AI usage in academic work.

In terms of frequency of use, respondents moderately agreed that they utilize AI tools for academic assistance, particularly for quick explanations and support. This indicates that while AI is already integrated into students' study habits, it is not yet maximized as a primary learning tool. This pattern suggests that students are still in the transitional phase of adopting AI, using it mainly as a supplementary resource rather than a central component of their academic work.

With regard to ease of use, respondents strongly agreed that AI tools are easy to access and operate. This highlights that accessibility is a key factor driving AI adoption among students. The high level of agreement implies that technical barriers are minimal, allowing students to engage with AI tools without difficulty. This supports the idea that when technology is user-friendly, students are more likely to incorporate it into their learning processes.

In terms of ethical concerns, respondents strongly agreed that AI should be used with honesty and proper acknowledgment. This reflects a clear awareness of academic integrity and responsible AI use among criminology students. However, the presence of moderate agreement in other ethical indicators suggests that while students understand the importance of ethical practices, there may still be uncertainty in distinguishing acceptable and inappropriate uses of AI. This aligns with principles in criminology that emphasize ethics, accountability, and responsible behavior, especially in professional and academic contexts.

Regarding the impact of AI on learning, respondents moderately agreed that AI has a positive effect, particularly in improving understanding and efficiency. However, the findings also indicate concerns about overreliance on AI, which may reduce critical thinking skills. This reflects a dual perspective where AI is seen as both beneficial and potentially limiting, depending on how it is used. Similar to Labeling Theory, which explains how external influences can shape behavior, AI can influence learning patterns either positively or negatively depending on students' level of dependence.

The analysis of significant differences further strengthens these findings. The absence of significant differences in frequency of use, ease of use, and impact on learning when grouped according to sex suggests that AI tools are equally accessible and beneficial regardless of gender. This indicates that technological adoption is not influenced by sex, as both male and female students have similar exposure to and familiarity with digital tools. However, the presence of a significant difference in ethical concern implies that male and female students may vary in their sensitivity to ethical issues such as plagiarism, fairness, and academic integrity. This suggests that ethical perspectives may be shaped by individual values and experiences rather than access to technology.

Overall, the results indicate that criminology students demonstrate a moderate level of AI integration in academic work, with strong accessibility, developing ethical awareness, and a generally positive but cautious perception of its impact on learning. These findings highlight the need for educational institutions to strengthen AI-related training, particularly in promoting critical thinking and clarifying ethical guidelines. By doing so, students can maximize the benefits of AI while minimizing its potential risks, ensuring that it serves as a supportive tool rather than a substitute for learning.

5. Conclusion

To conclude, the study found that criminology students generally have a positive yet cautious perception of the use of artificial intelligence (AI) in academic work. AI is viewed as a valuable support

tool that enhances learning efficiency, particularly in research, idea generation, and academic organization. However, students also expressed concerns regarding academic integrity, ethical use, overreliance, and the possible decline in critical thinking, emphasizing that AI should complement rather than replace human judgment and analytical skills.

Despite the valuable findings, the study has several limitations. It was limited to eighty (80) criminology students from Tomas Claudio Colleges and relied on self-reported data using a descriptive quantitative design. Furthermore, the study considered only selected demographic variables and did not examine other factors such as digital literacy, academic performance, access to technology, and familiarity with AI applications.

Future researchers are encouraged to conduct similar studies using larger and more diverse samples from different higher education institutions and to employ mixed-methods or qualitative approaches for a deeper understanding of students' experiences with AI. Further studies may also examine the relationship between AI utilization and academic performance, critical thinking, digital literacy, research competencies, and academic integrity, as well as the long-term effects of AI integration in higher education to support the development of effective institutional policies and responsible AI practices.

References

- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Diloy, M. A., Comparativo, C. P. E., Reyes, J. C. T., Eusebio, B. J. M., & Morona, L. I. C. (2023). Exploring the Landscape of AI Tools in Student Learning: An analysis of commonly utilized AI Tools at a university in the Philippines. *Exploring the Landscape of AI Tools in Student Learning: An Analysis of Commonly Utilized AI Tools at a University in the Philippines. In Proceedings of the 6th Artificial Intelligence and Cloud Computing Conference*, 266–271. <https://doi.org/10.1145/3639592.3639629>
- Giray, L., De Silos, P. Y., Adornado, A., Buelo, R. J. V., Galas, E., Reyes-Chua, E., Santiago, C., & Ulanday, M. L. (2024). Use and Impact of Artificial Intelligence in Philippine Higher Education: Reflections from Instructors and Administrators. *Internet Reference Services Quarterly*, 28(3), 315–338. <https://doi.org/10.1080/10875301.2024.2352746>
- Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and Implications for Teaching and Learning*.
- Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeiffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., . . . Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
- Sánchez Muñoz, J., et al. (2025). Constructing student knowledge amidst the era of artificial intelligence: A sociology of education perspective. *Waskita: Jurnal Pendidikan Nilai dan Pembangunan Karakter*, 9(1).
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4
- Thorp, H. H. (2023). ChatGPT is fun, but not an author. *Science*, 379(6630), 313. <https://doi.org/10.1126/science.adg7879>
- Yan, Y., Wu, B., Pi, J., & Zhang, X. (2025). Perceptions of AI in Higher Education: Insights from Students at a Top-Tier Chinese University. *Education Sciences*, 15(6), 735. <https://doi.org/10.3390/educsci15060735>
- Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., Liu, J., Yuan, J., & Li, Y. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity*, 2021(1). <https://doi.org/10.1155/2021/8812542>

Gender Differences in Crime Commission and Victimization: A Comparative Analysis

Ma. Charisse B. Vedaña, John Patrick B. De Jesus, Antonio R.

Mateo, Glenn B. Antipolo, Jhason E. Rodriguez, Christian G. Martinez, and Marie Maurine G. Murillo

Tomas Claudio Colleges

*Email : mcvedana@gmail.com

Abstract

This study, Gender Differences in Crime Commission and Victimization: A Comparative Analysis, aimed to examine and identify the differences in crime commission and victimization between men and women. It utilized official crime records from the Philippine National Police (PNP) Station of Morong, Rizal for the years 2021, 2022, and 2023. The research focused on identifying the types of crimes committed and experienced by men and women, as well as determining whether significant differences existed in crime patterns based on gender. A descriptive-comparative research design was employed using documentary analysis of police crime data. The findings revealed that men were more frequently involved as offenders, particularly in crimes against property and persons, while women were more commonly recorded as victims, especially in cases involving domestic violence and sexual offenses. The analysis further showed consistent gender-based differences in crime involvement across the three-year period, indicating distinct patterns in both the commission and victimization of crime. These results highlighted the influence of gender roles, social structures, and exposure to risk in shaping crime dynamics within the community. The study concluded that gender played a significant role in both the commission and victimization of crime in Morong, Rizal. It recommended the implementation of gender-responsive crime prevention strategies, strengthened victim support services, and community-based interventions that addressed gender-specific risks. Future studies were encouraged to incorporate qualitative approaches, additional variables, and broader geographic coverage to further validate and enrich the findings.

Keywords: Victimization; Gender Role Crimes; Crime Commission; Gender Differences.

1. Introduction

Crime is a persistent social concern that affects societies across economic, cultural, and geographic boundaries. It poses serious threats to public safety, social order, and community well-being. While crime affects all members of society, research has consistently shown that patterns of crime commission and victimization vary significantly according to gender. Men are more frequently involved in the commission of crimes, particularly violent and property-related offenses, whereas women are more often victims, especially in cases involving domestic violence, sexual abuse, and other interpersonal crimes (United Nations Office on Drugs and Crime [UNODC], 2023; World Health Organization [WHO], 2021). These gender-based differences highlight the importance of examining crime through a gender-sensitive lens.

Globally, crime statistics reveal a clear gender disparity in offending and victimization. According to the United Nations Office on Drugs and Crime (2023), males account for the majority of offenders in serious crimes such as homicide, robbery, and physical assault, while females comprise a large proportion of victims in sexual and domestic violence cases. These patterns are influenced by social roles, power relations, and differing levels of exposure to risk (UNODC, 2022). Such realities underscore that crime is not merely an individual act but also a social phenomenon shaped by broader structural conditions.

Criminological theories help explain these gender patterns in crime. General Strain Theory suggests that individuals respond to social pressures and frustrations in different ways, with men being more likely to externalize strain through aggressive or criminal behavior (Agnew, 1992). Feminist criminology emphasizes that patriarchy, gender inequality, and power imbalances contribute to women's heightened vulnerability to victimization (Daly & Chesney-Lind, 1988). Similarly, Social Learning

Theory explains that criminal behavior and gender roles are learned through observation, imitation, and reinforcement from family, peers, and society (Bandura, 1977).

Recent studies have emphasized the value of examining crime through a gender perspective to better understand differences in offending and victimization. For instance, research conducted in the Philippines found significant gender differences in criminal victimization and highlighted the need for gender-responsive police interventions and crime prevention programs. Likewise, studies on crime prevention and police effectiveness have recommended the use of localized crime data to strengthen law enforcement strategies and community safety initiatives. Despite these contributions, limited research has specifically examined the comparative patterns of crime commission and victimization between men and women at the municipal level, particularly in Morong, Rizal. This gap underscores the need for a localized analysis using official police records to provide evidence-based information that can support gender-responsive crime prevention and policy formulation in the municipality.

In the Philippine context, crime remains a significant concern, particularly at the local level where gender dynamics strongly influence social interactions. Data from the Philippine National Police (2023) indicate that men continue to comprise the majority of offenders, while women are disproportionately represented among victims of violence and abuse. In Morong, Rizal, commonly reported crimes include theft, physical injuries, robbery, and violence against persons based on official police records from 2021 to 2023. Although the municipality does not rank among the areas with the highest crime incidence, recurring cases reflect gender-based patterns in crime commission and victimization that warrant closer examination. By focusing on Morong, Rizal, this study provides localized evidence that complements existing national and international research on gender and crime while addressing the scarcity of municipal-level studies in the area.

This study sought to conduct a comparative analysis of the commission and victimization of crime by men and women in Morong, Rizal, using official police records from 2021 to 2023. Specifically, it aimed to identify the types of crimes committed and experienced by each gender and determine whether significant differences existed in crime patterns. By analyzing crime data through a gender perspective, the study aimed to contribute to evidence-based and gender-responsive crime prevention strategies.

The findings of this research are expected to benefit law enforcement agencies, local government units, and community stakeholders by providing insights into gender-specific risks and crime trends. Ultimately, the study aimed to support the development of effective interventions that not only address crime commission but also strengthen protection and support mechanisms for victims, thereby promoting safer and more inclusive communities.

Objectives

This study aimed to determine the comparative analysis of the commission and victimization of crime by men and women in Morong, Rizal. It was based on crime data and official documents obtained from the Philippine National Police (PNP) Station in Morong, Rizal, in order to formulate interventions to promote peace in the said municipality.

1. What types of crime data can be collected from the Morong Police Station for the years 2021, 2022, and 2023?
2. What is the variation or circumstances between men and women as reflected in the data gathered during the aforementioned years?
3. What are the common cases in PNP station Morong Rizal in the years 2021, 2022, and 2023, from the data gathered?
4. What recommendation can be offered to minimize crime commission and victimization involving men and women in Morong Rizal?

2. Materials and Methods

This study employed a descriptive-comparative research design utilizing documentary analysis to examine gender-based differences in the commission and victimization of crime. The design was considered appropriate as it allowed for a systematic comparison of crime patterns between men and

women based on recorded data, without manipulating variables. The study relied on the data extracted from official police crime records to identify trends and differences across gender and crimes committed.

The sources of data for this study were the official crime records of the Philippine National Police (PNP) Station in Morong, Rizal covering the years 2021, 2022, and 2023. These records included documented cases of crimes against persons and crimes against property, indicating the gender of both offenders and victims. The use of police records ensured the reliability and authenticity of the data, as these documents are formally recorded and maintained by law enforcement authorities.

The primary instrument utilized for collecting the necessary data in this research study was the information obtained through an PNP station in Morong Rizal. This approach was chosen due to its practicality and efficiency in addressing the data requirements. This study employs ex post facto data and utilizes information relevant to the crime data needs of the PNP station in Morong, Rizal. A key advantage of this method was the ability to maintain full confidentiality since no specific respondents were directly identified or involved in the process.

The data collection procedure followed several steps. First, formal permission was secured from the concerned authorities to access police crime records. Upon approval, the researchers reviewed the crime blotters and official records covering the specified years. Relevant data were carefully extracted, analyzed, organized, and tabulated according to gender and crime classification. The collected data were then checked for completeness and consistency prior to analysis.

For data analysis, descriptive statistical tools such as frequency counts and percentage distribution were used to describe the crime patterns of men and women in terms of commission and victimization. Comparative analysis was employed to determine differences between male and female involvement in various types of crimes across the three-year period. The results were presented in tables and interpreted to highlight gender-based trends and disparities in crime involvement in Morong, Rizal.

3. Results

Table 1 REPORTED CRIME VIOLATION IN CRIMES AGAINST PROPERTY YEAR 2021, 2022 and 2023 IN MORONG RIZAL

Crime Against Property	2021 Male	2021 Female	2021 Total	2022 Male	2022 Female	2022 Total	2023 Male	2023 Female	2023 Total
Reckless Imprudence Resulting to Damage to Property	2	0	2	2	0	2	11	1	12
Robbery with Homicide	1	0	1	1	0	1	1	1	2
Theft	2	0	2	2	0	2	7	0	7
Bouncing Checks Law	0	0	0	0	0	0	2	0	2
Discharge of Firearms	0	0	0	0	0	0	3	0	3
Malicious Mischief	0	0	0	0	0	0	8	0	8
Anti-Carnapping Act of 2016	0	0	0	0	0	0	2	0	2
Qualified Theft	0	0	0	0	0	0	2	0	2
Qualified Trespass to Dwelling	0	0	0	0	0	0	4	0	4
Swindling (Estafa)	0	0	0	0	0	0	3	0	3
Grand Total	5	0	5	5	0	5	43	2	45

From 2021 to 2022, crimes against property remained at a consistently low level, with only five recorded cases each year. However, in 2023, there was a sharp and notable increase to 45 cases, indicating a significant rise in either the occurrence, reporting, or documentation of property-related offenses. In the earlier years, the most common incidents were Reckless Imprudence Resulting to Damage to Property (Art. 365, Revised Penal Code), Theft (Art. 308, Revised Penal Code), and Robbery with Homicide (Art. 294, Revised Penal Code). By 2023, not only did these crimes increase in frequency—particularly reckless imprudence and theft—but several new types of property crimes also appeared in the records, such as violations of the Bouncing Checks Law (B.P. Blg. 22), Discharge of Firearms (Art. 282, Revised Penal Code), Malicious Mischief (Art. 327, Revised Penal Code), violations of the Anti-Carnapping Act of 2016 (R.A. 10883), Qualified Theft (Art. 310, Revised Penal Code), Qualified Trespass to Dwelling (Art. 280, Revised Penal Code), and Swindling or Estafa (Art. 315, Revised Penal Code). Across all three years, offenders were predominantly male, with female involvement recorded only minimally in 2023. Overall, the data reflects a clear escalation and diversification of crimes against property in 2023 compared to the previous two years.

Table 2 REPORTED CRIME VIOLATION IN CRIMES AGAINST PERSON YEAR 2021, 2022 and 2023 IN MORONG RIZAL

Crimes Against Person	2021 Male	2021 Female	2021 Total	2022 Male	2022 Female	2022 Total	2023 Male	2023 Female	2023 Total
Alarms and Scandals (Art. 155)	3	0	3	0	0	0	0	0	0
Anti-Rape Law (RA 8353)	2	0	2	5	0	5	4	0	4
Anti-VAWC (RA 9262)	2	0	2	1	0	1	1	0	1
Anti-Photo & Video Voyeurism	0	0	0	0	0	0	1	0	1
Consented Abduction	0	0	0	1	0	1	0	0	0
Grave Threats	0	0	0	0	0	0	4	0	4
Homicide	1	0	1	0	0	0	0	0	0
Murder	12	0	12	3	0	3	3	0	3
Parricide	0	0	0	1	0	1	0	0	0
Rape (RPC Art. 266-A)	0	0	0	0	0	0	1	0	1
Reckless Imprudence Resulting to Homicide	1	0	1	3	1	4	18	0	18
Reckless Imprudence Resulting to Multiple Physical Injury	0	0	0	4	1	5	1	0	1
Resistance & Disobedience (Art. 151)	3	0	3	0	0	0	10	0	10
Robbery with Homicide	1	0	1	0	0	0	1	1	2
Slight Physical Injuries	2	0	2	5	0	5	4	0	4
Serious Physical Injuries	6	0	6	0	0	0	0	0	0
Child Abuse Law (RA 7610)	5	0	5	14	0	14	6	0	6
Obstruction of Justice (PD 1829)	4	0	4	0	0	0	0	0	0
Unjust Vexation	0	0	0	0	0	0	2	0	2
Grand Total	42	0	42	37	2	39	56	1	57

The data indicates that crimes against persons showed a fluctuating trend over the three-year period, decreasing slightly from 42 cases in 2021 to 39 in 2022, before rising significantly to 57 cases in 2023. Across all years, the majority of offenders were male, with female involvement remaining extremely minimal. Among the most frequently recorded offenses were Child Abuse (RA 7610), Murder, and Reckless Imprudence Resulting to Homicide, with the latter experiencing a notable surge in 2023, suggesting an increase in negligence-related incidents. Additionally, cases of Grave Threats and Resistance and Disobedience also rose sharply in 2023, contributing to the overall increase in crime. On the other hand, some offenses such as Alarms and Scandals and Obstruction of Justice either declined or

were no longer recorded in the later years. Overall, the data reflects a concerning upward trend in violent and negligence-related crimes in 2023 after a brief decline in 2022.

Table 3 REPORTED CRIME VIOLATION IN VICTIMLESS CRIMES YEAR 2021, 2022 and 2023 IN MORONG RIZAL

Victimless Crimes	2021 MALE	2021 FEMALE	2021 TOTAL	2022 MALE	2022 FEMALE	2022 TOTAL	2023 MALE	2023 FEMALE	2023 TOTAL
PD 1602 as amended by RA 9287 (Illegal Numbers Game)	90	16	106	26	0	26	22	11	33
Anti-Gambling Law (PD 1602)	12	3	15	43	8	51	32	11	43
Comprehensive Dangerous Drugs Act (RA 9165)	153	7	160	139	2	141	65	3	68
Illegal Possession of Weapons (BP 6)	2	0	2	1	0	1	0	0	0
Prohibited Transaction (RPC Art. 215)	1	1	2	0	0	0	0	0	0
Anti-Electricity Pilferage (RA 7832)	0	0	0	0	0	0	2	0	2
GRAND TOTAL	258	27	285	209	10	219	121	25	146

The data shows that victimless crimes are primarily dominated by violations of the Comprehensive Dangerous Drugs Act of 2002 (RA 9165), which ranks first with a total of 369 recorded cases over the three-year period. Although it remains the highest, there is a clear downward trend, decreasing from 160 cases in 2021 to 141 in 2022, and further dropping significantly to 68 cases in 2023. This suggests an overall improvement or intensified enforcement efforts against drug-related offenses in the later year.

Meanwhile, violations of the law increasing penalties for illegal numbers games (PD 1602 as amended by RA 9287) rank second with a total of 165 cases. This category shows a sharp decline from 106 cases in 2021 to only 26 in 2022, followed by a slight increase to 33 cases in 2023, indicating some fluctuation in enforcement or occurrence of illegal gambling activities.

On the other hand, violations of the Anti-Gambling Law (PD 1602) rank third with 109 total cases. Unlike the other categories, this offense shows inconsistent movement, starting with 15 cases in 2021, rising significantly to 51 in 2022, and slightly decreasing to 43 in 2023. Overall, the data indicates that drug-related offenses remain the most prevalent victimless crime, although they are steadily declining, while gambling-related offenses fluctuate but remain comparatively lower in total incidence.

Table 4 REPORTED VICTIM IN CRIMES AGAINST PROPERTY YEAR 2021, 2022 and 2023 IN MORONG, RIZAL

Crime Against Property	Female 2021	Male 2021	Total 2021	Female 2022	Male 2022	Total 2022	Female 2023	Male 2023	Total 2023	Grand Total
Robbery – RPC Art. 293	1	4	5	2	5	7	5	3	8	20
Theft – RPC Art. 308	2	0	2	1	6	7	4	3	7	16
Reckless Imprudence Resulting to Damage to Property – RPC Art. 365	3	4	7	3	5	8	2	16	18	33
New Anti-Carnapping Act of 2016 – RA 10883	0	0	0	1	1	2	0	2	2	4
Qualified Theft – RPC Art. 310	0	0	0	1	2	3	0	1	1	4
Swindling (Estafa) – RPC Art. 315	0	0	0	0	1	1	1	2	3	4
Anti-Electricity and Electric Transmission Line/Materials Pilferage Act of 1994 – RA 7832	0	0	0	0	0	0	0	1	1	1
Grand Total	6	8	14	8	20	28	12	28	40	82

The table shows that crimes against property steadily increased over the three-year period, rising from 14 cases in 2021 to 28 cases in 2022, and further climbing to 40 cases in 2023, with a total of 82 recorded incidents overall. This consistent upward trend suggests a gradual but clear escalation of property-related offenses within the observed period, with the most noticeable increase occurring between 2022 and 2023.

In terms of gender distribution, male offenders consistently outnumbered female offenders across all three years. In 2021, there were 8 male offenders compared to 6 females, showing a relatively small gap. However, this difference became more pronounced in 2022 with 20 males and 8 females, and widened further in 2023 with 28 males and 12 females. This pattern indicates that male involvement not only remained dominant but also increased at a faster rate compared to female involvement over time.

When grouped by offense type, Reckless Imprudence Resulting to Damage to Property recorded the highest number of cases, totaling 33 incidents. This offense also showed a significant surge in 2023, largely driven by 16 male offenders, making it the most prominent contributor to the overall increase in property crimes. Robbery followed as the second most frequent offense with 20 cases, while Theft ranked third with 16 cases. Other offenses, including Anti-Carnapping, Qualified Theft, and Swindling (Estafa), were less frequent but showed noticeable occurrences, particularly in 2022 and 2023, contributing to the overall upward trend.

Table 5 REPORTED VICTIM IN CRIMES AGAINST PERSON YEAR 2021, 2022 and 2023 IN MORONG RIZAL

Crime Against Person	Female 2021	Male 2021	Total 2021	Female 2022	Male 2022	Total 2022	Female 2023	Male 2023	Total 2023	Grand Total
Alarm and Scandals – RPC Art. 155	0	1	1	0	0	0	0	0	0	1
Anti-Violence Against Women and Their Children Act – RA 9262	2	0	2	1	0	1	1	0	1	4
Anti-Rape Law of 1997 – RA 8353	2	0	2	3	1	4	1	0	1	7
Homicide – RPC Art. 249	0	1	1	0	3	3	0	13	13	17
Light/Grave Threats – RPC Art. 283 / 282	0	1	1	0	0	0	0	3	3	4
Murder – RPC Art. 248	5	9	14	1	1	2	0	2	2	18
Reckless Imprudence Resulting to Homicide – RPC Art. 365	0	1	1	1	5	6	0	5	5	12
Reckless Imprudence Resulting to Physical Injury – RPC Art. 365	3	4	7	3	4	7	3	13	16	30
Serious Physical Injuries – RPC Art. 263	2	3	5	0	0	0	0	0	0	5
Slight Physical Injuries and Maltreatment – RPC Art. 266	0	1	1	0	2	2	0	3	3	6
Special Protection of Children / Anti-Child Abuse Law – RA 7610	4	0	4	8	2	10	5	2	7	21
Consented Abduction – RPC Art. 343	0	0	0	1	0	1	0	0	0	1
Parricide – RPC Art. 246	0	0	0	0	1	1	0	0	0	1
Anti-Photo and Video Voyeurism Act – RA 9995	0	0	0	0	0	0	1	0	1	1
Bouncing Check Law – BP 22	0	0	0	0	0	0	1	1	2	2
Discharge of Firearms – RPC Art. 254	0	0	0	0	0	0	1	1	2	2
Malicious Mischief – RPC Art. 327	0	0	0	0	0	0	1	5	6	6
Qualified Trespass to Dwelling – RPC Art. 280	0	0	0	0	0	0	1	2	3	3
Rape – RPC Art. 266-A	0	0	0	0	0	0	1	0	1	1
Resistance and Disobedience – RPC Art. 151	0	0	0	0	0	0	0	2	2	2
Unjust Vexation – RPC Art. 287	0	0	0	0	0	0	1	2	3	3
Grand Total	18	21	39	18	19	37	17	56	73	149

The data shows that crimes against persons remained relatively stable in 2021 (39 cases) and 2022 (37 cases), with only a slight decrease observed between the two years. However, a significant increase occurred in 2023, where cases more than doubled to 73, resulting in a total of 149 cases across the three-year period. This sharp rise in 2023 suggests a noticeable shift in the frequency of crimes against persons after a relatively steady pattern in the earlier years.

In terms of gender distribution, female involvement remained almost consistent throughout the three-year span, showing minimal variation in recorded cases. In contrast, male involvement significantly increased in 2023, indicating that the overall rise in crime cases during that year was largely driven by male offenders. This highlights a growing gender gap in offender participation over time.

Regarding offense types, Reckless Imprudence Resulting in Physical Injury recorded the highest number of cases, making it the most common offense among crimes against persons. It was followed by violations of Special Protection of Children (RA 7610), Murder, and Homicide, which, although fewer in number, represent more serious and violent offenses. Overall, the trend suggests not only an increase in total crime cases in 2023 but also a concerning rise in more serious offenses compared to the previous years.

Table 6 REPORTED VICTIM IN VICTIMLESS CRIMES YEAR 2021, 2022 and 2023 IN MORONG, RIZAL

Victimless Crimes	2021 Female	2021 Male	2021 Total	2022 Female	2022 Male	2022 Total	2023 Female	2023 Male	2023 Total	Grand Total
Comprehensive Dangerous Drugs Act (RA 9165)	1	0	1	0	0	0	0	2	2	3
Illegal Possession of Bladed/Pointed/Blunt Weapons (BP 6)	0	1	1	0	1	1	0	0	0	2
Comprehensive Law on Firearms & Ammunition	0	0	0	0	1	1	0	0	0	1
TOTAL	1	1	2	0	2	2	0	2	2	6

From 2021 to 2023, a total of 6 victimless crime cases were recorded, with a consistent rate of 2 cases per year, indicating a stable trend over time. Among the offenses, violations of the Comprehensive Dangerous Drugs Act (RA 9165) had the highest number of cases at 3, showing an increase in 2023 after no incidents in 2022. Illegal possession of bladed, pointed, or blunt weapons (BP 6) accounted for 2 cases, occurring only in 2021 and 2022, with no recorded cases in 2023, suggesting a possible decline. Meanwhile, violations of the Comprehensive Law on Firearms and Ammunition were minimal, with only 1 case reported in 2022. In terms of gender, the data shows that males were predominantly involved, comprising 5 out of the 6 total cases, while only 1 case involved a female offender. Overall, the data reflects low but persistent victimless crime incidence, with drug-related offenses being the most common.

Table 7 Ranking on the Common Reported Commission by men and women in Morong, Rizal in the Years 2021, 2022, and 2023

COMMISSION		2021	2022	2023	Overall Year Total	Rank
COMPREHENSIVE DANGEROUS DRUGS ACT OF 2002-RA 9165	Victimless Crimes	160	141	68	369	1
AN ACT INCREASING THE PENALTIES FOR ILLEGAL NUMBERS GAMES, AMENDING CERTAIN PROVISIONS OF ANTI-GAMBLING LAW PD. NO. 1602, AND FOR OTHER PURPOSES PD 1602 as amended by RA 9287	Victimless Crimes	106	26	33	165	2
ANTI-GAMBLING LAW -PD 1602	Victimless Crimes	15	51	43	109	3

The data shows that victimless crimes are dominated by violations of the Comprehensive Dangerous Drugs Act of 2002 (RA 9165), which ranks first with a total of 369 cases, although it shows a clear decreasing trend from 160 in 2021 to 68 in 2023. Illegal numbers games (PD 1602 as amended by RA 9287) rank second with 165 cases, dropping sharply in 2022 but slightly increasing again in 2023. Meanwhile, violations of the Anti-Gambling Law (PD 1602) rank third with 109 cases, showing fluctuation but generally lower figures compared to the other two. Overall, the data indicates a general decline in drug-related offenses over time, while gambling-related violations remain relatively variable but less prevalent. This suggests that interventions against drug-related crimes may be becoming more effective over time. However, continued enforcement and prevention strategies are still necessary to sustain this downward trend across all categories.

Table 8 Ranking on the Common Reported Victimization by men and women in Morong, Rizal in the Years 2021, 2022, and 2023

VICTIMIZATION		2021	2022	2023	Overall Year Total	Rank
RECKLESS IMPRUDENCE RESULTING TO DAMAGE TO PROPERTY - RPC Art 365	Crimes against property	7	8	18	33	1
RECKLESS IMPRUDENCE RESULTING TO PHYSICAL INJURY - RPC Art 365	Crimes against person	7	7	16	30	2
ROBBERY - RPC Art. 293	Crimes against property	5	7	8	20	3

The data shows that victimization cases are primarily dominated by Reckless Imprudence Resulting to Damage to Property (RPC Art. 365), which ranks first under crimes against property with a total of 33 cases. It shows a steady increase from 7 cases in 2021 to 8 in 2022, and then a noticeable rise to 18 in 2023, indicating that incidents involving property damage due to negligence have become more frequent in the latest year.

In second place is Reckless Imprudence Resulting to Physical Injury (RPC Art. 365), classified under crimes against persons, with a total of 30 cases. It remains stable at 7 cases in both 2021 and 2022, but increases significantly to 16 cases in 2023, suggesting a growing number of negligence-related injuries over time.

Meanwhile, Robbery (RPC Art. 293) ranks third with a total of 20 cases, showing a gradual increase from 5 cases in 2021 to 7 in 2022, and 8 in 2023. Overall, the data indicates that both property and person-related victimization cases are generally increasing over the three-year period, with reckless imprudence cases being the most prevalent type of offense.

4. Discussion

The study analyzed crime data recorded at the PNP Station in Morong, Rizal from 2021 to 2023, focusing on patterns of crime commission, victimization, gender differences among offenders, and the most common types of offenses. Overall, the data shows that the total number of offenders gradually decreased over the three-year period, from 350 in 2021 to 298 in 2022, and further down to 265 in 2023. Despite this decline, drug-related offenses consistently remained the most prevalent, particularly violations of the Comprehensive Dangerous Drugs Act of 2002 (RA 9165). Gambling-related offenses and other crimes such as homicide, robbery, and reckless imprudence were also consistently recorded across the years, indicating persistent criminal activity in these categories.

In terms of victimization, the data reveals an increasing trend, rising from 56 victims in 2021 to 69 in 2022, and significantly increasing to 116 in 2023. Reckless imprudence resulting in physical injury and homicide were among the most frequently reported cases, along with robbery and child abuse, which

appeared consistently throughout the three-year period. This suggests that while the number of offenders is decreasing, the impact of crimes on individuals is becoming more severe or more frequently reported.

Regarding gender differences, the findings clearly show that men are far more involved in criminal activities compared to women. This is especially evident in drug-related offenses, where the majority of violations under RA 9165 were committed by male offenders. A similar pattern is observed in gambling-related crimes, where men also dominate the statistics. In contrast, female involvement in these offenses remains significantly lower, highlighting a consistent gender gap in crime commission across all three years.

Overall, the study highlights that drug-related crimes remain the most dominant offenses in Morong, Rizal, followed by gambling-related violations and other forms of criminal activity. While there is a gradual decline in some crime categories, the rising trend in victimization suggests that the impact of crimes on individuals is becoming more pronounced. Based on these findings, the study recommends strengthening law enforcement operations, enhancing community-based crime prevention programs, improving victim support and protection services, and promoting socioeconomic development initiatives. These combined strategies are essential in addressing both crime prevention and victim protection, ultimately contributing to a safer and more secure community in Morong, Rizal.

5. Conclusion

This study examined the comparative patterns of crime commission and victimization between men and women in the Municipality of Morong, Rizal from 2021 to 2023 using official crime records from the Philippine National Police. The findings consistently indicate that gender plays a significant role in crime patterns within the municipality. Consistent with previous studies (Heidensohn, 1996; Messerschmidt, 2000; UNODC, 2023), males accounted for the majority of offenders across most crime categories, particularly crimes against persons, crimes against property, and victimless crimes. Drug-related offenses under Republic Act No. 9165 and illegal gambling violations were the most frequently committed offenses, with men comprising the majority of those apprehended.

In contrast, women were more frequently identified as victims of domestic violence, sexual offenses, and child-related crimes, while men were more often victims of robbery and reckless imprudence incidents. These findings support existing literature suggesting that gender differences in victimization are influenced by social roles, exposure to risk, and unequal power relations (Kleck, 2010; UN Women, 2020). The consistency of these patterns across the three-year period reinforces the importance of adopting gender-responsive crime prevention strategies and victim protection programs at the local level.

The findings suggest that local government units and law enforcement agencies should strengthen interventions targeting high-incidence offenses, particularly drug-related crimes and illegal gambling, while enhancing protection mechanisms for women, children, and other vulnerable groups. Community-based crime prevention initiatives, public awareness campaigns, rehabilitation programs, and livelihood opportunities should likewise be expanded to address the social and economic factors associated with criminal behavior. These interventions may contribute to reducing crime while promoting a safer and more inclusive community.

Despite its contributions, this study has several limitations. The analysis relied solely on secondary data obtained from official Philippine National Police records, which may not fully capture unreported or undocumented crimes. The study was also limited to the Municipality of Morong, Rizal, and covered only the period from 2021 to 2023. Furthermore, the quantitative nature of the data did not allow for an in-depth examination of the social, economic, psychological, and cultural factors influencing crime commission and victimization.

Future research should incorporate qualitative methods, such as interviews or focus group discussions with offenders, victims, and law enforcement personnel, to better understand the underlying causes of gender differences in crime. Studies covering a longer time frame and involving multiple municipalities or provinces are also recommended to improve the generalizability of the findings. Additionally, future researchers may examine the influence of socioeconomic status, education, family

background, substance abuse, and community characteristics on crime patterns to provide a more comprehensive understanding of gender-related crime dynamics.

References

- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30(1), 47–87. <https://doi.org/10.1111/j.1745-9125.1992.tb01093.x>
- Agnew, R. (2006). *Pressured into crime: An overview of general strain theory*. Oxford University Press.
- Akers, R. L., & Jennings, W. G. (2016). Social learning theory. In A. R. Piquero (Ed.), *The encyclopedia of crime and punishment*. Wiley. <https://doi.org/10.1002/9781118519639.wbecpx198>
- Bandura, A. (1977). *Social learning theory*. Prentice Hall.
- Chesney-Lind, M., & Morash, M. (2013). Feminist theories of crime. In F. T. Cullen & P. Wilcox (Eds.), *The Oxford handbook of criminological theory* (pp. 287–306). Oxford University Press.
- Daly, K., & Chesney-Lind, M. (1988). Feminism and criminology. *Justice Quarterly*, 5(4), 497–538. <https://doi.org/10.1080/07418828800089871>
- Philippine National Police. (2021). *Annual accomplishment report 2021*. Philippine National Police.
- Philippine National Police. (2022). *Annual accomplishment report 2022*. Philippine National Police.
- Philippine National Police. (2023). *Annual accomplishment report 2023*. Philippine National Police.
- Philippine Statistics Authority. (2023). *Women and men in the Philippines 2023*. <https://psa.gov.ph>
- United Nations Office on Drugs and Crime. (2022). *Gender and organized crime*. United Nations. <https://www.unodc.org>
- United Nations Office on Drugs and Crime. (2023). *Global study on homicide 2023*. United Nations. <https://www.unodc.org/unodc/en/data-and-analysis/global-study-on-homicide.html>
- World Health Organization. (2021). *Violence against women prevalence estimates, 2018: Global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women*. World Health Organization. <https://www.who.int/publications/i/item/9789240022256>

Electoral Participation in Select Mainstreamed Indigenous Communities in the Northern Philippines

Athena Franxia Calata*, Jireh Grace Dumlanta, Isaac Palattao, Christian Bosch Taylan

Political Science and Social Sciences Department, University of Saint Louis Tuguegarao, Tuguegarao City, Cagayan, Philippines

*Emails: athenscheen9@gmail.com

Abstract

Indigenous peoples in the Philippines face persistent barriers to electoral participation despite constitutional guarantees. This mixed-methods study examined the level of electoral participation of mainstreamed Agta communities in Cagayan across three phases of elections—pre-election, election day, and post-election—and identified the factors influencing their engagement. Forty-eight respondents from Basao, Gattaran and Agugaddan, Peña Blanca completed surveys and participated in focus group discussions. Quantitative data were analyzed using descriptive statistics, while qualitative data underwent thematic analysis. Findings reveal a consistent pattern of low electoral participation, with a sharp decline in the post-election phase. Voting on election day is highly valued and consistently practiced, while engagement in pre-election campaigns and post-election activities remains minimal. Several intersecting factors shape this pattern: economic survival takes precedence over political engagement; parental responsibilities, particularly for women, limit availability; literacy barriers diminish political efficacy; and internalized discrimination deters community members from seeking leadership positions. The absence of voter education programs means election day is treated as a normal day after voting, with no understanding of post-election activities as avenues for continued participation. The study concludes that mainstreaming into majority culture does not automatically translate into meaningful political inclusion. Addressing these barriers requires targeted interventions in civic education, literacy programs, economic opportunities, and leadership development, including the institutionalization of Indigenous Peoples Mandatory Representatives in local governance.

Keywords: electoral participation, indigenous peoples, Agta, mainstreamed indigenous communities

1. Introduction

In a democratic country like the Philippines, respect for human rights, fundamental freedoms, and the principle of holding periodic and genuine elections are essential. Generally, political participation refers to voluntary activities undertaken by the public to influence public policy, either directly or by affecting the selection of persons who make policies. The government is responsible for offering indigenous peoples timely and suitable assistance through inclusive and empowering procedures. Regrettably, the government has not fulfilled this obligation, as evidenced by the encounters of indigenous women in provincial communities (Pasimio, 2022).

The Indigenous Peoples Rights Act of 1997 (IPRA) enforces the government's obligation to provide sustained assistance for IPs' self-governance and self-determination (Balila et al., 2013). The inclusion of Indigenous Peoples in local and national politics is vital for achieving development goals (Philippine Commission on Women, 2019). Thus, it is the mandate of the government to optimize and maximize the participation of indigenous peoples in electoral processes.

Indigenous communities aspire to achieve political independence and self-sufficiency, but ultimately strive for effective self-determination as a fundamental human right (Corntassel & Primeau, 2021). The majority of indigenous people, including the Agta tribe members who are the unit of analysis of this study, are aware of their basic rights: self-determination, ancestral domain protection, citizenship rights, and the right to suffrage (Imbong & Espinosa, 2018). However, despite this awareness, participation rates among racial minorities tend to be lower than those of majority groups (Siddique, 2018). Many indigenous people continue to face discrimination and marginalization, limiting their access to basic necessities and their ability to have their voices heard on regional or national platforms (Duguid, 2020).

The 2022 National and Local Elections highlight the need to address this low electoral participation. According to the National Commission on Indigenous Peoples (NCIP), there are around 11.3 million Indigenous people in the Philippines. Yet COMELEC data shows only 40,319 indigenous people participated in the 2022 elections, representing just 6.05% of registered voters within the sector.

Research has identified multiple barriers. A study by Laforteza and Paranaque (2015) found that marginalization and lack of access to basic needs reduce the likelihood of participation due to financial constraints, government inefficiency, and low literacy rates. A 2022 CHR survey highlighted additional obstacles including discrimination at voting precincts, unclear procedures, distant polling locations, and limited access to candidate information. De Guzman (2016) further revealed that lack of legal documents, such as birth certificates, prevents some indigenous peoples from voting.

This study focuses on the Agta people of Cagayan. The Agta are indigenous to northern Luzon (The People of the World Foundation, 2020). They are hunter-gatherers who have maintained a distinct way of life for many millennia (McHenry, 2013). However, contrary to popular belief that Agtas isolate themselves from lowlanders, many have integrated into mainstream civilization. Mainstreamed Agta communities have assimilated into the majority culture, adopting its lifestyle, education, and economic activities (Aspiras, 2016).

One such community originally came from far-flung areas of Gattaran, Cagayan. In the mid-1980s, some members migrated to Agugaddan, Peña Blanca, Cagayan for better opportunities (Tindowen, 2016). The present study was conducted in two mainstreamed Agta communities: Basao, Gattaran and Agugaddan, Peña Blanca, Cagayan.

While existing studies have documented that Agtas are aware of their right to suffrage (Imbong & Espinosa, 2018) and actively vote in some localities (Ancheta et al., 2017), a comprehensive examination of their electoral participation across the different phases — pre-election, election day, and post-election — remains lacking. Furthermore, little is known about the specific factors shaping their level of engagement in each phase.

This gap is particularly significant for mainstreamed Agta communities. Having adopted the lifestyle of the majority population (Aspiras, 2016), they might be expected to participate more fully in electoral politics. Yet they may still face barriers. Understanding whether their integration translates into electoral engagement is essential for designing targeted interventions.

Thus, this study examined the levels of electoral participation among mainstreamed Agtas in Cagayan and the factors that influence such participation across the three phases of elections. Electoral participation, as conceptualized in this study, comprises any form of engagement that shapes or involves the political domain, including voting, running for office, attending electoral gatherings, and engaging in campaign activities (Siddique, 2018).

2. Objectives

This mixed-methods study aimed to examine the level of electoral participation of mainstreamed Agta communities in Cagayan and sought to answer the following questions:

- a. What is the level of electoral participation of the respondents during:
 - i. Pre-election activities
 - ii. Election day activities
 - iii. Post-election activities
- b. What factors influence the level of electoral participation of mainstreamed Agtas?

3. Materials and Methods

Research Design

This study employed a mixed-methods research design, allowing qualitative findings to explain and interpret quantitative results. The quantitative phase used a survey method to produce numerical data measuring respondents' level of electoral participation, enabling the researchers to quantify participation rates and determine significant differences. The qualitative phase utilized a basic qualitative design (Merriam & Tisdell, 2016), which allowed for an in-depth exploration of factors affecting the electoral

experiences of mainstreamed Agtas, including whether the intersection of social identities uniquely influences their electoral engagement.

Locale of the Study

This study was conducted in two mainstreamed Agta communities: Basao, Gattaran and Agugaddan, Peñablanca, Cagayan.

Respondents of the Study

The respondents of the study were the mainstreamed Agtas of Gattaran and Penablanca who had registered as voters in the elections and had resided in the locality for at least ten (10) years. The researchers utilized a non-probability sampling technique, specifically quota sampling, to select the respondents. For the quantitative phase of the study, a total of forty-eight (48) respondents completed the survey questionnaire, with twenty-four (24) respondents from each locale. The small sample size is due to the sampling criteria, considering that these are relatively small communities.

All survey participants were also recruited into the Focus Group Discussions (FGDs).

Research Instrument

The researchers utilized a 21-item survey questionnaire expanded from a 9-item tool adapted from Dioso (2019) on political participation, guided theoretically by Siddique (2018) to capture electoral participation across three stages: pre-election (8 items on campaigning and attending debates/rallies), election day (7 items on voting, running for office, and volunteering), and post-election (6 items on meetings, forums, volunteering, and activism). The research instrument was content validated by academic experts in public administration.

To answer the third research question on factors influencing electoral participation, the researchers conducted Focus Group Discussions (FGDs) using interview guide questionnaires designed to uncover participants' experiences and the factors shaping their engagement in electoral processes.

Data Gathering Procedure

This study employed focus group discussions and a survey questionnaire. The questionnaire underwent rigorous validation and approval. A formal request letter was sent to university offices and the NCIP to secure approval for the study. After approval, the researchers established connections with the Agta communities in Basao, Gattaran and Agugaddan, Peñablanca, Cagayan, to ensure cooperation.

Before data collection, individual consent forms were presented for signing. Questionnaires were carefully distributed, with researchers maximizing reach to ensure clarity and comprehensibility for all respondents. Strict privacy was maintained during the FGDs, which were conducted in Ytawes and Ilocano to enhance comprehension and encourage personalized responses. A total of three FGDs were carried out per locale, with at least one researcher facilitating each FGD for eight members of the community. Participants were assured of anonymity and asked to answer truthfully.

Data Analysis

Upon the accumulation of the survey questionnaires, the data gathered was tallied, tabulated, analyzed, and interpreted. Frequency and percentage were used to describe the profile of the respondents. Descriptive statistics was utilized to evaluate the level of electoral participation of the mainstreamed Agtas. Additionally, the overall mean was used with the following range and adjectival ratings.

Table 1. Interpretation Table for Election Engagement Per Phase

Pre-Elections		During Elections		Post-Elections	
QD	Range	QD	Range	QD	Range
Very Low	8-14	Very Low	7-12	Very Low	6-10
Low	15-21	Low	13-18	Low	11-15
Moderate	22-28	Moderate	19-24	Moderate	16-20
High	29-35	High	25-30	High	21-25
Very High	36-43	Very High	31-36	Very High	26-30

Table 2. Interpretation Table for Overall Election Engagement

Value	Range	Qualitative Description	
5	4.5-5.00	Very High	Always engages in election activities
4	3.5-4.49	High	Often engages in election activities
3	2.5-3.49	Moderate	Occasionally engages in election activities
2	1.5-2.49	Low	Rarely engages in election activities
1	1.00-1.49	Very Low	Never engages in election activities

Furthermore, focus group discussions were audio-recorded and transcribed verbatim. Thematic analysis was used to evaluate information regarding the experiences of mainstreamed Agtas when participating in elections. The researchers utilized the most widely adopted approach for thematic analysis outlined by Braun and Clark (2006).

After initial coding and theme development, member checking was conducted. The researchers revisited the mainstreamed Agtas to present the generated themes and have the same respondents validate the findings, accompanied by NCIP representatives.

Ethical Considerations

The researchers sought necessary permissions from the University administration and research office, and the NCIP Region 2. Informed consent was obtained from all participants through a formal consent letter for individual signing, acknowledging their permission to invest their time, effort, and participation. Participants were oriented that the interview session would be audio-taped to maintain transparency. They were given the option to withdraw at any time without negative impact on their standing within their communities. Steps were taken to ensure confidentiality and anonymity, with responses kept confidential by the researchers only.

4. Results

A total of 48 mainstreamed Agta respondents participated in the quantitative phase of the study, with 24 respondents from Basao, Gattaran and 24 respondents from Agugaddan, Peñablanca. All respondents were registered voters and had resided in their respective communities for at least ten years. All survey participants were also recruited into the Focus Group Discussions, with three FGDs conducted per locale, each facilitated by at least one researcher for eight members of the community.

Quantitative Results

As summarized in Table 3, electoral participation among mainstreamed Agtas follows a distinct pattern: strong compliance with voting itself, moderate engagement in accessible pre-election activities, and sharp disengagement after election day.

In the pre-election phase, engagement is limited and uneven. Participation is concentrated in more accessible, community-oriented activities such as volunteering for candidates (moderate) and attending public forums (moderate). However, involvement in substantive deliberative processes, such as platform development, political discussions, and debates, remains low to very low. The very low attendance at

rallies points to structural and contextual barriers. Overall, pre-election participation exists but remains peripheral rather than influential.

Table 3. Level of Electoral Participation of Respondents during Election activities

Election Activities	Mean	Interpretation
Volunteered to support political candidates during election campaigns (ex: participated in door-to-door campaigning or joined volunteer groups).	3.06	Moderate
Participated in the crafting of platforms of candidates.	1.65	Low
Shared or distributed campaign materials (ex: flyers or posters).	2.04	Low
Participated in public forums of candidates.	2.96	Moderate
Watched election debates.	2.10	Low
Engaged in discussions about political candidates and campaign-related matters.	2.02	Low
Attended political rallies or campaign events organized by candidates.	1.33	Very Low
Participated in campaign-related events, such as fundraisers or community outreach programs.	1.98	Low
Pre-Election Activities Total	17.15	Low
Voted in the local elections (Barangay, Municipal, and Provincial level).	4.94	Very High
Voted in the national elections (President/Vice President/Senator/Member of the House of Representatives).	4.92	Very High
Ran as a candidate for a local government position (Barangay/Municipal/Provincial Government Position).	1	Very Low
Won in the local elections (Barangay/Municipal/Provincial Government Position).	1	Very Low
Served as a watcher at polling stations on election day.	1.69	Low
Participated in tasks such as directing voters, distributing materials, or helping with logistics on election day.	1.81	Low
Volunteered to participate in election monitoring activities to ensure fairness and transparency (ex: reported prohibited activities during elections).	2.23	Low
Election Day Activities Total	17.58	Low
Participated in local or national electoral gatherings organized by elected officials. (Press conference/Town hall meetings/other forms of Public Acknowledgement)	2.35	Low
Participated in tasks such as organizing, distributing materials, or helping with logistics during post-election related meetings.	1.52	Low
Participated in cleaning up campaign materials such as posters, banners, and flyers.	1.94	Low
Provided or expressed my opinions on election-related matters during meetings.	1.85	Low
Organized protests and advocacy campaigns to voice out our concerns about election-related matters.	1.35	Very Low
Gave and shared feedback, thoughts, or opinions about the outcome of elections on social media or public forums.	1.65	Low
Post-Election Activities Total	10.67	Very Low

During election day, participation is highly concentrated in voting itself, with very high turnout in both local and national elections, indicating strong compliance with the fundamental act of suffrage. However, participation sharply declines beyond voting. Involvement in more active or influential roles—running for office, serving as watchers, or election monitoring—remains low to very low. This suggests that while Agtas are present as voters, they are largely absent from the administrative and oversight

dimensions of the electoral process. The low total score reflects participation that is electorally compliant but institutionally limited.

In the post-election phase, engagement is notably minimal, indicating sharp disengagement once voting concludes. While limited involvement exists in attending gatherings organized by elected officials (2.35), most forms of engagement—logistical support, expressing opinions, clean-up efforts, and feedback on social media—remain low. Collective action such as protests is almost absent (1.35). This suggests respondents are largely excluded from or disinclined toward post-election processes that sustain accountability or civic dialogue. The very low total score reflects a pattern of participation that ends with voting, with little continuity into post-electoral civic engagement.

Qualitative Results

Focus Group Discussions revealed six major factors influencing the electoral participation of mainstreamed Agtas across the three phases of elections. During the pre-election phase, three themes emerged: collective decision-making, economic and familial constraints, and educational and literacy barriers. On election day, the identified themes were voting as the primary act of participation, dependence on informal support systems, and intersecting identities and barriers. In the post-election phase, the systemic absence of civic education emerged as the overriding factor influencing participation.

5. Discussion

5.1 Pre-election Phase

The quantitative findings revealed a low level of electoral participation among mainstreamed Agtas during the pre-election phase. This section discusses the factors that shape this low engagement, organized into three themes: collective decision-making, economic and familial constraints, and educational and literacy barriers.

Collective Decision-Making

Despite the overall low participation, Agtas engage in informal collective discussions before elections. They gather to deliberate on candidates' platforms and intentions for their community, prioritizing the election of candidates who will address their needs and concerns. This implies that mainstreamed Agtas prioritize community interests when making voting decisions. This is supported by Laforteza (2016), where the level of trust Indigenous Peoples place in politicians mirrors their confidence in these figures, shaping IP's political attitudes and behaviors. The heightened confidence in politicians is linked to a greater likelihood of IP casting their votes.

PGFGW1: “Just during elections, we are called together to gather and hear each other's voices.”

APFGM1: “Election period is just like any other normal day for us. We also discuss who we will vote for. When our chosen candidate wins, we celebrate.”

The findings reveal that mainstreamed Agtas prefer candidates who they think will solve the issues they face, voting for those who incorporate Indigenous issues into their platforms. This aligns with Aaberg et al. (2023), which examined Indigenous peoples' participation across Guatemala, Kenya, and Nepal, finding that voters are more inclined to participate when their peers and concerns are represented.

Within their communities, candidates actively campaign by visiting Agta communities, presenting projects, and distributing materials. The Agtas listen to candidates who visit and consider voting for those with platforms they believe will benefit them. While some Agtas are encouraged when candidates directly engage them, others prioritize candidates' intentions and track records. However, promise fulfillment plays a crucial role in determining future support:

APFGM1: The barangay officials come here to encourage us to vote in the election. We only listen to the candidates who come here. If we know that their platform is good, we vote for them. Sometimes, the winning candidates also come here to thank us.

APFGW2: If they do not fulfill their promises, I will not vote for them next time.

Their emphasis on candidate visits, platform relevance, and promise fulfillment reflects a pragmatic and community-oriented approach to voting, indicating that their limited engagement in formal campaign activities does not necessarily mean indifference toward electoral outcomes.

Economic and Familial Constraints

The economic struggles mainstreamed Agtas face—resource scarcity, family responsibilities, and low to no educational attainment—lead to a lack of interest in pre-election activities. Their focus on securing livelihoods takes precedence over political involvement, as they perceive this as essential for survival. This prioritization is driven by the urgent need to secure food and income through farming, selling vegetables, or other income-generating activities:

APFGW1: We prioritize our livelihood, sir, because through livelihood activities, we can get money to buy rice or food. Unlike running for office, no one even wants to vote for me, even if I am an Agta.

PGFGM1: When there is a campaign, our priority is to work to sustain ourselves.

A study by Ancheta et al. (2017) highlighted the resilient nature of Agtas, who prioritize daily survival and secure their livelihoods rather than remaining idle. Their focus on economic stability supersedes any inclination toward pre-election activities. As providers for their families, they prioritize meeting immediate needs.

Their familial obligations intersect with economic constraints, further restricting political involvement. The scheduling of events at night complicates participation, as they prioritize monitoring their children. Aaberg et al. (2023) reinforce these findings, noting how Indigenous people, especially women, are constrained by family duties, limiting political availability. The lower the economic well-being of indigenous peoples, the lower their probability of participating in mainstream politics (Laforteza, 2016).

Educational and Literacy Barriers

In addition to economic and familial constraints, mainstreamed Agtas with low to no educational attainment express reluctance to participate in rallies or campaigns due to their lack of knowledge about electoral procedures. They feel unprepared to engage in political activities such as campaigning or attending political rallies, leading to a sense of inadequacy and disempowerment:

APFGW1: Whenever there is election, for us, we do not participate in rallies and campaigns because we really do not know how or what to do.

APFGW1: Of course, sir, it crosses our minds that we are struggling because we did not finish our education. We do not know what to say if ever I decide to run.

Educational barriers diminish political efficacy and awareness. Limited access to quality education fosters alienation from the political process, perpetuating low participation. Agtas with little or no formal education hesitate to join rallies or campaigns because they lack knowledge of voting procedures. This is a common problem for indigenous peoples worldwide (Laforteza, 2016). Sanchez (2024) found that without good education, people lack the knowledge to make smart political choices. Education is key for informed discussions, better understanding of politics, and making better decisions.

5.2 Election Day Phase

The quantitative findings revealed that while the overall level of electoral participation during election day activities is low, voting itself is very highly prioritized in both local and national elections. Conversely, running for office and winning are both interpreted as "Very Low." This section discusses the factors shaping this pattern, organized into three themes: voting as the primary act of participation, dependence on informal support systems, and intersecting identities and barriers.

Voting as the Primary Act of Participation

The responses of the mainstreamed Agtas indicate that they do not prioritize running for elections, and they exhibit shyness when it comes to participating in campaign activities. Agtas also find it challenging to engage in the campaigning process. As a result, they prioritize voting over other election-

related activities due to the physical and emotional strain associated with campaigning, suggesting a strategic allocation of energy resources:

APFGW1: During campaigns in the villages, we haven't tried it yet because we are shy.

PGFGW1: We do not want to run in elections because it is difficult.

PGFGM2: Other election-related activities are tiring for us.

For many mainstreamed Agtas, economic survival remains the primary concern. Securing a stable livelihood and providing for their families precedes political involvement. The Agtas of Basao, Gattaran refrain from running for office due to shyness and perceived difficulties. The pressure to meet immediate economic needs often outweighs the perceived benefits of electoral politics.

Cultural norms within the Agta community also play a critical role. Shyness, or a culturally ingrained sense of humility and reticence, discourages many Agtas from seeking public office. This trait is reinforced by community expectations that value modesty and communal harmony over individual ambition. The reluctance to run for office is also rooted in lack of confidence in navigating mainstream political arenas.

Mainstreamed Agtas however demonstrated eagerness to engage as election watchers, motivated by financial incentives. This enthusiasm is notable among Agtas in Agugaddan, Penablanca. However, their eagerness is tempered by limited control over these opportunities, as decisions are made by political actors or hampered by limited slots:

APFGW1: We also want to participate. Like being poll watchers because there is a pay for that too. However, we do not have control over that, sir, because they are still the ones who decide whether they will take us or not.

In Basao, Gattaran, Agtas face additional challenges such as work disruptions and potential stress associated with the role of watchers, suggesting that financial incentives attract participation, but practical considerations also influence their ability to engage such as interruption of livelihood.

Community leadership can be attained not only through running for office but also by serving as poll workers, which can amplify the visibility of marginalized groups (Aaberg et al., 2023). However, even this remains to be limited for mainstreamed Agta communities.

Dependence on Informal Support Systems

Knowledgeable Agtas play a crucial role in facilitating electoral participation of illiterate community members by providing assistance during voting, including writing names on ballots or guiding individuals through procedures. This enables all community members to participate effectively

APFGM1: They allow knowledgeable Agta individuals to assist those who do not know how to write.

PGFGW1: When a voter cannot read, they are given a small piece of paper where they can write the names of their chosen candidates. During the voting time, the assistant will compare what is written on the paper to what is actually on the ballot. There are also assistants for those who cannot write or read.

The willingness of knowledgeable Agtas from both communities to assist individuals with limited literacy highlights their dedication to inclusive electoral participation. Duguid (2020) notes that indigenous groups unite in resistance against oppressive state measures, demonstrating solidarity and mutual support to enhance political participation.

Voting is seen as an effective way of bringing change, and Agtas are encouraged to vote because of benefits they receive from the government, including free transportation and snack services during elections. Government programs also play a significant role in encouraging participation:

PGFGW3: There is a service that comes here during elections to take us to the polling station. They even provide us with food when we do not have any packed lunch. Because of that, we are always motivated to vote in the elections.

APFGM1: We have a motorbike that serves as transportation to polling stations. I do not think that I should just work to help my family instead of participating in the election because we also receive benefits from these candidates.

According to Duguid (2020), voting can give marginalized people a sense of empowerment and activism. These incentives reduce practical barriers and foster civic duty among Agtas.

Intersecting Identities and Barriers

Despite these benefits, mainstreamed Agtas express concerns about literacy affecting their participation. Respondents highlight struggles due to limited reading and writing skills, with some relying on assistance. Resentment towards educational disparities, especially regarding access to higher education and scholarships, is also evident:

APFGW1: Sometimes, since my grandma does not know how to read or write, she struggles during elections, but luckily someone assists her.

APFGW1: During election, those who have education somewhat understand what to do, but for someone like me, I get nervous if there is something I do not understand. We ask questions and there are also people who help us when that happens.

PGFGW2: We cannot run [for elections] because we are not good at writing.

Illiteracy is a problem for populations living in geographically isolated areas with lack of access to basic social services and opportunities. As provided in Prasetyo et al. (2023), political education and accurate information about the electoral process need to be provided to indigenous peoples to help increase their political participation.

Although there is no explicit gender discrimination in electoral participation, the level of engagement remains low. There is a perceived societal preference for male candidates, as elections are seen as more favorable if the winner is male. Agtas of Basao, Gattaran specifically note more male candidates:

PGFGW1: There is no prohibition for us women to run in elections. Everyone can join. But there is also a saying that if a woman wins, the election is intense. But if a man wins, it is said to be better than if a woman does.

In numerous indigenous communities, women's involvement in political bodies is limited compared to earlier times (Roy, 2014). Agtas in Basao, Gattaran highlight the predominance of men in government positions. Interaction with external entities has largely been through men. Efforts by indigenous women to achieve political influence focus on gaining access to new forms of knowledge such as literacy, numeracy, and financial management (Amazon Indigenous Peoples, 2014).

Mainstreamed Agtas of Agugaddan, Penablanca express concerns about potential discrimination based on their identity, fearing their capabilities may be questioned due to ethnicity. Agtas in Basao, Gattaran feel marginalized, observing that only Ilocanos run for public office. This internalized discrimination deters participation:

APFGW1: Even if we would like to participate, like running in the election, but for us, Agta, maybe people would think, "What do they know about these things?"

APFGW1: We do not try to run here because we know within ourselves that we are Agta.

The same sentiment resonates with Agtas of Basao, Gattaran. Their lack of confidence to run is caused by continuous social exclusion and racism (Rights of Indigenous Peoples, 2024). Cultural factors, coupled with lack of confidence and limited access to education, contribute to their reluctance to engage in political campaigns (Duguid, 2020).

5.3 Post-election Phase

The quantitative findings revealed that the level of electoral participation during the post-election phase is "Very Low." Among post-election activities, "Participated in local or national electoral gatherings organized by elected officials" had the highest mean (interpreted as "Low"), while "Organized protests and advocacy campaigns to voice out concerns about election-related matters" had the lowest mean (interpreted as "Very Low"). This section discusses the primary factor shaping this low engagement: the systemic absence of civic education.

Systemic Absence of Civic Education

The very low participation in the post-election phase reflects broader issues related to civic education, community organization, and ongoing political interest among respondents. This underscores

not only the lack of voter education programs within the community but also the prevailing unfamiliarity among mainstreamed Agtas regarding post-election activities.

Mainstreamed Agtas highlight the absence of voter education programs and meetings aimed at disseminating information about elections. This lack of access to voter education further exacerbates their challenges in understanding electoral processes:

APFGW1: There are not any meetings where they provide information about the election so during voting, we still assist ourselves since there are some of us who have finished college.

This highlights a critical gap in their understanding of election activities, suggesting that their lack of knowledge about the electoral process largely contributes to their low electoral participation, particularly in post-election activities.

They also shared treating election day as "just a normal day," which reflects a deeper issue: without formal voter education, Agtas do not recognize post-election activities as part of their civic responsibility. They vote, then return to their daily routines of cooking, laundry, and securing livelihoods. There is no understanding of post-election gatherings, public forums, or advocacy campaigns as avenues for continued political participation. This systemic gap in civic education effectively ends the electoral engagement of mainstreamed Agtas on election day itself, leaving the post-election phase entirely untapped.

This narrative aligns with the findings of Aaberg et al. (2023): indigenous peoples often lack access to critical information about voting rights and the electoral process. One example cited is the case of Kenya, where the community did not understand their voting rights, including the right to a secret ballot and participation in elections organized by a sovereign state. Without reliable information sources, indigenous voters, especially indigenous women, risk disenfranchisement or manipulation by those in power. Voter education emerges as a critical remedy to ensure that all voters receive accurate information about elections.

6. Conclusion

This study demonstrates that electoral participation among mainstreamed Agta communities in Cagayan follows a narrow and diminishing trajectory. Voting on election day emerges as the sole form of meaningful engagement, while pre-election campaign activities remain minimal and post-election participation is virtually absent.

Economic survival takes precedence over political engagement, as Agtas prioritize livelihood activities over campaigns, rallies, or running for office. Parental responsibilities, particularly for women, further limit availability, especially when events occur at night. Literacy barriers diminish political efficacy, while internalized discrimination—exemplified by the fear that others would question "What do Agtas know?"—deters community members from seeking leadership positions. Compounding these issues, the complete absence of voter education programs means election day is treated as a normal day after voting, with no understanding of post-election gatherings or public forums as avenues for continued participation.

What this shows is that mainstreaming into majority culture does not automatically translate into meaningful political inclusion. Despite exercising their right to vote, the Agta remain disconnected from the full electoral process. Addressing this requires targeted interventions in civic education, literacy, economic opportunities, and leadership development—crucially, the institutionalization of Indigenous Peoples Mandatory Representatives (IPMRs) in local governance. Without these measures, their democratic citizenship remains confined to the single act of casting a ballot.

The findings must be interpreted within the study's limitations, including the small sample size and geographic confinement to two Agta communities in Cagayan. Future research should address these gaps through comparative studies across multiple indigenous groups or longitudinal designs tracking participation across election cycles.

References

- Aaberg, R., Gurung, P., Kandie, C., Valenzuela, L., Velásquez Xón, María, M., & Xón, V. (2023). Engaging Indigenous peoples in elections: Identifying international good practices through case studies in Guatemala, Kenya, and Nepal. IFES.
- Amazon Indigenous Peoples. (2014). New challenges for political participation and sustainable development. *Cultural Survival*. <https://www.culturalsurvival.org/publications/cultural-survival-quarterly/amazon-indigenous-peoples-new-challenges-political>
- Ancheta, J. V., Pelovello, J. V., Romero, C. R., Delos Santos, R. L., Gannaban, K. L. S., & Tindowen, D. J. C. (2017). The contemporary life of the Aetas of Sta. Ana, Cagayan, Philippines through participatory-photography approach. *International Journal of Human Social Development Research*, 1(2), 35-52.
- Aspiras, L. S., Guinuntad, M. L., Aspiras, E. D., & Escario, C. S. (2016). Listen to the cry from within: The plight of the Agta tribe at Nagtipunan, Quirino. *QSU Research Journal*, 5(1), 0.
- Balilla, V. S., et al. (2013). Indigenous Aeta Magbukún self-identity, sociopolitical structures, and self-determination at the local level in the Philippines. *Hindawi Publishing Corporation Journal of Anthropology*, 1-6. <https://doi.org/10.1155/2013/391878>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- CHR (Commission on Human Rights). (2022). Sectoral monitoring on the situation of Indigenous women and girls during the COVID-19 pandemic. Commission on Human Rights Gender Equality and Women's Rights Center.
- Corntassel, J., & Primeau, T. H. (2021). Indigenous "sovereignty" and international law: Revised strategies for pursuing "self-determination." *HeinOnline*. <https://www.jstor.org/stable/762521>
- De Guzman, S. (2016, April 24). Upholding the rights of Indigenous Peoples. *The Philippine Star*. <https://www.philstar.com/opinion/2016/04/24/1576558/upholding-rights-indigenous-peoples>
- Dioso, M. (2019). Political awareness and participation of Public Administration students of Occidental Mindoro State College. *SSRN Electronic Journal*. <http://dx.doi.org/10.2139/ssrn.3702100>
- Duguid, D. (2020). How political engagement helps Indigenous communities in their fight for rights. *Political Science*, 34. https://scholarsarchive.library.albany.edu/honorscollege_pos/34
- Imbong, J.D., & Espinosa, J.R. (2018). P/ Filipinolohiya: An Analysis On the Leader Selection and Its Implications On The Right Of Suffrage of Agta Tribe in Alabat, Quezon Province.
- Laforteza, H. J. (2016). The Indigenous vote: Access to education and political participation of the Philippine Indigenous community. *Academia.edu*. https://www.academia.edu/21590883/The_Indigenous_Vote_Access_to_education_and_Political_Participation_of_the_Philippine_Indigenous_community
- Laforteza, H. J., & Paranaque, E. (2015). Political apartheid: Marginalization and political participation of the Philippine Indigenous community in mainstream Philippine politics. *Academia.edu*. https://www.academia.edu/19559236/Political_Apartheid_Marginalization_and_Political_participation_of_the_Philippine_Indigenous_Community_in_mainstream_Philippine_Politics
- McHenry, M., et al. (2013). The Indigenous Aetas of Bataan, Philippines: Extraordinary genetic origins, modern history and land rights. *Singapore Journal of Tropical Geography*. <https://doi.org/10.1111/sjtg.12038>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
- Pasimio, J., et al. (2022). Sectoral monitoring on the situation of Indigenous women and girls during the COVID-19 pandemic LILAK (Purple Action for Indigenous Women's Rights) and Commission on Human Rights Gender Equality and Women's Rights Center.
- Philippine Commission on Women. (2019). *Enacting a Women's Political Participation and Representation Law*.
- Prasetyo, D., et al. (2023). Political education for Indigenous peoples. *Journal of Indonesian Legal Studies*.

- Rights of Indigenous Peoples. (2024). IFES - The International Foundation for Electoral Systems. <https://www.ifes.org/our-expertise/inclusion-human-rights/rights-indigenous-peoples>
- Roy, C. (2014). Indigenous women: A gender perspective. Aboriginal Policy Research Consortium International. <https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1250&context=aprci>
- Sanchez, E. (2024, March 4). Lack of access to quality education for rural Indigenous communities in Chiapas, Mexico. Ballard Brief. <https://ballardbrief.byu.edu/issue-briefs/lack-of-access-to-quality-education-for-rural-indigenous-communities-in-chiapas-mxico>
- Siddique, N. A. (2018). Electoral participation of Indigenous people in Bangladesh: A case study on the Garo community. Government and Politics Journal. https://www.govpoliju.com/upload/research_file/asian-studies-2018.pdf#page=47
- Tindowen, D. J. C. (2016). The economic life of the Aetas of Northern Philippines. Khazar Journal of Humanities and Social Sciences, 19(4), 97-109. <http://dspace.khazar.org/bitstream/20.500.12323/3470/1/Darin%20Jan.pdf>
- Waddington, R. (2002, revised edition 2023), The Indigenous Aeta People. The Peoples of the World Foundation. Retrieved December 20, 2023, from <https://www.peoplesoftheworld.org/aetas/>

A Culturally Grounded Framework of Mental Well-being in an Indigenous Community in Cagayan, Philippines

Patrick Dayag*, Stephanie Louj Paa, Benedict Zulueta

University of Saint Louis Tuguegarao

*Email : 2000197@usl.edu.ph

Abstract

Indigenous Peoples (IPs) experience disproportionately high rates of mental health problems, yet prevailing mental health frameworks remain largely Western-centric and clinically oriented. This phenomenological study explored how an Agta community in Cagayan, Philippines, conceptualizes mental well-being within its socio-cultural context. Nine Agta informants participated in semi-structured interviews guided by Filipino Indigenous research methods, and the data were analyzed using the Modified Stevick-Colaizzi-Keen phenomenological method. The findings revealed four interrelated dimensions of mental well-being: (1) Panagpampanunot (way of thinking), reflecting positive thinking and cognitive regulation; (2) Kondisyon ti Bagi (sense of ease), referring to freedom from persistent worries and embodied discomfort; (3) Urnos ti Komunidad (sense of community), emphasizing social harmony, generosity, and mutual support; and (4) Koneksiyon kenni Apo (spiritual connection), highlighting faith and prayer as sources of peace, meaning, and resilience. Together, these dimensions constitute an integrated framework in which mental well-being is understood not as an individual psychological state but as a relational phenomenon emerging from the interaction of cognitive, embodied, communal, and spiritual domains. The findings complement dominant psychological models by offering a culturally grounded understanding of mental well-being rooted in Indigenous lived experiences. As a qualitative investigation of a single Agta community, the findings are intended to provide contextual insight rather than broad generalization. The study offers implications for culturally responsive mental health research, practice, and policy, while extending the application of Sikolohiyang Pilipino within Indigenous mental health research.

Keywords: Agta; Indigenous mental health; cultural framework; Filipino psychology

1. Introduction

Mental health is interconnected with various aspects of life; it is a primary determinant of productivity and purpose. The World Health Organization defines mental health as a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn and work well, and contribute to their community. The interpretation and manifestation of mental health differ based on race and ethnic group, emphasizing the importance of recognizing its varied experiences, expressions, and approaches across different cultures. However, the majority of what is currently known about mental health is derived from Westernized approaches to mental health research. This raises the question of whether the same concepts of mental health, coping strategies, and mental healthcare programs are applicable to ethnic and minority groups whose knowledge and way of life deviate from Western ideologies and mainstream populations. Mental health is more than the absence of mental disorders; it exists on a complex continuum experienced differently across individuals and communities, with varying degrees of difficulty and distress that produce potentially very different social and clinical outcomes (WHO, 2022).

One community that deserves equal attention but is oftentimes overlooked in the discourse of mental health is Indigenous Peoples (IPs). Despite the existence of Republic Act 8371, which safeguards and promotes their cultural rights, Indigenous communities continue to face issues of violence and brutality, continuing assimilation policies, marginalization, dispossession of land, forced removal or relocation, denial of land rights, impacts of large-scale development, abuses, and other forms of injustices on a day-to-day basis. Moreover, they are among the poorest and continue to suffer from higher poverty, lack of education, and a greater incidence of disease than other groups. These stressors, to which IPs have

been and continue to be exposed, result in relatively high rates of mental disorders and behavioral problems such as depression and anxiety, suicide, and substance abuse (Cianconi et al., 2019).

Mental health issues such as depression, substance abuse, and suicide have been identified as connected to the historical colonization and dispossession of IPs, which has resulted in the fragmentation of Indigenous social, cultural, economic, and political institutions. These problems cannot be separated from the social, cultural, and historical contexts in which they occur. These common issues, combined with numerous unfavorable social determinants, result in high psychosocial vulnerability of IPs, particularly the youth (Pan American Health Organization, 2023). An international study reports that IPs experience a higher rate of mental health issues than non-Indigenous people (Graham, 2021; Hodgson et al., 2022; Kisely et al., 2017; Kumar & Tjepkema, 2019). They experience mental illnesses twice as likely as non-IPs (Childs, 2021), yet relatively little data exist concerning their mental health status. Despite their valuable contributions to the preservation of agricultural biodiversity and in spite of laws enacted to recognize and promote their rights, the services available to improve their quality of life are exceedingly scarce. Hunter (2020) reveals a system that does not provide IPs with sufficient, safe access to primary and preventive care. Given their minority status, IPs face the least prioritization in terms of accessing services that specifically look into their emotional, psychological, and social well-being (Brown et al., 2016).

Access to various mental health services and programs remains challenging for IPs due to certain constraints (Goetz et al., 2022). In the Philippines, Celis et al. (2023) reveal that IPs, specifically Agta communities, are in hopes of being provided with mental health services. They are less likely than the majority population to receive professional help for mental health. This presents another challenge, since there is little research exploring the alternative coping strategies IPs use to address the distinct challenges they encounter. The majority of mental health research has centered on mainstream populations, perpetuating a one-size-fits-all approach to mental health care (Brown et al., 2020; Hechanova, 2019; Lally et al., 2019). These studies failed to recognize the socio-historical and cultural background of ethnic minorities, thus springing a culturally inappropriate, insufficient, and irrelevant understanding of their mental health.

One of the prominent Indigenous groups in the Philippines is the Agta, believed to be among the country's earliest inhabitants (Larena et al., 2021). In the northeasternmost point of Luzon, a specific Agta community resides near a coast leading to Nangaramoan Beach in Barangay San Vicente, Sta. Ana, Cagayan. This community was forcibly relocated due to a coastal development project, displacing them from ancestral lands they had occupied for more than four decades. Beyond the loss of residence, relocation disrupted livelihoods, community life, and cultural practices closely tied to the land (Bolinao & de Guzman, 2017).

The forced relocation of this Agta community reflects a broader pattern affecting Indigenous populations in the Philippines, where development projects have resulted in displacement, disruption of livelihoods, and threats to cultural continuity (Exploring the Lived Experiences of the Dumagat-Remontado Tribe, 2024; Yambao et al., 2022; Hagen & Minter, 2020). These broader realities provide important context for understanding the present community. As documented by Bolinao and de Guzman (2017), the relocation of the Agta community in Nangaramoan disrupted traditional fishing and foraging activities, altered community dynamics, and created economic precarity. It is within this socio-political context that the present study examines how this specific Agta community conceptualizes mental well-being.

Despite the documented effects of displacement and other socio-political stressors on Indigenous communities, little is known about how this specific Agta community itself understands and defines mental well-being. Existing dominant mental health frameworks, largely derived from Western psychological traditions, provide limited insight into culturally embedded conceptions of well-being grounded in Indigenous lived experiences. Consequently, culturally responsive mental health policies and interventions risk overlooking the values, relationships, and meanings that shape well-being within this community.

Thus, this study seeks to explore how this specific Agta community conceptualizes and experiences mental well-being within its socio-cultural context and history of forced relocation, with the goal of developing a culturally grounded framework rooted in the community's lived experiences.

2. Objectives

This study aimed to explore how an indigenous Agta community experiences, expresses, and understands mental health within their socio-cultural context, with the goal of developing a culturally grounded mental health framework rooted in Indigenous lived experiences.

3. Materials and methods

3.1 Research Design

A psychological-phenomenological research design, as outlined by Moustakas (1994), was employed to explore the Agta community's lived experiences, expressions, and understandings of mental health. Phenomenology was used because it prioritizes subjective meanings and lived experiences, allowing the researchers to understand how informants make sense of mental health from their own cultural standpoint.

3.2 Locale of the Study

This research was carried out in Barangay San Vicente, Sta. Ana, Cagayan, where one of the Agta communities in Cagayan resides. Barangay San Vicente accommodates 25 Agta families living along the coast and in the mountains. This community was relocated after occupying the site for more than 4 decades. The distinct setting and resettlement context offered a broader range of perspectives to explore, given the varying means of living and challenges experienced in the location.

3.3 Informants of the Study

Nine members of the Agta community residing in Barangay San Vicente, Sta. Ana, Cagayan, participated in the study. Purposive sampling was used based on the following criteria (1) belonging to the Agta community; (2) being at least 18 years old during data collection; and (3) being recognized as possessing substantial knowledge about their culture and traditions. The informants consisted of five males and four females, aged 20 to 56, representing diverse characteristics, including married individuals, community leaders, and housewives. Table 1 presents the demographic and contextual profiles of the nine informants.

Table 1
Participant Profiles

Pseudonym	Profile Description
Malakas	Male, married with children. Community elder/counselor. Lost his mother and sister at age 20, forcing him to quit school. Primary stressors: forced relocation, fear of nighttime harassment. Copes through faith, prayer, and communal gatherings.
Makisig	Male, pastor and tribal leader. Widower; lost his wife a week after his son's birth, causing a mental breakdown. Primary stressors: community disunity, threats to his pastoral role, discrimination. Copes through tribal unity, rapid reconciliation, and spiritual guidance.
Dumakulem	Male, pastor. Orphaned at age three and adopted; survived a severe illness at 24. Primary stressors: forced relocation, stigma of being labeled a "heavy drinker." Copes through prayer, spiritual songs, and entrusting all problems to God.

Pseudonym	Profile Description
Halimuyak	Female, married with multiple children. Born and raised on ancestral land for generations. Primary stressors: forced relocation, husband's drinking, discrimination (pugut). Copes through prayer, escaping to the beach to cry, and staying vigilant at night.
Bagwis	Male, community member. Faced many difficulties since youth. Primary stressors: lack of tribal unity to fight for land rights. Copes by facing problems alone (ashamed to ask for help) and encouraging church attendance among fellow tribesmen.
Amihan	Female, married with school-aged children. Primary stressors: livelihood struggles, children unable to attend school due to lack of supplies. Copes through prayer, socializing with neighbors, and gathering shells for income.
Mayari	Female, married with children. Primary stressors: nightly chaos from drunkards, fear of violence, husband's drinking. Copes by hiding in the mountains, cleaning and tidying up, spending time with friends, and praying.
Mulawin	Male, has a son and cares for his aging father. Lost his mother and sibling. Primary stressors: inability to work, chest pain when he cannot provide. Copes by staying inside his home and avoiding burdening others.
Adarna	Female, married with many children (some younger and mischievous). Primary stressors: forced relocation, powerful people forcing them to leave, grief from mother's death. Copes through drawing strength from her children and enjoying family time at the sea.

3.4 Research Instrument

A semi-structured interview guide was constructed based on the WHO (2022) definition of mental health. Three subject matter experts (licensed psychology professionals and a research methodology scholar) validated the instrument to ensure it accurately captured data aligned with the study's objectives.

3.5 Data Gathering Procedure

Approval from the National Commission on Indigenous Peoples (NCIP) was secured prior to data collection. Preliminary site visits established initial contact, familiarized the researchers with the local context, and informed instrument development.

All interviews and consent procedures were conducted in Ilocano, the lingua franca of Northern Cagayan and the language commonly used by the Agta when communicating with non-Agta speakers. Although the Agta possess their own indigenous language, participants were fluent and comfortable expressing their experiences in Ilocano and voluntarily elected to converse in this language throughout the interviews, enabling direct communication without an interpreter.

The fieldwork was undertaken over six non-consecutive days, with intervals between visits allowing for reflection and preliminary analysis. On the first day, a site visit was conducted to observe the physical environment, meet community members, and gain a preliminary understanding of daily life and social dynamics. Insights gained during this visit informed the refinement of the semi-structured interview guide prior to expert validation. Days two and three were dedicated to immersion and initial rapport building through *pakikipagkwentuhan* (storytelling) and *nakikiugaling pagmamasid* (participatory observation), though the brief immersion period limited the researchers' ability to fully employ the latter. Days four and five constituted the formal data gathering phase, during which semi-structured interviews were conducted using the validated guide. Each informant was interviewed twice, with sessions lasting up to 1.5 hours; the first deepened rapport while exploring participants' life experiences and worldview, and the second explored their perceptions of mental health. On the sixth day, member checking was conducted

by returning to the community to present transcripts and preliminary findings for verification and validation; participants confirmed the accuracy of the interpretations and ratified the emerging themes.

Throughout the data gathering process, Filipino Indigenous research methods were employed, guided by the principle that research approaches should adapt to the people rather than requiring informants to adjust to the method (Pe-Pua & Marcelino, 2000). *Pakikiramdam* (shared inner perception) guided the research process (Mataragnon, 1987), *pakikipagpalagayang-loob* (being in rapport) facilitated the establishment of initial trust (Enriquez, 1978, as cited in Pe-Pua & Marcelino, 2000), and *pagtatanong-tanong* (asking questions) was utilized to examine the rationale behind participants' living conditions and everyday experiences (Pe-Pua, 1989). Given the six-day engagement, Indigenous research approaches were employed primarily to facilitate rapport-building, contextual understanding, and phenomenological inquiry rather than prolonged community immersion – a limitation that should be taken into account when interpreting the findings.

3.6 Data Analysis

Data were analyzed using the Modified Stevick-Colaizzi-Keen method of phenomenological analysis (Moustakas, 1994; Creswell, 2013). Prior to interviews, the researchers practiced *Epoche* - setting aside personal biases and preconceptions through repeated reflection. Data analysis involved: (1) horizontalization – listing all relevant statements as equally valuable; (2) coding using *in vivo* codes where possible; (3) clustering codes into themes; (4) developing textural descriptions (what was experienced); (5) developing structural descriptions (context in which experiences occurred); and (6) articulating the essence of the phenomenon. Member checking was conducted to verify the findings with informants and other community members, who ratified the interpretation of the results.

3.7 Ethical Considerations

The study underwent ethical review for NCIP endorsement in compliance with Philippine Health Research Ethics Board Memoranda Nos. 2017-001 and 2017-002. Cultural protocols were strictly observed. All communications and consent materials were provided in Ilocano. Pseudonyms were used to ensure anonymity. Informants were informed of their right to withdraw at any time and of the availability of a professional debriefer should they experience emotional distress. The researchers acknowledged their positionality as outsiders to the Indigenous community and practiced reflexivity throughout the research process to mitigate potential biases.

4. Results

The phenomenological analysis of the Agta informants' narratives yielded four interconnected dimensions of mental well-being that formed the basis of the emerging culturally grounded framework. Through horizontalization, *in vivo* coding, and thematic clustering, the following emergent themes were identified: (1) *Panagpampanunot* (Way of Thinking/Cognitive Wellbeing), (2) *Kondisyon ti Bagi* (Sense of Ease/Physical-Emotional Wellbeing), (3) *Urnos ti Komunidad* (Sense of Community/Social Wellbeing), and (4) *Koneksiyon kenni Apo* (Spiritual Connection). Member checking was subsequently conducted, and community members ratified these interpretations, affirming their alignment with lived experiences. Quotes are attributed to informants using pseudonyms.

4.1. Theme 1: *Panagpampanunot* (Way of Thinking/Cognitive Wellbeing)

Panagpampanunot refers to the cognitive processes and mental clarity informants identified as central to psychological state. Informants described mental distress as a disruption of cognitive functioning characterized by loss of clarity, willpower, and the ability to think. Malakas articulated this loss: "*Mapukaw jay ganasku nga agtrabaho... Napukaw jay panunot kun*" (I am losing my will to work... My mind was lost). Halimuyak described relentless cognitive turmoil: "*Nanipud idi nangrugi da nga nagalad-alad ditan, awan pulos ti turog kon*" (Since the threats started, I haven't had any sleep). For Makisig, distress manifested as a complete mental blockade: "*Han ko mapanunot ti agtrabaho*" (I can't

think of working). Adarna captured collective cognitive chaos: *"Nagulu... magulo kami ta kasla maawanan kami ti sungsubat"* (It's chaotic... we don't know how to respond).

Despite these disruptions, informants demonstrated deliberate cognitive strategies. Dumakulem practiced compartmentalization: *"Iliwliwag ko lang, tapno maawan jay problema"* (I just set them aside). Malakas advised against rumination: *"Nu adda problema, dapat han mo nga ipadibdib, han mo unay panunuten ta ad-adda nga kumaru"* (Don't brood; don't overthink because it gets worse), advocating instead: *"Ti panunuten, mayat latta ti aldaw mo"* (Think that your day is good). Dumakulem emphasized humor: *"I-relax mo lang, i-katkatawam"* (Just relax, make light of it).

Informants could also read others' cognitive and emotional states. Makisig noted that a mentally healthy person is recognized through social engagement: *"Naragsak ti maysa nga tao nu madlaw mo nga nakaisem, makipul-pulapol"* (You can tell someone is happy if they smile and socialize). He described hidden distress as restlessness: *"Han nga makatiis, han makatalna, han makawalay-walay"* (Can't endure, can't be still, can't relax). Dumakulem added that generosity signals well-being: *"Naisem, naayat... Regalwan naka ti pinansyal, wennu sangkabassit nga bagus"* (Smiling, warm... sharing essentials like rice).

4.2 Theme 2: Kondisyon ti Bagi (Sense of Ease/Physical-Emotional Wellbeing)

Kondisyon ti Bagi captures the integrated physical and emotional experience of mental health. For the Agta, psychological distress is not abstract but embodied – felt in the chest, heart, stomach, and bones. Conversely, well-being is physical ease, good health, and the capacity to function in everyday life.

Informants expressed emotional suffering through bodily symptoms. Mulawin described: *"Kasla agsakit ti barukong ko... kasla pinagkupit ti barukong ku"* (Pain in my chest... heart being squeezed). Mayari used an identical metaphor regarding her husband's drinking: *"Uray daytuy kabbalay ko nu aginum, kasla agkuppit ti barukong ko"* (When he drinks, my heart is squeezed). Dumakulem recalled physical collapse: *"Parang kalansay na noon yung katawan ko"* (My body was like a skeleton). Sleeplessness was pervasive; Halimuyak stated: *"Awan pulos ti turog kon"* (No sleep), while Mayari lamented: *"Kanayun nak mapuypuyat"* (Always sleep-deprived).

Drinking (*agbarbartek*) emerged as a somatic-behavioral response. Malakas admitted: *"Nagbarbartekak tapno pagikkat jay problemak... Nu mausawanak, malagip ko manen"* (I drink to forget... but when sober, I remember). Halimuyak mirrored this: *"Ay ket ibartekak met ah. Uminomak met nu nasakit ti nakem ko"* (I also get drunk because it hurts).

Participants linked livelihood disruption to displacement through embodied distress. Halimuyak explained: *"Nu ayat mu lang nga makakaan ti mamintallu ti maysa aldaw, trabahum ti panpanunuten... Masapol nga agsakripisyo, tapno haan da nga agsakit, haan da nga mabisinan"* (If you want your family to eat three times a day, work is what you think about). Inability to work was equated with poor health. Makisig: *"Na-stress kun, dik ammon ti agrabaho"* (So stressed, I didn't know how to work). Mulawin: *"Nu han nak nga makatrabaho, kasla agsakit ti barukong ko"* (If I don't work, my chest hurts). Amihan identified concrete deprivation: *"Ti parikut mi lang, ti pagsapulan mi, dagituy ubbing mi nga haan makaadal"* (Our problem is livelihood and children not studying).

Well-being was described as physical ease, good health, and the capacity to function. Dumakulem: *"Naimbag ti aldaw ko nu nasalun-at'ak... Nu mayat ti salun-at ko, naragsak ti riknak"* (My day is good when healthy). Halimuyak: *"Nasalun-at ti panunut ku nu awan problema... Nu nakariing ka ti bigaten, kasla jay awan ti problemam"* (Mind is healthy without problems... waking up, problems seem gone).

4.3. Theme 3: Urnos ti Komunidad (Sense of Community/Social Wellbeing)

Urnos ti Komunidad captures the relational nature of Agta mental health. Individual well-being is inseparable from community harmony. The community functioned as both a source of distress and a site of healing.

Community disunity was a significant source of anguish. Makisig diagnosed: *"Ti narigat ti community tatta, awan pinagka-union"* (The challenge is lack of unity). Dumakulem lamented: *"Nu agiinom da, agaapa dan. Naapektuhan yung komunidad dahil kaming hindi umiinom, parang*

nadadamay" (When they drink, they fight; the community is affected). Mayari described nightly turmoil: *"Rinabii nga ag ikkis da, aglalaban da... Nu mabartek da, mamalbalay da"* (Every night they shout, fight... invade homes). Malakas recounted isolation: *"Pinadas ko ti immasideg ti kakadwak ngem binaybay-an dak. Nasaktan nak, ta syempre maymaysak"* (I asked for help, but they turned me away. I was hurt and alone).

Conversely, community is the primary source of healing. Malakas: *"Awan ti sabali nga maaramid mi nu di ketdi agtitipon kami. Agpapatang kami, agbibinnaga kami"* (Nothing else but gather, discuss, tell each other). Makisig: *"Sangwen mi kas a tribu daytuy nga banag. Kung hindi namin haharapin, hindi maaayos to"* (We must face it as a tribe). Bagwis: *"Dapat ket agkaykaysa kami nga sumango ti problema; agkaykaysa kami tapno napigpigsa kami nga mangilaban"* (Unified to face problems; together we are stronger).

References to land emerged primarily in discussions of displacement. Malakas described the land as *"Tawid mi daytuy daga"* (This land is our inheritance), while Halimuyak referred to it as *"Dituy ti nagdakkelan mi"* (This is where we grew up).

The *walis* (broom) metaphor captures communal well-being. Makisig explained: *"Pagbaseran tay jay walis; kapag tatlo lang yun, han nga makasagad ti dumi. Kaya ang ginagawa, kung wala yung isa, masakit yung kalooban namin. Di pwedeng sabihing iba ka, iba dito, o bahala ka na dyan"* (Think of a broom; if just three sticks, it can't sweep well. If one is absent, we get hurt. We can't separate or leave anyone). Harmony requires rapid reconciliation: *"Nu adda nakaapak tapos 30 minuto ti napalabasen, pupuntahan ko na sya para humingi ng dispensa. Hindi kami pwedeng mag away, kasi iisa kami"* (If misunderstanding, 30 minutes later I ask forgiveness. We can't stay mad because we are one).

The *balalallag* dance strengthens social bonds. Malakas: *"Nagkakaisa kami sa pagsasayaw ng balalallag... Mayat ti rikna mi nu maaramid mi dagituy"* (We unite in the dance... it feels good). Makisig: *"Nakakatulog ito pag na-stress kami, kasi tumatawa kami"* (This helps when stressed because we laugh).

4.4. Theme 4: *Koneksiyon kenni Apo* (Spiritual Connection)

Koneksiyon kenni Apo captures the relationship with the divine as the ultimate source of strength, guidance, and healing. Faith is not peripheral but a central pillar sustaining hope and refuge.

God is a personal refuge. Makisig: *"Ni apo ti kamang ko... nu adda ti problemak, ni apo latta"* (God is my refuge... when I have problems, God alone). Dumakulem: *"Agyaman nak la unay ti namwarsa ta adda isuna nga nangtulong kanyak. Nagpayapay, hannak binaybay-an ti diyos"* (Immensely grateful for God's strength; He never left my side). Faith guides anger: *"Nu permi nga bumara ka kasla kayat mo ti pumatay, nu tawagam la ni apo, kasla mabawasan jay pungtot mo"* (When overwhelmed to kill, calling God calms anger). Makisig sensed divine guidance: *"Kasla adda mangkonkontrol kanyak"* (Feels like a force guiding me).

Prayer was the most essential coping strategy. Halimuyak: *"Agkararag nak laeng ti napasnek. Haan tayu pulos maum-uma uray nu awan ti basul tayu"* (I am diligently praying; let us not tire of praying). She described prayer's physical sensation: *"Nu i-concentrate tam ti agkararag, nu ni apu diyos laeng ti puntirya ti panunut tayo, kasla marikna tayo ti nalamiis nga agpauneg kenka"* (Concentrating on prayer feels like something cold inside). Dumakulem prayed amid relocation threats: *"Humihingi na lang ako ng tulong sa panginoon... Ang hiling ko lang sa kaniya, sana 'wag niya kaming pabaya"* (I just ask the Lord... my only request is He doesn't abandon us).

The church is both spiritual and social hub. Dumakulem: *"Aktibo kami kapag may mga gathering... Di kami pwedeng mawala doon"* (Active when gathering... cannot be absent). Amihan: *"Kanayun nak nga makigimung kada Dominggo tapnu naragsak nak"* (Regularly attend church every Sunday to be happy). Pastors counsel; Makisig: *"Naka move-on ako sa pagkawala ng asawa ko sa tulong ng isang pastor na pumupunta sa akin tuwing hapon"* (Moved on from wife's loss with a pastor who visited). Spiritual songs provide release; Dumakulem: *"Kapag may problema akong kinakaharap, umaawit po ako ng spiritual song. Kung kantahin mo yung spirit song, parang gumagaan yung loob mo"* (When facing problems, I sing; singing lifts the burden).

Faith sustained informants amid displacement. Makisig: "*Han natay nga baybayan ti apu, nu laketdi mamati tayo*" (He will not abandon us if we believe). Dumakulem reflected: "*Naimbag la unay ni apo ta sinimpa na ti biyag ko ti unos ti walo nga tawen*" (Deeply thankful to God for bringing order after eight years of hardship).

Collectively, the four themes demonstrate that mental well-being among the Agta is an interconnected phenomenon encompassing cognitive, embodied, communal, and spiritual life. These dimensions interact to shape how participants recognize distress, cope, and maintain well-being.

5. Discussion

This study demonstrates that the Agta possess a culturally embedded understanding of mental health distinct from dominant Western biomedical frameworks. Rather than defining mental health as the absence of disorder, the Agta conceptualize well-being holistically through four interrelated dimensions – *Panagpampanunot* (cognitive), *Kondisyon ti Bagi* (embodied), *Urnos ti Komunidad* (communal), and *Koneksiyon kenni Apo* (spiritual) – which constitute an integrated system (WHO, 2022; Cianconi et al., 2019).

At the heart of this framework is a relational conception of mental health aligned with the Sikolohiyang Pilipino principle of *kapwa* (shared identity). Unlike Western models privileging autonomous individuals, the Agta framework locates well-being within social relationships. Emotional regulation serves not personal benefit but collective protection – a logic prioritizing communal harmony over individual catharsis (Lally et al., 2019; Goetz et al., 2022). The *walis* metaphor captures this: a broom's strength depends on bundling its sticks; Agta well-being depends on integrating cognitive, embodied, communal, and spiritual dimensions – a principle challenging Western compartmentalization of mental health (Brown et al., 2020; Hechanova, 2019).

This communal orientation raises questions about long-term psychological costs of suppressing negative emotions (Childs, 2021; Hunter, 2020). Narratives of Malakas and Dumakulem reveal a cultural mandate: one must not express negative mood, as stress ripples through the community. From a clinical standpoint, this indicates emotional suppression and socially enforced positivity – practices that may induce long-term distress (Hodgson et al., 2022; Kisely et al., 2017). The prohibition of distress expression may impose psychological burden even as it preserves social harmony. This dual nature warrants investigation, recognizing that cultural practices can simultaneously serve protective and potentially harmful functions (Graham, 2021; Kumar & Tjepkema, 2019).

The embodied dimension illustrates the Agta's rejection of Western mind-body dualism. Psychological distress is not abstract but embodied – felt in chest, heart, stomach, bones – while well-being is physical ease and capacity to function. This challenges frameworks that separate mental and physical health, often privileging psychological over somatic (Lally et al., 2019; Hechanova, 2019). The Agta framework does not privilege one over the other; well-being is simultaneously physical and emotional (Brown et al., 2016; Celis et al., 2023).

Mayari's testimony – linking happiness to absence of drunkenness and avoiding hiding in mountains – reveals a dimension Western models often overlook: structural conditions of safety and security (Yambao et al., 2022; Hunter, 2020). Alcoholism and domestic violence emerge as threats undermining *urnos ti komunidad*. This suggests Indigenous mental health frameworks must incorporate domestic safety and substance abuse as core determinants – challenging Western individualization of these issues (Childs, 2021; Cianconi et al., 2019). Culturally appropriate interventions must address systemic issues alongside individual support (Goetz et al., 2022; Brown et al., 2020).

Spirituality emerged as a foundational, rather than peripheral, dimension of mental well-being. Prayer, church attendance, and relationship with *Apo* are not "coping strategies" but integral to peace, meaning, and resilience (Pan American Health Organization, 2023; Larena et al., 2021). Western frameworks treat spirituality as a resource secondary to clinical interventions (Hechanova, 2019; Lally et al., 2019). For the Agta, spiritual connection is a structuring force shaping everyday experiences – challenging Western relegation of spirituality to margins (WHO, 2022; Graham, 2021).

Land did not emerge as a distinct dimension. Rather, narratives concerning land and forced relocation appeared embedded within accounts of disrupted livelihoods, community cohesion, physical security, and spiritual reliance – suggesting psychological consequences of displacement were experienced through everyday life rather than articulated as a separate conceptual domain (Bolinao & de Guzman, 2017; Yambao et al., 2022). The relocation disrupted traditional fishing, community dynamics, and economic precarity. Immediate survival stressors may have taken precedence over articulated concerns about land (Hagen & Minter, 2020; Drbohlav & Hejkrlik, 2017).

The findings offer several practical implications for mental health service delivery. Mental health programs may be strengthened by partnering with local churches and Indigenous spiritual leaders, who already function as trusted sources of guidance within the community. Community-based healing circles and storytelling sessions should be prioritized over individual clinical counseling, as these align with existing communal values and social networks (Celis et al., 2023; Goetz et al., 2022). Elders and community leaders should be trained in basic psychological first aid and trauma-informed communication, enabling them to recognize signs of distress within the communal framework (Brown et al., 2016; Childs, 2021). Mental health interventions must also address structural determinants such as domestic safety, substance abuse, and livelihood insecurity, recognizing that these conditions directly shape psychological well-being (Yambao et al., 2022; Hunter, 2020).

Several limitations should be acknowledged. The single-community focus limits transferability; reliance on self-report introduces potential recall and social desirability biases; and the presence of researchers and translation may have shaped articulation of experiences (Bolinao & de Guzman, 2017; Hagen & Minter, 2020). Despite these limitations, the study offers an empirically grounded framework that demonstrates how phenomenological inquiry can generate culturally grounded understandings of mental well-being while positioning Indigenous lived experiences as legitimate sources of psychological knowledge.

6. Conclusion and Recommendations

This study demonstrates that dominant Western biomedical frameworks provide only a partial understanding of mental well-being among the Agta of Cagayan. Rather than viewing mental health as the absence of disorder, the Agta conceptualize well-being as a holistic and relational condition grounded in everyday life, articulated through four interdependent dimensions – *Panagpampanunot* (way of thinking), *kondisyon ti bagi* (sense of ease), *urnos ti komunidad* (sense of community), and *koneksiyon kenni Apo* (spiritual connection). Mental well-being is not an individual state but an emergent condition shaped through the continuous interaction of cognitive, embodied, social, and spiritual domains. While land and displacement did not emerge as a separate dimension, narratives concerning forced relocation were embedded within participants' accounts of disrupted livelihoods, community cohesion, physical security, and spiritual reliance – suggesting that the psychological consequences of displacement were experienced through their effects on everyday life rather than articulated as a distinct conceptual domain.

The culturally grounded framework emerging from this study extends the application of *Sikolohiyang Pilipino* within Indigenous mental health research by demonstrating that kapwa (shared identity), embodied well-being, spirituality, and community interdependence are foundational dimensions of psychological well-being among the Agta. In doing so, the study illustrates how phenomenological inquiry can generate culturally grounded mental health frameworks that complement, rather than replace, dominant psychological models. These findings carry several practical implications for mental health practice in the Cagayan region. Under *koneksiyon kenni Apo*, practitioners should consider collaborative interventions that actively involve local churches and indigenous spiritual leaders. Under *urnos ti komunidad*, community-based mental health interventions – such as collective healing circles or communal activities – should be prioritized over strictly individual, one-on-one clinical counseling. Across the dimensions of *kondisyon ti bagi* and *urnos ti komunidad*, mental health initiatives should address structural determinants of well-being, including livelihood insecurity, substance abuse, and domestic safety, recognizing that these conditions directly shape psychological well-being within the community. Rather than imposing external frameworks, mental health programs must be co-designed with

community members, integrating culturally valued practices such as storytelling, humor, and communal rituals. At the policy level, evaluation frameworks should be expanded to include culturally relevant indicators such as social cohesion, spiritual engagement, and physical ease alongside clinical outcomes.

Future research should examine the applicability of this framework across other Indigenous communities and explore its utility in informing culturally responsive mental health programs and policies. Despite the limitations associated with a single-community focus and a brief period of field engagement, this study offers an empirically grounded framework rooted in the lived experiences of the Agta community. By positioning Indigenous lived experiences as legitimate sources of psychological knowledge rather than viewing Indigenous communities solely as recipients of mental health services, the study contributes to the development of more culturally responsive research, practice, and policy for Indigenous communities in the Philippines.

References

- Bolinao, A. C. P., & De Guzman, R. (2017). Indigenization of depression: Understanding its impression, expression, and experiences among selected Indigenous peoples of Luzon, Philippines. *IAFOR Journal of Psychology & the Behavioral Sciences*, 3(1), 3–19.
- Brown, A. F., Ma, G. X., Miranda, J., Eng, E., Castille, D., Brockie, T., Jones, P., Airhihenbuwa, C. O., Farhat, T., Zhu, L., & Trinh-Shevrin, C. (2016). Structural interventions to reduce and eliminate health disparities. *American Journal of Public Health*, 106(S1), S4–S8. <https://doi.org/10.2105/AJPH.2016.303358>
- Brown, M. J., Cohen, A., & Smith, J. L. (2020). Mental health research with Indigenous populations: A critical review of methodological approaches. *International Journal of Mental Health Systems*, 14(1), 45–58. <https://doi.org/10.1186/s13033-020-00375-4>
- Celis, R. M., Reyes, M. A., & Santos, P. C. (2023). Mental health needs and service expectations among Agta communities in the Philippines. *Philippine Journal of Psychology*, 56(1), 78–102.
- Childs, R. (2021). *Indigenous mental health: The role of culture, colonialism, and community*. Canadian Scholars' Press.
- Cianconi, P., Betrò, S., & Janiri, L. (2019). The impact of climate change on mental health: A systematic descriptive review. *Frontiers in Psychiatry*, 11, 74. <https://doi.org/10.3389/fpsyt.2020.00074>
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Sage.
- Drbohlav, P., & Hejkrlik, J. (2017). Indigenous peoples' struggle for secure land tenure in the Philippines: Case study of Higaonon tribe in Opol, Mindanao. *Asian Social Science*, 13(7), 38–49. <https://doi.org/10.5539/ASS.V13N7P38>
- Enriquez, V. G. (1978). Pakikipagpalagayang-loob: Rapport in Filipino psychology. In R. Pe-Pua (Ed.), *Sikolohiyang Pilipino: Teorya, metodo at gamit* (pp. 89–102). University of the Philippines Press.
- Goetz, K., Borrás, J., & Raguz, J. (2022). Barriers and facilitators to mental health service use among Indigenous populations in Canada, the United States, Australia, and the Pacific Islands. *Journal of Indigenous Wellbeing*, 7(2), 112–130.
- Graham, M. (2021). Indigenous mental health: A global perspective. *Journal of Indigenous Health*, 8(3), 22–38.
- Hagen, R. V., & Minter, T. (2020). Displacement in the name of development: How Indigenous rights legislation fails to protect Philippine hunter-gatherers. *Society & Natural Resources*, 33(1), 65–82. <https://doi.org/10.1080/08941920.2019.1677970>
- Hechanova, M. R. M. (2019). Mental health and well-being in the Philippines: A review of the literature. *Philippine Journal of Psychology*, 52(2), 1–24.
- Hodgson, C. M., Stuart, S., & Thomas, L. (2022). Mental health disparities among Indigenous populations: A systematic review. *The Lancet Psychiatry*, 9(3), 234–247. [https://doi.org/10.1016/S2215-0366\(22\)00012-4](https://doi.org/10.1016/S2215-0366(22)00012-4)
- Hunter, E. (2020). Indigenous mental health and primary care: A systems approach. *Journal of Health Services Research & Policy*, 25(4), 246–254. <https://doi.org/10.1177/1355819620948830>

- Kisely, S., Crowe, E., & Lawrence, D. (2017). Mental health of Indigenous peoples: A systematic review of the literature. *Australian & New Zealand Journal of Psychiatry*, 51(5), 467–478. <https://doi.org/10.1177/0004867417698432>
- Kumar, M. B., & Tjepkema, M. (2019). Suicide among Indigenous peoples in Canada: A review of the literature. *Health Reports*, 30(9), 3–11. <https://doi.org/10.25318/82-003-x201900900001-eng>
- Lally, J., Samaniego, R. M., & Tully, J. (2019). Mental health in the Philippines: A review of the literature. *International Journal of Mental Health Systems*, 13(1), 45–59. <https://doi.org/10.1186/s13033-019-0305-3>
- Larena, M., Sanchez-Quinto, F., Sjödin, P., McKenna, J., Ebeo, C., Reyes, R., Casal, O., Huang, J., Hagada, K. P., Guilay, D., Reyes, L., Allian, F. P., Mori, V., Azarcon, L. S., Manera, A., Terando, C., Jamero, L., Siregar, G., ... Jakobsson, M. (2021). Multiple migrations to the Philippines during the last 50,000 years. *Proceedings of the National Academy of Sciences*, 118(13), e2026132118. <https://doi.org/10.1073/pnas.2026132118>
- Mataragnon, R. (1987). Pakikiramdam in Filipino social interaction. In *Foundations of behavioral sciences: A book of readings* (pp. 65–82). University of the Philippines Press.
- Moustakas, C. (1994). *Phenomenological research methods*. Sage.
- Orteza, G. (1997). Pakikipagkwentuhan: Storytelling as a research method in Filipino communities. In R. Pe-Pua (Ed.), *Sikolohiyang Pilipino: Teorya, metodo at gamit* (2nd ed., pp. 147–162). University of the Philippines Press.
- Pan American Health Organization. (2023). Mental health of Indigenous peoples in the Americas. PAHO. <https://www.paho.org/en/topics/mental-health>
- Pe-Pua, R. (1989). Pagtatanong-tanong: A cross-cultural research method. *International Journal of Intercultural Relations*, 13(2), 147–163.
- Pe-Pua, R., & Marcelino, E. (2000). Sikolohiyang Pilipino (Filipino psychology): A legacy of Virgilio G. Enriquez. *Asian Journal of Social Psychology*, 3(1), 49–71.
- World Health Organization. (2022). World mental health report: Transforming mental health for all. WHO. <https://www.who.int/publications/i/item/9789240049338>
- Yambao, C. M. K. V., Wright, S. K., Theriault, N., & Castillo, R. C. A. (2022). "I am the land and I am their witness": Placemaking amid displacement among Lumads in the Philippines. *Critical Asian Studies*, 54(2), 259–281. <https://doi.org/10.1080/14672715.2022.2059771>

A Tale Carved in Stone: Development of a Storybook Based on the Lakay-Lakay Folklore of Claveria, Cagayan

Ayesha Yasmeeen H. Eugenio*, Shara Mae E. Agustin, Heart A. Evangelista, Jenny Rose B. Zinampan, Kristine Mae R. Auayang, Jennifer C. Bangi

University of Saint Louis Tuguegarao

*Email : ayeshayasmeeneugenio0218@gmail.com

Abstract

This study responds to the growing threat to the Philippines' rich cultural heritage, which is increasingly at risk due to globalization, urban migration, and shifting demographics that contribute to the erosion of traditional values, indigenous knowledge, and storytelling practices. This decline, particularly in Philippine folklore, underscores the urgent need for research-driven efforts to preserve and revitalize traditional narratives before they are permanently lost. In this context, the study focuses on the creation and literary analysis of a storybook based on the Lakay-Lakay folklore of Claveria, Cagayan, as a means of promoting cultural sustainability through education. Anchored in heritage-based and contextualized learning, the research recognizes the Lakay-Lakay rock formation as both a natural landmark and a symbol of community identity, documenting, adapting, and reimagining the oral tradition into a pedagogically relevant literary form while maintaining cultural authenticity. Employing formalistic criticism, the study examines the folklore's narrative structure, ensuring that its cultural essence is retained. Data were gathered through interviews with local elders, archival research, and consultations with literary experts, emphasizing intergenerational dialogue as a key mechanism for sustaining intangible cultural heritage. The resulting storybook serves as a culturally responsive instructional material that not only fosters appreciation for local literature but also revitalizes cultural identity and supports the continued transmission of indigenous knowledge among learners.

Keywords: Lakay-Lakay folklore; cultural heritage preservation; storybook development; indigenous knowledge; cultural sustainability

1. Introduction

Literature refers to the literary works recognized for their artistic merit, including poetry, prose, and drama, and serves as a medium for expressing human experiences, emotions, and ideas within specific cultural contexts (Domestika, 2023). Beyond written texts, literature also encompasses oral traditions, reflecting societies' values and ways of life across generations. As both an art form and a social instrument, it not only provided aesthetic pleasure but also preserves, communicates, and interrogates cultural beliefs and practices. In contemporary discourse, literature has expanded to include oral and digital forms, highlighting its adaptability and enduring role in storytelling and cultural transmission. With this broader framework, folktales remain essential tools for preserving cultural identity, as they embody community values such as honesty, solidarity, and moral conduct while discouraging antisocial behavior (Sone, 2018). Their integration into education further underscores their value as instruments of cultural transmission and learning (Dahal & Bhatta, 2021).

However, despite their significance, oral traditions are increasingly threatened by modernization, globalization, and the dominance of digital culture, leading to the gradual decline of storytelling practices and the loss of indigenous knowledge (Haase, 2016). UNESCO has emphasized the fragility of oral heritage and the urgent need to safeguard diverse cultural expressions, including Philippine folklore. In the Philippines, these challenges are intensified by shifting demographics and changing cultural priorities, placing many traditional narratives at risk of extinction (Niez, 2024). Although folklore demonstrates resilience by adapting to new media (Eslit, 2023), many local traditions remain undocumented and underexplored, particularly in smaller communities.

In Cagayan, a province rich in Ibanag cultural heritage, folk literature such as riddles, chants, and epic narratives reflects the creativity and identity of its people (Coballes, 2023). Yet, despite this richness,

many local traditions remain insufficiently studied, especially in Claveria, where the Lakay-Lakay folktale exists primarily in oral form with multiple versions. This lack of documentation limits its accessibility and continuity, particularly among younger generations increasingly influenced by modern media. The Lakay-Lakay narrative, associated with significant cultural landmark, holds both educational and cultural value but remains underutilized as a resource for cultural preservation and instruction.

Given this context, there is a clear need to document, analyze, and revitalize the Lakay-Lakay folklore through the development of a culturally responsive storybook. Such an initiative ensures the preservation of its narratives while transforming them into accessible educational material that supports cultural transmission, strengthens local identity, and integrates indigenous knowledge into contemporary learning contexts. This study, therefore, responds to the urgent call for the safeguarding intangible heritage by bridging oral tradition and formal education, ensuring that the cultural legacy of Claveria is not only preserved but meaningfully sustained for future generations.

2. Objectives

To develop a digital storybook based on the Lakay-Lakay folklore of Claveria, Cagayan for use in basic education, integrating the findings of its moral, historical, and formalist analysis to support heritage-based learning, strengthen cultural identity, and contribute to the safeguarding and revitalization of local folklore.

3. Materials and Methods

This study employed a design and development research approach guided by a three-phase process: problem identification, solution conceptualization, and material design and development. This approach ensured that the creation of the Lakay-Lakay storybook was grounded in both empirical data and cultural relevance.

In the problem identification phase, the researchers conducted a comprehensive review of related literature and performed field-based inquiry in Claveria, Cagayan. This involved in depth interviews with local informants and consultations with literary experts to examine the current state of the Lakay-Lakay folklore, including its transmission, variations, and cultural significance. Document analysis of available records and transcriptions was also undertaken. The data gathered were analyzed using content and narrative analysis to identify recurring themes, cultural values, and gaps in the preservation and instructional use of the folklore. The analysis of the documents done by the researchers, were presented to the folks of Claveria, Cagayan, to ensure its correctness.

In the solution conceptualization phase, the findings from the initial analysis were used to define the framework for the development of the storybook. The researchers conceptualized a storybook that would serve as a culturally responsive instructional resource for basic education. Key narrative elements, moral lessons and historical contexts identified from the folklore were organized into a coherent structure for learners, ensuring alignment with educational objectives and cultural authenticity.

In the design and development phase, the researchers produced the storybook by transforming the analyzed folklore into a structured literary format. The storybook was crafted using appropriate language, narrative techniques, and visual elements to enhance learner engagement. The material was then subjected to expert validation by literary scholars and cultural experts, including representatives from the Cagayan Museum and Historical Research Center, to ensure accuracy, authenticity, and instructional quality. Revisions were made based on the feedback obtained.

Throughout the study, ethical standards were strictly observed, including securing informed consent, ensuring confidentiality, and respecting cultural ownership.

4. Results

The creation of the storybook was grounded on the Learning Competencies based on the Department of Education's curriculum guide for Grade 7 English, which is currently the only available and widely used resource provided by the Department of Education (DepEd) for schools. The researchers

chose to utilize the English Learning Competency as the foundational framework because they align with the current curriculum standards that schools are implementing.

In developing the storybook, the researchers incorporated the students' first language, Ilocano, in narrating the story to ensure its authenticity while having an English translation for the story to reach wide audiences. This approach was intentional to help students better understand the text structure by connecting the narrative to their native language. Using Ilocano as the medium for narration facilitates comprehension and engagement, as it draws on the learners' cultural and linguistic background. This strategy also supports the development of literacy skills by bridging the students' mother tongue with the English curriculum objectives.

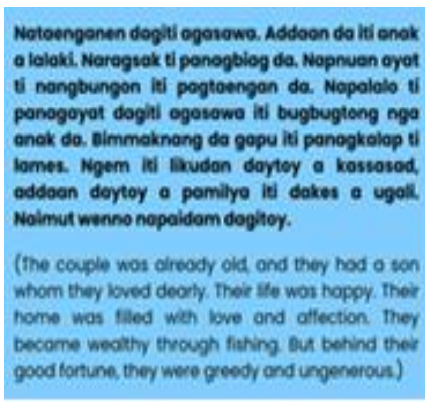
The activities in the storybook are carefully designed to reflect and fulfill the Learning Competencies for Philippine prose. Each activity targets specific skills outlined in the MELCs, such as analyzing character traits, interpreting settings, making inferences, and understanding narrative points of view. For example, the "Character Snapshot" activity helps students practice making inferences and analyzing character development while interpreting the story's setting and perspective.

Other activities focus on critical thinking and moral reasoning, such as the "Decision Wheel & Reflection," which asks students to step into the characters' shoes, make decisions, and reflect on the consequences, developing empathy and ethical awareness. The "Literary Detective Report" strengthens students' ability to analyze plot structure, identify conflict types, trace cause-and-effect relationships, and use textual evidence to support their claims, all key MELCs for literary analysis.

Further, students are asked to write an "Empathy Letter" from a character's perspective, which develops their ability to express emotional responses, analyze motivations, and create coherent, creative texts. Finally, the "Symbol and Theme Exploration" activity guides students to identify symbols and themes, connect them to the story's message, and reflect through creative outputs, deepening their understanding of literary elements and cultural values. These activities provide structured opportunities for students to interpret, discuss, and create original prose, ensuring they meet the learning competency for analyzing, evaluating, and producing literary texts that reflect local and national identities. The next section presents the parts of the story of The Legend of Lakay-Lakay that is intended to be the content of the storybook.

Parts of the Story of The Legend of Lakay-Lakay

Exposition



Activity 1: Character Snapshot

Skills Targeted:

EN7LC-1a-7: The learner infers character traits, feelings, and motivations based on the character's actions and dialogue in the text.

EN7LC-Ia-3: The learner describes the setting of a literary text using textual evidence.

EN7LC-Ia-4: The learner makes logical predictions about the story based on details from the text.

EN7LC-Ia-9: The learner identifies the point of view used in the story (first person, third person limited, or omniscient).



ACTIVITY 1:
Character Snapshot



Instructions: Imagine you're making a social media profile for this family before everything changes. You and a partner/groupmate will quickly "post" descriptions and clues based on the exposition. Complete the Character Snapshot template below using full sentences. You may use emojis or quick sketches to make it creative!



Meet the Family: Describe the characters in the story using adjectives.








Setting: Describe the setting using at least one clue from the story



Daily Life Highlight: What do you imagine a typical day looks like for them? Draw a simple illustration of it and explain it in 2-3 sentences.


Who is telling the story? Identify what point of view is used to narrate the story.



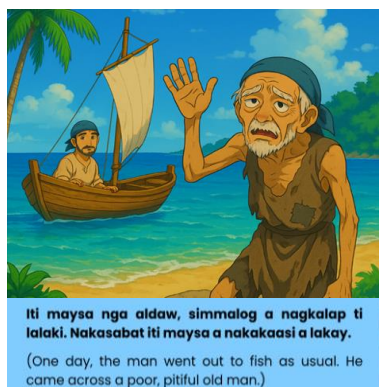
POV


What might go wrong with this family later on?

Based on the profile you created, write one prediction about what might happen in the story. Explain your prediction in 2-3 sentences by using clues from the story.

Great job finishing that activity! You're all set to dive back into the story. Have fun and enjoy the next part!

Rising Action



"Barok, no kadi laeng mabalin ket paramanan nak tu man ta maalam nga ikan," kinuna ti lakay.

Nagkatawa laeng isuna sa na intuloy ti panagkalap.

"No dinak ikkan, agbabawi kanto!" impangta ti lakay.

Adu ti nakalapan ti lalaki nga ikan, ngem saan na a pinagustuan ti kiddaw ti lakay.

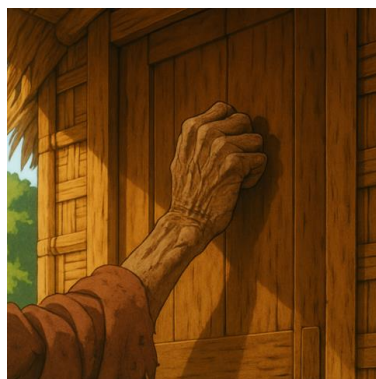
("Son, if you could spare one, please give me a fish," said the old man.

But the man just chuckled and carried on fishing.

"If you don't give me one, you will regret it!" the old man forewarned.

Despite catching a lot of fish, the man disregarded the old man's plea.)





Madama nga aglutluto da nga agasawa idi adda nagtuktok iti ridaw da.

(While the couple was cooking, they heard a knock at the door.)

"Apo, tulungan dak man. Mabisin nak, ikkan dak man iti kanek," kuna ti timek ti baket.

Rimmuar ti ina a napan iti ridaw.

"Tumalaw ka, awan ti maited mi kenka!" imbugtak na iti baket.

"Mangted ka koma uray bassit laeng. No saan agbabawi kan to!" adda pangta a sinao ti baket.

Ngem saan nangted dagiti agasawa.

("Please help me. I am hungry, please give me some food," said the voice of an old woman.

The wife came out to check on the woman banging on the door.

"Go away, we have nothing to give you!" she shouted at the old woman.

"Just give me a little. You will regret it if you don't!" the old woman warned again.

But the couple gave nothing.)



Activity 2: In Their Shoes

Skills Targeted:

EN7LC-Ia-7: The learner makes inferences about characters' motivations and decisions based on their actions and situations.

EN7LC-Ia-6: The learner expresses empathy and understanding by relating personal experiences to the events and characters in the story.

EN7LC-Ia-8: The learner draws moral lessons or values from literary texts and explains their relevance to real-life situations.

EN7LC-Ia-5: The learner evaluates the decisions and actions of characters using critical thinking and moral reasoning.

ACTIVITY 2: In Their Shoes

Instructions: Now it is your turn to step into the shoes of the fisherman and his wife. Imagine what you would do before they made their big choices. Complete the quick decision wheel and reflect honestly, just like you were living their moment. Let us see what kind of character choices you would make!

What would you do?

Fill in the blanks based on how you would respond to each situation. Be honest and thoughtful in your answers. This is your chance to show what kind of choices you might make if you were in their place.

- Situation 1: You are the fisherman. An old man asks you for a fish while you are fishing.**



- Situation 2: You are the wife. A hungry old woman knocks on your door asking for food.**



Quick Reflection:

Take a moment to reflect on the situations you just explored. In 3 to 5 sentences, answer the questions below. Think carefully and give thoughtful responses based on what you have learned so far.

- What lesson do you think the old man and woman were trying to teach the couple?**

- If you were in the shoes of the couple, would you help the old man and woman? Why or why not?**

Well done on completing the activity! You may now continue to the next part of the story. Let us see what happens after the couple made their choices.

Climax



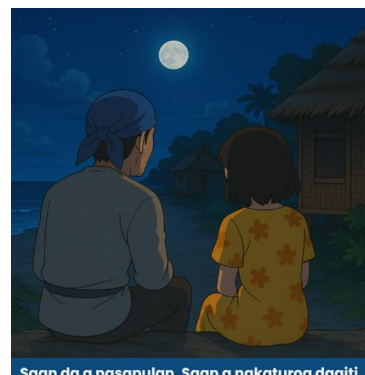
Kalpasan ti panagluto da, nagidasar ti makan ti ina. Ngem awan metten ti anak da idi ayaban da daytoy a mangan.

(When they were done cooking, the wife served the food. They called their son to eat, but there was no response.)



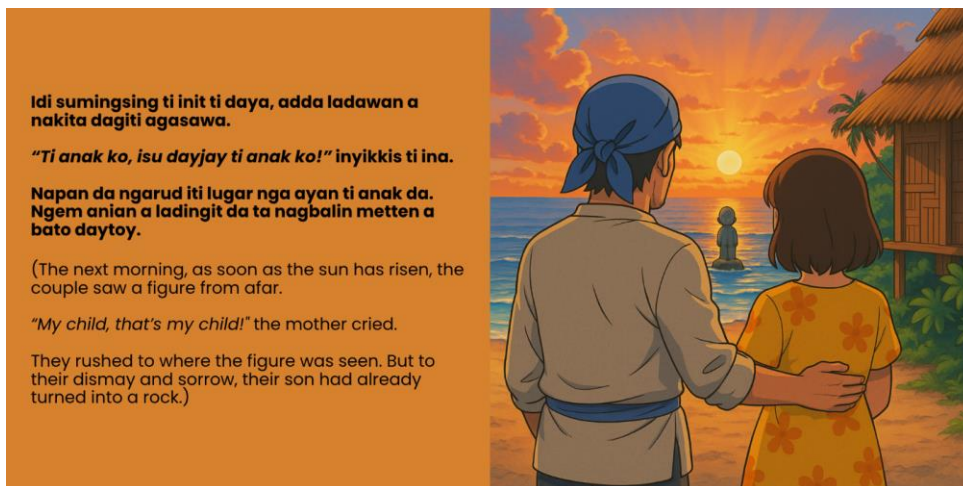
Nagkuyog da nga agasawa a nagbirek. Nagsaludsod da kadagiti kapurokan da no nakita da ti anak da.

(The couple went out together to look for their son. They asked their neighbors if they had seen their son.)



Saan da a nasapul. Saan a nakaturog dagiti agasawa. Nagdyan da iti igid ti baybay a nangpaspasungad ti anak da.

(Unfortunately, they were not able find him. Consequently, they struggled to sleep that night. They stayed near the shore in hopes of their son returning.)



Idi sumingsing ti init ti daya, adda ladawan a nakita dagiti agasawa.

"Ti anak ko, isu dayjay ti anak ko!" inyikkis ti ina.

Napan da ngarud iti lugar nga ayan ti anak da. Ngem anian a ladingit da ta nagbalin metten a bato daytoy.

(The next morning, as soon as the sun has risen, the couple saw a figure from afar.

"My child, that's my child!" the mother cried.

They rushed to where the figure was seen. But to their dismay and sorrow, their son had already turned into a rock.)

Activity 3: Literary Detective

Skills Targeted:

EN7LC-1a-1: The learner identifies and explains how elements of the plot (exposition, rising action, climax, falling action, and resolution) contribute to the overall meaning of a literary text.

EN7LC-1a-2: The learner identifies the type of conflict in a literary text and explains how it influences the development of the story.

EN7LC-1a-7: The learner makes inferences about characters or events and supports these with evidence from the text.

EN7LC-1a-10: The learner traces cause-and-effect relationships in a literary selection and explains how these events shape the story.

ACTIVITY 3:

Literary Detective

Instructions: In this activity, you will examine a key moment in the story and complete the "Lit Report" using only clues from the text. Pay close attention to how the characters, setting, and events work together in this part. Think critically, support your answers with evidence, and express your ideas clearly and creatively. Let us see how well you can uncover the meaning behind this important scene.

Where the Moment Fits

Circle and label the stage of the plot where you think this moment belongs on the plot mountain. Then, write a two-sentence explanation to support your answer. Use clues from the story.

**Shifts in the Story**

What emotional or life-changing event happens to the characters here? Describe the big shift in their life or feelings.

Conflict Revealed

What type of conflict reaches its peak in this part of the story? Circle your answer and justify it in 2-3 complete sentences.

a. Person vs. Person	c. Person vs. Self
b. Person vs. Nature	d. Person vs. Supernatural

Explain your answer in 2-3 sentences:

Setting the Mood

How does the setting make this moment more powerful? Use details from the story to explain how the time or place adds to the impact.

Tracing What Came Before

What earlier event caused this moment to happen? Connect this part of the story to a past decision or action of the characters.

Great Job, Literary Detectives! You may now continue to the next part of the story. And let us keep uncovering what happens next.

Falling Action

Nagsubli da a malmalday. Napalalo ti ladingit dagiti agasawa iti napasamak ti anak da.

"Sika ti makinbasol iti napasamak. Naimut ka ngamin. Awan serserbim nga ama!" binabalaw ti ina ti asawa na.

(They returned home quietly and heartbroken.

The loss of their precious child was too much for them to handle.

"This is your fault! You were so greedy and selfish. You're a useless father!" the mother scolded her husband.)



Iti apagdarikmat, nagbalin a bato ti mangngalap. Ngem saan a mamati ti ina nga iti napasamak iti anak ken ti asawa na ket malgapu iti lunod ti lakay ken baket a nagkiddaw kadakuada iti tulong.

"Alaek ti asawa ken anak ko," impatangken ti ina.

(Overcome with sorrow, the fisherman turned into a rock.

But the mother couldn't believe that her husband and son turned into a rock because of the curse cast by the old man and woman who asked for their help.

"I will take back my husband and son" she said in anguish.)



Natalpiyakan ti dalluyon ti saka ti ina, in-inut a nagbalin a bato iti asideg ti asawa na. Natungpal ti lunod ti lakay ken baket idi pinaay dagiti agasawa iti kiddaw da a tulong.

(As a wave struck the mother's feet, she slowly turned into a rock next to her husband. Because the couple refused to help them, the old man and woman's curse was realized.)

Activity 4: Words Left Unsaid**Skills Targeted:**

EN7LC-Ia-7: The learner analyzes characters' actions, decisions, and motivations by examining their behavior and emotional responses.

EN7LC-Ia-6: The learner expresses emotional and empathetic responses to literary texts through reflective and creative outputs.

EN7WC-Ia-4: The learner writes a short, creative text using clear, coherent, and well-structured sentences.

EN7LC-Ia-1: The learner demonstrates understanding of plot development by identifying key turning points and their effects on the story's outcome.

ACTIVITY 4: Words Left Unsaid

Instructions: Put yourself in the shoes of the father or mother right after discovering their son has turned into stone. Write a heartfelt letter to the old man or woman they refused to help. Use the prompts to guide you and show how the character has changed. Be honest and expressive.

Mechanics:

1. Write the letter as if you are either the father or the mother after discovering their son has turned into stone but before they themselves transform.
2. The letter should be written to the old man or old woman whom the family refused to help.
3. Use the prompts below to guide your writing. Your letter should be at least 5 sentences.
 - What regrets do you have about refusing to help the old man or woman?
 - If you could go back, what would you do differently?
 - How has this experience changed your view on kindness and generosity?
4. Show empathy and honesty in your letter, expressing the character's sorrow, guilt, or hope.
5. Write your letter on the provided space on the next page.

Rubrics

Content and Ideas (5 points)	Shows clear, thoughtful reflection that connects well with the story and fully responds to the task.
Empathy and Honesty (5 points)	Expresses sincere emotion and understanding of the character's situation.
Organization (5 points)	Ideas are clearly arranged and easy to follow from beginning to end.
Mechanics and Language (5 points)	Uses correct grammar, spelling, and punctuation with clear and appropriate language.

Resolution



Manipud idin, adda daton nga ited dagiti lumabas no agdaliyasat iti baybay kadagitoy a bato. Adu ti agkuna nga adda naikawes a bileg kadakuada. Dagiti daton wenno sagut a maikabil iti pinggan wenno sabsabot ket saan a lumned no maibatog kadagitoy. Dagiti saan a mamati, marba ti lugan da wenno adda dakes a mapasamak kadakuada.

(Since then, passersby would offer gifts when passing these rocks by the shore. Many believe that it holds a mysterious power. Offerings placed in bowls or containers do not get swept away by waves when placed on these rocks. Those who do not believe often experience accidents or misfortunes.)



Naawagan ti Apo Lakay-Lakay ti ama a nagbalin a bato. Ta nu kitaem ngamin iti adayo, kasla nakatugaw a lakay a nakakallugong idi panawen ti Kastila. Adu ti mangibagbaga nga isu ket nakita dagiti soldado nga Espaniol nga agwaywayas kadagiti barko. Maysa nga aldaw naitayab ti kallugong daytoy. Narba ti barko ket limned.

Ti ina a nagbalin a bato, naawagan met Apo Baket-Baket. Agasideg da iti Apo Lakay-Lakay.

(The father who turned into a rock is now called Apo Lakay-Lakay. From afar, he appears like an old man wearing a Spanish-era hat. Many claim he was seen waving to Spanish soldiers on ships. One day, his hat flew off, then a ship sank.

The mother who turned into a rock is called Apo Baket-Baket. She stands close to Apo Lakay-Lakay.)



Masarakan dagitoy a bato iti Barangay Taggat Norte. Laud nga amianan a paset iti Claveria. Masarakan met ti Apo Ubing-Ubing iti Barangay D. Leaño, saan unay nga adayo ti Minanga ti karayan Kabikungan. Madalalan dagiti agbibiyaha a mapan iti Fuga Island, Camiguin, Isla wenno ti Ili ti Calayan Island.

(These rocks can be found in Barangay Taggat Norte, on the northwestern coast of Claveria. Apo Ubing-Ubing, the child, is found in Barangay D. Leaño, near the mouth of the Kabikungan River. It is on the way for those traveling to Fuga Island, Camiguin, or Calayan Island.)



Kadagitoy a panawen dakkel ti pammati dagiti Claverianoes nga ti kaadda ti imahen ni Apo Lakay-Lakay, Apo Baket-Baket ken Ubing-Ubing ket salaknib dagitoy ti Ili ti tiempo ti kalamidad, aglalo no adda Bagyo a sumangbay.

(To this day, the people of Claveria believe that the presence of Apo Lakay-Lakay, Apo Baket-Baket, and Apo Ubing-Ubing protects the town during calamities, especially when typhoons come.)



Ngarud, masapol nga ayaten, respetuwen ken ipagpanakkel daytoy.

(Hence, it should be loved, respected, and honored.)

Activity 5: Whispers from Stone and Sea

Targeted Skills:

EN7LC-Ia-11: The learner identifies and interprets themes and symbols found in literary texts.

EN7LC-Ia-1: The learner explains how the elements of the story, such as characters, setting, and plot, influence the resolution.

EN7LC-Ia-6: The learner expresses insights and reflections through creative and imaginative responses to a literary text.

EN7WC-Ia-4: The learner produces a short, reflective or creative piece using clear and coherent sentences.

ACTIVITY 5: Whispers from Stone and Sea

Instructions: You are now a Literary Symbol Interpreter! The story has ended, but the rocks remain and they have stories to tell. In this activity, you'll explore symbols, themes, and messages left by the characters who became legends. Follow the steps below carefully. Be honest, thoughtful, and creative!

Symbol Search:

Identify and draw the symbols used in the story. For each drawing, explain your ideas using the guide questions below.

- What does the symbol represent?
- How does it connect to the story's message, especially about kindness and consequences?

Message from the Rocks

Choose one rock character from the story. If that character could speak to people today, what important lesson or message would they want others to know? Write your answers in 3-5 sentences.

"I am _____, and I would tell people..."

Create an offering

Draw a symbolic offering you would give to the Apo Lakay-Lakay and Apo Baket-Baket when you visit Claveria.

Caption: _____

This offering represents _____

Congratulations on completing all the activities and uncovering the heart of the story. Your thoughtful insights, reflections, and creativity brought the characters and lessons to life.

5. Discussion

Integrating the *Lakay-Lakay* folklore into basic education literature classes is essential for several pedagogical reasons. Using literature that is already familiar to learners serves as a powerful instructional

strategy, particularly in contexts where engagement and comprehension are primary goals. When learners encounter texts rooted in their own culture, language, and lived experiences, reading becomes more meaningful and less intimidating. This aligns with broader educational insights suggesting that students are more motivated to read when content reflects their interests and backgrounds, thereby strengthening both motivation and persistence in reading tasks (Valdez & Asuncion, 2026).

Moreover, incorporating culturally resonant narratives enhances student participation and deepens understanding of literary elements as well as the moral values embedded in texts (Belarde, 2025; Simbolon & Mandalahi, 2025). Such an approach not only fosters appreciation for indigenous heritage but also supports the development of essential language skills, creativity, and cultural awareness among learners (Bautista et al., 2026). In addition, exposure to authentic cultural narratives like folklore promotes intercultural understanding and communicative confidence, as learners engage with deeper cultural meanings while acquiring vocabulary and syntactic structures in context (Edi et al., 2025).

Further supporting this perspective, the study of Promma and Saihong (2026) provides strong empirical evidence for the importance of using familiar or local literature in developing reading habits and literacy. Their findings reveal a significant gap between current instructional practices and learners' needs: while existing practices in primary education were rated low, the demand for curriculum development grounded in local literature was rated at the highest level. This disparity suggests that reliance on unfamiliar or standardized texts fails to fully engage learners or sustain reading habits. Consequently, the authors advocate for the integration of local literature as a central component of reading instruction. Such integration not only enhances engagement but also enables learners to critically examine contemporary social issues through the lens of historical and cultural contexts (Pitri & Michaelidou, 2025).

6. Conclusion

The academe has an important role in preserving local literature and sustaining the cultural identity of communities. Integrating local literature into English language could be adopted as strategy for enhancing student motivation while ensuring the continuity of indigenous knowledge. The development of the Legend of Lakay-Lakay storybook demonstrates how localized narratives can both preserve the identity of Claveria, Cagayan and present it within a global context. Through this approach, learners are able to remain grounded in their cultural heritage while developing proficiency in a global language, highlighting the importance of educational practices that bridge local identity and global competence. The intended storybook however was not evaluated by layout artists, so it can be subjected to further improvements. The storybook could be used already for the grade 7 learners in Claveria, Cagayan, subject to the adoption of the school administration and grade 7 English facilitators.

Acknowledgements

The authors would like to express their sincere gratitude to Mr. Christian Dulin for his invaluable guidance in navigating the complexities of literary research. They also extend their appreciation to Ms. Zy Villoria for her assistance in facilitating meaningful connections with the local community. Furthermore, the authors are deeply thankful to the Cagayan Museum and Historical Research Center for granting access to archival materials and essential references that significantly enriched this study.

References

- Bautista, A., Biales, S., Florague, J. D., Manzo, S., Neri, K., Ancheta, O., Jr., & Dimalibot, A. A. (2026). Tales passed down: Investigating the integration of Philippine folklore in kindergarten classrooms. *International Journal of Research and Innovation in Social Science*, 10(1). <https://doi.org/10.47772/IJRISS.2026.10100251>
- Belarde, S. (2025). Narratives that educate: The impact of teaching indigenous and folk literature on student learning in Philippine HEIs. *International Journal on Culture, History, and Religion*, 7(SI2), 388–402. <https://doi.org/10.63931/ijchr.v7iSI2.204>

- Coballes, J. K. C. (2023, July 11). *The past and present of Cagayan arts and literature*. Philippine Information Agency. <https://mirror.pia.gov.ph/features/2023/07/11/the-past-and-present-of-cagayan-arts-and-literature>
- Dahal, H., & Bhatta, B. (2021). Folktales: A moral message from the past to the future generation. *Nepal Journal of Multidisciplinary Research*, 4(1), 31–43. <https://doi.org/10.3126/njmr.v4i1.36618>
- Domestika. (2023). *A journey through the history of literature*. <https://www.domestika.org/en/blog/12649-a-journey-through-the-history-of-literature>
- Edi, S., Siahaan, L. H., Agustin, I., Alifya, C., Aryaningsih, N., & Alifah, J. A. (2025). Developing culture-based EFL modules: West Javanese folklore for enhancing student engagement in senior high school. *English Review: Journal of English Education*, 13(3), 1081–1092. <https://doi.org/10.25134/erjee.v13i3>
- Haase, D. (2016). Challenges of folktale and fairy-tale studies in the twenty-first century. *Fabula*, 57(1–2), 73–85. <https://doi.org/10.1515/fabula-2016-0006>
- Pitri, E., & Michaelidou, A. (2025). Folk tradition, transition, and transformation for early childhood education. *Frontiers in Education*, 10, Article 1501558. <https://doi.org/10.3389/feduc.2025.1501558>
- Promma, K., & Saihong, P. (2026). The current situation and needs for developing curriculum to promote reading habits and reading literacy using Isan local literature for primary school learners. *Journal of Education and Learning*, 15(1), 166–175. <https://doi.org/10.5539/jel.v15n1p166>
- Simbolon, H., & Mandalahi, A. R. (2025). Integrating local folklore into language education: A case study of the Danau Toba narrative in Indonesian secondary schools. *Jurnal Tahuri*, 22(1), 68–82. <https://doi.org/10.30598/tahurivol22issue1page68-82>
- Sone, E. (2018). African oral literature and the humanities: Challenges and prospects. *Humanities*, 7(2), Article 30. <https://doi.org/10.3390/h7020030>
- Valdez, C. J., & Asuncion, J. (2026). Implications of the reading attitudes and habits of junior high school students in a laboratory high school in Laoag City, Philippines, for reading instruction enhancement. *Pantao (International Journal of the Humanities and Social Sciences)*, 5(1). <https://doi.org/10.69651/PIJHSS0501767>

Utilization of Lipa City Colleges' Library Reference Online Service (LibROS)

Marebel U. De la Cruz^{1*}, Jackelyn E. Capuno²

¹Chief Librarian, Lipa City Colleges Philippines

²Librarian, Lipa City Colleges Philippines

*Email : umalibelle1417@gmail.com

Abstract

This study analyzed the utilization of Lipa City Colleges' Library Reference Online Service (LibROS). The researchers aimed to analyze the utilization of the LibROS in terms of the external variables affecting the users in using the LibROS, the utilization of the online services offered by the library, ease of usefulness, and the level of attitude of the users towards the LibROS. It undertook to identify if there are significant relationships between the external variables and level of usefulness; external variables and level of attitude; and level of usefulness and attitude. To serve the purpose of the study, the researchers employed a mixed-method approach to collect and analyze the available data about the research being studied. The study made use of the data generated from the library (queries, requests and searches using LibROS) and a standardized questionnaire with some modification to be more appropriate to the objectives of the study. The respondents of this study were the students of Lipa City Colleges who have used the LibROS, as they were the fit to be the subject of the study since they can evaluate the online services offered by the library. The study revealed that the respondents agreed that there are external variables affecting their utilization of the LibROS. It only showed the importance of the information dissemination, content, features, internet connectivity, and ease of accessing the online services which entice the students to use and access the online services. It provides the relevance of library and faculty coordination to help the students accomplish their academic requirements in campus or remotely. The respondents also agreed on the level of usefulness of LibROS and their positive feedback on it because it is easy to use and disagreed of having frustrating in using it. The study showed the satisfaction of the library users on the features of the LibROS which is accessible in all kinds of gadgets internet connection and strong electric power supply. Furthermore, to continually deliver quality online library service, the researchers proposed improvement plan to enhance the online service and to continually increase its utilization.

Keywords : library online references, OPAC, reference

1. Introduction

Higher education institutions keep upgrading their facilities to embrace the trends and challenges in the education sector. One of the most important facilities that academic institutions are upgrading is the library. For years, libraries in different colleges and universities have been innovating its processes and services using technologies to make faster access and transaction than traditional libraries have been doing. In the past years, libraries all over the world were forced to stop its physical operation due to the COVID-19 pandemic that struck the whole world and greatly affected a lot in the education sector.

COVID-19 has pushed many universities to adapt and move their traditional and hybrid courses fully online. The pandemic also caused many academic libraries to close their physical doors, prompting librarians to work from home. Librarians were faced with opportunities and challenges as they connected with their students and faculty fully online; learned new video conferencing technologies as their face-to-face library instruction classes now needed to be held online; responded to a wave of new requests to be embedded into more courses; and updated current or creating new tutorials for their courses as well. Universities had a hybrid approach to classes because more classes were offered online than ever before. Traditional on-campus classes were still offered, but the number of people allowed in classrooms was significantly reduced. (Strasz, 2021).

Academic libraries cannot miss the opportunity to finally leave behind the traditional physical repository and shift into the scholarly communication hubs its campus communities need libraries to be.

Academic libraries will likely always have physical collections and the workforce necessary to purchase and manage them. It will continue to collect and curate special and historically meaningful physical collections. It will continue to support its patrons in the shift from just-in-case collection development to user-driven models and resulting logistical changes. (Ohler and Pitts, 2021)

According to Chinnasamy et.al (2023), almost all traditional libraries are conserved into digital libraries. Libraries must redesign and improve the digital content delivery format-related services in the library utilizer's need. Digital libraries are part of the library and users need both printed and digital materials for reference, research etc., and the library must be well equipped with those services as well as fully updated collections to meet the needs of the users. Most of the libraries do not have adequate space, computers and the lack of trained professionals are the main reason behind the no-utilization of the library and its resources. Most of the respondents revealed that the availability of proper resource creates non-utilization in the library. To improve the digital library services in this era, there should be a high-configuration computer systems, fast and improved internet facilities and the proper environment with trained and supporting staff. This kind of library set up creates much more attractiveness in the libraries.

Panhilason (2024) concluded in her study that the library users are highly aware of and satisfied with online library resources and services but in order to sustain the high level of awareness, utilization, and satisfaction with online library information resources and services, it is recommended that the library enhance its promotional efforts to continuously promote and raise awareness about online library information resources and services. The library could explore the possibility of enhancing the variety and quality of its online library resources and services to accommodate a broader spectrum of interests and requirements. User training and guides may also be provided to help users maximize the benefits of online resources and services. There shall also be a periodic assessment of the relevance and effectiveness of the library's online resources and services.

In the Philippines, academic libraries were forced to shift to hybrid library services to be able to deliver reliable references to students even remotely. Leading the movement is the Commission on Higher Education (CHED) and the Department of Education (DepEd), which have created portals that provide different references for additional sources of academic information as the education sector shifted to online classes. The Department of Education created DepEd Commons, which is a platform built where resources and learning materials are being shared, discovered, reviewed, and made alive. On the other hand, the Commission of Higher Education created PHL CHED Connect, which is a web application that contains higher education course materials in text, media, and other digital assets that are useful for teaching, learning, and research purposes.

The majority of academic libraries in the country were caught unprepared when the pandemic hit. Despite this, they managed to provide services that were delivered online while simultaneously embarking on a number of different initiatives. COVID-19 has shown to have made a considerable impact in terms of staffing, utilization, collection development, and funding. The result of the study conducted by Fresnido and Esposito-Betan (2020) envisioned academic libraries in the post-pandemic era to still be hybrid, with digital resources gaining prominence over printed resources.

As the nation shifted to online classes, Lipa City Colleges had no other option but to provide quality education in accordance with CHED's requirements continuously. As the institution implements online classes, all its components will follow. LCC-Learning Resource Center has to provide online services to keep on reaching out to faculty and students' needs even remotely. Before the pandemic struck, LCC-LRC had very active physical library services and very minimal online service, which only covers getting emails through email and Facebook Messenger. Its online journals were also not renewed by that time due to its utilization issues. As the modality of teaching and learning shifted, the library services were also forced to shift.

LCC-LRC started to scan its collections to provide the books' title page and table of contents. These scanned parts of the books are uploaded to the newly created website. Simultaneously, included in the work-from-home task of the librarians and library staff is looking for open access resources that can be used as additional reference materials. The Learning Resource Center also created LibROS, which stands for LIBrary Reference Online Service, which covers different services of the library. It is an online

reference service that provides answers to online reference questions through social media accounts. It covers the reference service, online public access catalog (OPAC), borrowing, which includes requests, and library orientation. It also offers open educational resources (OERs) which are downloaded from the Internet and provide free reference materials for faculty and students to use.

This study is supported by the Technology Acceptance Model (TAM) developed by Davis (1989) based on the theory of Reasoned Action (Fishbein and Ajzen, 1975) which deals more specifically with the prediction of the acceptability of an information system. The theory guided the researchers by explaining the process involved in the use of technology in providing library services virtually. Thus, the theory is very useful in the study since it deals with the innovation of the library and its services and the acceptance of the library users in the implementation of the innovation.

With the implementation of LibROS as the new innovation of the LRC, there remains a research gap in understanding the utilization of the service. Therefore, this study aimed to address this gap by analyzing the statistics of the utilization of the LibROS and the awareness of the library users on the online service to further improve its implementation. This study is deemed significant since this initiative will help developing libraries to be able to start providing simple but relevant library services online.

2. Objectives

The study aims to analyze the utilization of LCC students and faculty in using LibROS. It specifically seeks to answer the following questions:

1. What are the external variables that affect the utilization of LibROS?
2. What is the level of utilization of LibROS among LCC students in terms of:
 - 2.1. Reference Service;
 - 2.2. OPAC (Online Public Access Catalog);
 - 2.3. Borrowing (Requesting Scanned Copy);
 - 2.4. E-Resources; and
 - 2.5. Platform?
3. How do the respondents rate the ease of usefulness of LibROS?
4. What is the level of attitude of respondents towards the use of LibROS?
5. Is there a significant relationship between:
 - 5.1. External variables and level of usefulness;
 - 5.2. External variables and level of attitude;
 - 5.3. Level of usefulness and attitude?
6. Based on the results of the study, what improvement plans can be proposed to further improve the online service of the LRC and continuously increase its utilization?

3. Materials and Methods

The study analyzed the utilization of Lipa City Colleges' Library Reference Online Service (LibROS). In light of this, the researchers employed a mixed-method approach to collect and analyze available data about the research being studied. In this study, the quantitative part was the assessment of the utilization of its online services while the qualitative part was the analysis of the data collected from the recorded utilization of the online services including the Reference Service, LibROS-OPAC, Borrowing in the form of scanning of materials requested, access to e-resources and the utilization of the various online platforms used by the students and faculty.

For the quantitative part of the research, the researchers chose the 106 respondents who are the students of Lipa City Colleges and who have used the Library Reference Online Services (LibROS) from transactions made through the email, facebook messenger and LMS Inbox. The researchers chose only the students that have used the online services as they were the best fit to be the respondents of the study since they can evaluate the online services offered by the library. All of these participants were selected through purposive sampling.

The researchers used a standardized questionnaire with some modification to be more appropriate to the objectives of the study as the main data-gathering instrument which was used in the study to evaluate the utilization of the Library Reference Online Services. The modified questionnaire was validated by the chairperson of the panelist and by the statistician. For the qualitative part of the study, the researchers made use of data analysis, and the data of usage under LibROS (Library Reference Online Service) was used and extracted from the data generated from requests, queries, and searches using LibROS, specifically Reference Service, OPAC, Borrowing through a scanned copy of materials, Library Orientation, and E-resources (GALE).

This study made use of primary data that was gathered through the use of questionnaires along with a letter of intent. The researchers' intentions and the reasons they carried out the study are discussed in the letter of intent. The students who had previously used the library's online services were then chosen and emailed the survey link. The researchers utilized the Library's email and social media accounts to send private messages to Facebook, Messenger, or Gmail in order to gather the necessary data.

All of the learners who had accessed the library's online resources were given the surveys. Before conducting a poll, the researchers organized and obtained consent from the chosen students. The survey took between 5 and 10 minutes to complete. The researchers then added up, assessed, and provided an interpretation of the data they had gathered by using Google Forms they had designed to collect the replies to an online questionnaire.

To materialize this study, ethical considerations were taken into account at all times. Only the researchers would have access to the information and data from the respondents. Affiliates and names won't be mentioned in the study.

4. Results

This chapter shows the presentation, analysis, and interpretation of the gathered data from the questionnaires answered by the respondents in accordance with the specific questions posited in the statement of the problem.

1. External Variables that Affect the Utilization of LIBROS.

Table 1 External Variables that Affect the Utilization of LIBROS

Items	Weighted Mean	Int.	Rank
1. I am aware of the availability of Library Reference Online Service.	3.44	Strongly Agree	1
2. I find the collections in LIBROS adequate.	3.14	Agree	2
3. I find it easy to navigate LIBROS on my gadget because of its features.	3.06	Agree	3
4. I am encouraged to use the Library Reference Online Service because of the fast internet access.	2.98	Agree	4
5. I personally experience an inferiority complex in using the Library Reference Online Service	2.65	Agree	6
6. The epileptic power supply in the library limits my use of the Library Reference Online Service.	2.70	Agree	5
Composite Mean	3.00	Agree	

As written in Table 1, the respondents strongly agreed that they are aware of the availability of Library Reference Online Service with the highest weighted mean of 3.44 and the highest rank of 1. With the best effort of the library to market and promote the existence of the Library Reference Online Service during and after the pandemic, students used the service to aid them with their academic endeavors. Services were posted through the existing social media accounts of the library. Staff and librarians search the social media accounts of the students currently enrolled in the institution and were sent a friend request. The librarian and staff also posted infographics of the services through the school's LMS and

tapped the departments, deans, and professors to inform the students about the online services the library offers. This was all done by the LRC to promote awareness among the students and for them to utilize the services offered. This result aligns with Eiriemiokhale (2017) that awareness in turn provokes the desire for accessibility and accessibility provokes availability for the usage which simply means that awareness of the library reference online service inspires a need for accessibility, and accessibility inspires the usability of the service at hand. And the respondents are aware of the library reference online services which are also supported by Kumar and Kumar (2010) who found that the students who participated in the survey, were aware of the availability of e-resources as well as the Internet.

2. Level of Utilization of LIBROS among LCC Students.

2.1. Reference Service

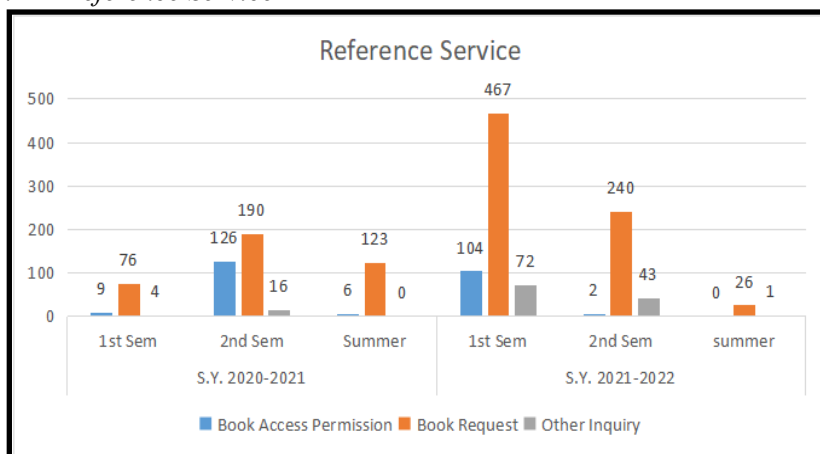


Figure 1. Utilization of Online Reference Service

After the lockdown, students are still not allowed to have face-to-face classes or visit the library. Thus the LRC made an effort to come up with an online library service that can aid the information needs of the LCC Community during the pandemic. At first, the library developed a website where they can store and upload the digitized materials of the library. Then later coined the name Library Reference Online Service or LibROS, these online services are composed of virtual reference services, Library website, LibROS-OPAC, e-Resources, and online dissemination of information.

In the first semester of the school year 2020-2021, only a few students knew about the service, which was the reason why only eighty-nine students made online inquiries in the library. This aligns with Zimmermann (1951), who was mentioned by Bawa (2018), "Resources Are Not; They Become," which implies that knowing the existence of resources without making use of them is pointless. Students, who are the resources' intended users, find the concept of utilizing electronic library resources to be important in this regard.

2.2. OPAC

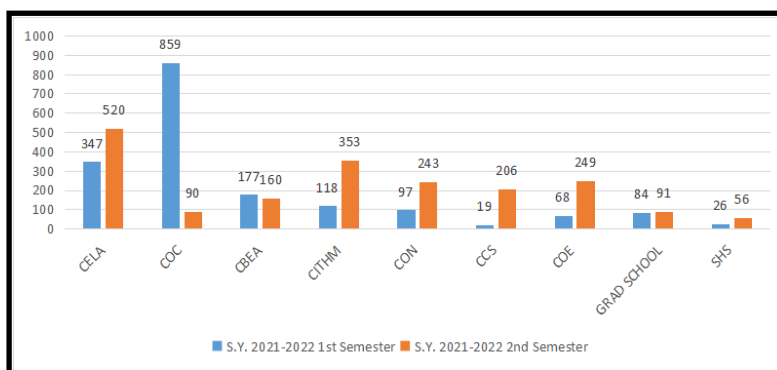


Figure2. Utilization of LibROS-OPAC

Figure 2 shows the utilization of the Library Reference Online Service - Online Public Access Catalog during the 1st and 2nd semester of the school year 2021-2022. It can be inferred that the highest utilization of LibROS-OPAC was during the 2nd Semester, with one thousand and nine hundred sixty-eight usage. LibROS-OPAC was developed last August 2021 with the help of the MIS Department. Its aim is to provide a gateway of library resources for the LCC community, which is also aligned with the article written by LISBDNETWORK (2022), that Web OPACs act as a doorway to resources that are not only available at the participating libraries' local levels but also at regional, national, and even international levels as well as those owned by the individual libraries themselves. It provides access to catalog information in the form of bibliographic records easier and enables users to interact with publications stored on computers around the world. The term "web cat" and "Information gateways" are now used to refer to it as a different search engine.

At first, the utilization was low because the students were unaware of the new online service offered by the library, which is why the library tapped the instructors/professors, faculty library committee, and deans of each department to inform the students about the service. The library also posted infographics about the LibROS-OPAC through the social media accounts and LMS.

2.3. Borrowing (Requesting Scanned Copy)

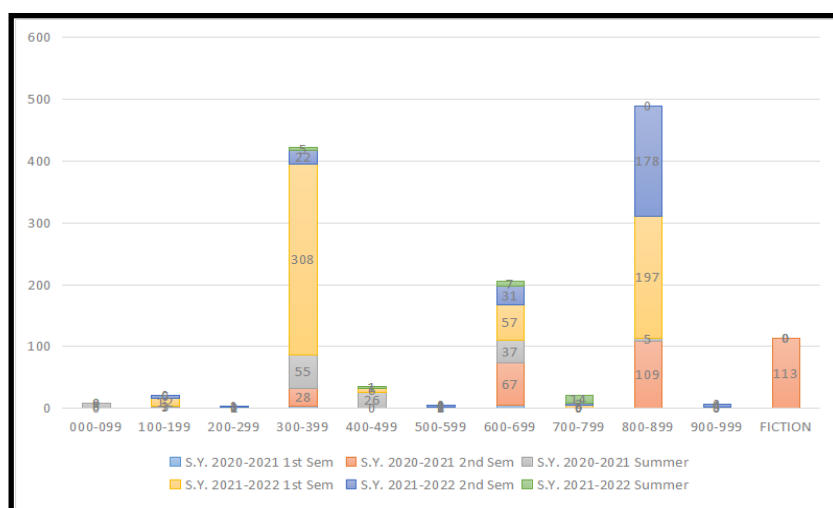


Figure 3. Borrowing (Requesting Scanned Copy) of Books

The figure 5 shows the number of requested scanned copies of books that is one of the services offered by the Library Reference Online Service (LibROS). The figures show that the most requested materials from the library are about literature, and that the most requested was done during the first semester of the school year 2021-2022. Since schools faced difficulties during the epidemic, including limited transactions and time limits while delivering library online services, they also had the opportunity to have a proactive team culture and offer their clients appropriate and innovative services. One of these services was document delivery service through scanning parts of requested materials and sending it on the students email or messenger in pdf format. This service was also done by other institutions in the country, like the University of the Philippines where they offer users of UP and non-UP libraries access to the Resource On Demand (ROD) document delivery service. Requests for articles and book chapters from journals, books, e-resources, and other items only available in the UP Diliman Libraries are handled by the ROD service. These scanned materials are available for pick-up in person or delivery through email (*Request for Resource on Demand*, 2023).

Cebu Normal University also performed this, using a service they refer to as Document Delivery Service (DDS). DDS handles requests for articles and book chapters from journals, electronic resources, printed books, and other materials accessible at the CNU Learning Resource Center, in addition to open

access databases. Requests should only be for certain chapters or journal articles, not the entire work. The patron/client may provide information in the Specific Request section, such as the title of the article/chapter/journal where it appeared, the location and date of publication, the requested page numbers, and other relevant information. These documents will be delivered electronically through email if you ordered them through the Document Delivery Service (LRC, 2021). The instructors, students, and non-teaching staff at CNU are all considered to be bona fide students for the DDS, just like they are for the LCC-LRC.

2.4. E-Resources

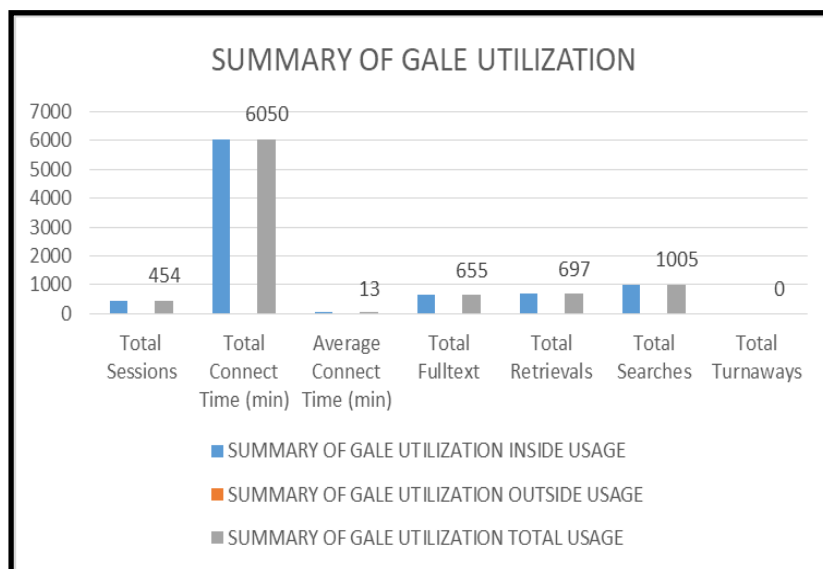


Figure 4. Summary of GALE Utilization

The figure above shows the utilization of GALE from the school year 2020-2021 and 2021-2022. It was found that one thousand five searches were done within thirteen minutes average connection time. Subscribed e-resources was a normal service offered in academic libraries even before the pandemic hit, its utilization has increased but not as drastic as the researchers thought. The reason for its low utilization is only students who are doing research are the one who can get resources from its e-journals and when it comes with the e-books, there are only fifty-four (54) subscribed titles of ebooks due to the limited budget of the library for e-books. On the other hand, these resources are supported by open-access e-books downloaded from the internet. This statement can be supported by R.A. Lowe (2022), which claims that academic libraries are investigating how the COVID-19 health epidemic has changed how people use the electronic resources that their institutions provide. In the study they have looked into trends in e-resource usage at a small academic library and its consortium before and after the outbreak. The results of this study disprove hypotheses that licensed online resources would be used more frequently to support research and instruction as schools transitioned to exclusively online course delivery in the early months of the epidemic. They have looked into a few potential underlying factors that could be utilized to guide the development of strategic collections, information literacy, and service changes.

Platform

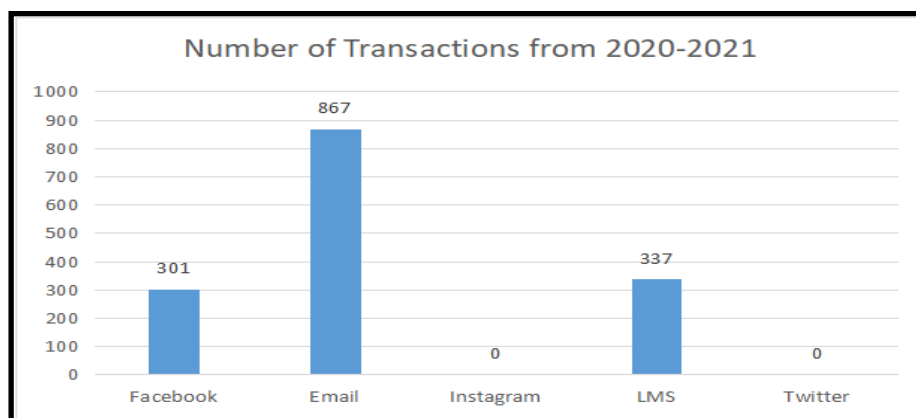
Figure 5. Utilization of Library Reference Online Services through Different Platforms

Figure 7 above shows the number of transactions made by the students through the different platforms. It can be inferred that the most used platform of the students is the email (Gmail & yahoo mail) with eight hundred and sixty-seven transactions, followed by the LMS (337 transactions) and Facebook (301 transactions) while twitter and instagram has no transactions. One further approach for clients to interact with the library, its services, and its holdings is through the use of straightforward tools and techniques included in email. Due to e-mail's widespread acceptability, LRC librarians utilized it as a strong, reliable reference and marketing tool in addition to a basic means of communication. This can be aligned with what Tsekea and Chigwada (2020) stated, that email may be a very useful tool when working remotely. Additionally, they recommended using chat systems, especially when workers wished to have meetings and exchange information. Through a variety of applications, libraries can exchange information and communicate. Additionally, using social media sites like Facebook, YouTube, WhatsApp, and Twitter, was offered by the library services during emergency situations.

3. Level of Usefulness of LIBROS.

Table 2 Level of Usefulness of LIBROS

Items	Weighted Mean	Int.	Rank
1. The LibROS' has a user-friendly interface	3.19	Useful	2.5
2. The LibRos can be accessed remotely anytime on the web.	3.15	Useful	4
3. The LibROS can easily provide various reference materials.	3.10	Useful	6
4. Using LibROS provides me with quality reference materials.	3.19	Useful	2.5
5. My task would be difficult to perform without Library Reference Online Service	2.94	Useful	15
6. Using Library Reference Online Service gives me greater control over my course work	3.04	Useful	13
7. The Library Reference Online Service addresses my course-related needs.	3.13	Useful	5
8. Library Reference Online Service enables me to accomplish tasks more quickly	3.35	Very Useful	1
9. Library Reference online Service support critical aspects of my academic work	3.08	Useful	7.5
10. Using the Library Reference Online Service allows me to accomplish more work than would otherwise	3.03	Useful	14

be possible.			
11. Using Library Reference Online Service reduces the time I Spend on unproductive activities.	3.05	Useful	12
12. Using Library Reference Online Service enhances my effectiveness in my academic work.	3.06	Useful	11
13. Using Library Reference Online Service improves the quality of the academic work that I do.	3.07	Useful	9.5
14. Using Library Reference Online Service increases my productivity	3.08	Useful	7.5
15. Using Library Reference Online Service makes it easier to do my academic work	3.07	Useful	9.5
Composite Mean	3.10	Useful	

As revealed in Table 2, the respondents assessed that LIBROS is very useful because it enables them to accomplish tasks more quickly which yielded the highest weighted mean of 3.35 and the highest rank of 1. Due to the lack of access to the physical collection in the library during the pandemic, and the difficulty in finding reliable and precise information on the internet, students deem the Library Reference Online Service very useful for them to accomplish the task quickly. This can be supported by Carlton (2019), who stated that, although Google is a powerful search engine, its results can be deluged with information, and many users are unaware of how to filter them by website source or content type (such as.pdf or.gov). Google provides a ton of helpful but standardized search suggestions. However, a discussion with a librarian can help you pinpoint exactly what you're looking for and determine the most effective strategy for using Google—or many other tools—to discover it.

4. Level of Attitude of Respondents Towards the Use of LIBROS

Table 3 Level of Attitude of Respondents towards the Use of LIBROS

Items	Weighted Mean	Int.	Rank
1. I often become pleased when I use the Library Reference Online Service.	2.88	Agreed	7
2. I am frequently happy when using Library Reference Online Service.	2.99	Agreed	4.5
3. Interacting with the Library Reference Online Service is often frustrating	2.42	Disagreed	12
4. I often become confused when I use the Library Reference Online Service system.	2.49	Disagreed	10
5. I find satisfaction every time I use LIBROS in my academic work.	2.97	Agreed	6
6. I am confident with my academic assignments when I use LIBROS.	2.99	Agreed	4.5
7. The Library Reference Online Service provides helpful guidance in performing tasks.	3.07	Agreed	3
8. I need to consult the user manual often when using Library Reference Online Service.	2.58	Agreed	8
9. Interacting with the electronic mail system requires a lot of my mental effort.	2.56	Agreed	9

10. The Library Reference Online Service is rigid and inflexible to interact with.	2.44	Disagreed	11
11. My interaction with the Library Reference Online Service is easy for me to understand.	3.02	Agreed	2
12. Overall, I find the Library Reference Online Service easy to use.	3.19	Agreed	1
Composite Mean	2.80	Agreed	

As reflected in Table 3, the respondents agreed that LIBROS is useful because overall, they find it easy to use which obtained the highest weighted mean of 3.19 and the highest rank of 1. The LIBROS is useful to the students and faculty since it can be accessed remotely as long as the library user has an internet connection. It was proven that during pandemic, the only way to reach out to the library users is through online and it is continuously proving that it was a good benefit brought by COVID-19 because the LRC-College was able to innovate library services to give the library users the service they deserve even in the blended modality of learning.

On the other hand, the said group of respondents disagreed because interacting with LIBROS is often frustrating, which gained the least weighted mean of 2.42 and least rank of 12. The result signifies that the library was able to provide the needs of the library users since they are not frustrated in accessing the platform as well as they were able to receive their requests online. It also shows that librarians and other library staff are responsive to the requests they receive online. It also shows that students are well-versed when it comes to navigating the technology whether they were oriented or not. Furthermore, the interface of the online service also showed its user-friendly features that made it easier for the students to accept and utilize the service

5. Relationship Between the Variables of the Study

Table 4 Relationship between the External Variables, Level of Usefulness, and Level of Attitude towards the Use of LIBROS

Variables	r-value	p-value	Decision	Interpretation
External Variables and Level of Usefulness	0.84	0.00000	$p > 0.01$, Reject H_0	Highly Significant
External Variables and Level of Attitude	0.78	0.00000	$p > 0.01$, Reject H_0	Highly Significant
Level of Usefulness and Attitude	0.75	0.00000	$p > 0.01$, Reject H_0	Highly Significant

As discussed in Table 4, when the responses of the respondents on the external variables that affect the utilization of LIBROS were compared to the level of usefulness. The computed r-value of 0.84 has a corresponding p-value of less than 0.01, thus rejecting the hypothesis.

In addition, when the responses of the respondents on the external variables that affect the utilization of LIBROS were compared to the level of attitude. The computed r-value of 0.78 has a corresponding p-value of less than 0.01, thus rejecting the hypothesis.

Lastly, when the responses of the respondents on the level of usefulness of LIBROS were compared to the level of attitude. The computed r-value of 0.75 has a corresponding p-value of less than 0.01, thus rejecting the hypothesis.

6. Improvement plan to enhance the Online Service of LRC and continuously increases its utilization

Based on the study's findings, the researchers designed the proposed Improvement Plan to enhance the Online Service of the LRC and continuously increase its utilization. Moreover, it will help in determining the needs for the enhancement of its interface, its content, and its quality through the feedback of the users.

The Improvement plan was based from the indicators of the survey that garnered the least rank from the respondents. The researchers believe that these indicators need attention to fully realize the quality online service of the LRC.

Table 5 Improvement Plan to enhance the Online Service of the LRC and increase its Utilization

KRA	Objective	Strategies	Persons Involved	Budget	Time Frame
Library User's Inferiority Complex	To develop the confidence of library users in asking for help in doing their research.	1. Include in the Library Orientation the ways on how to ask for help using online and face to face interaction. 2. Train the library staff on identifying library users who are struggling in looking for information. Include in the training on how to approach these kind of library users. 3. Create video tutorial in using LIBROS OPAC, GALE and the Physical Library Materials	Chief Librarian, Librarian, Library Clerks and Student Assistants Chief Librarian Librarians, Library Clerks	5, 000.00	Year round
Utilization and Usefulness of LIBROS	To continuously increase the utilization of the online service	1. Ensure that the online requests are attentively handled and granted by assigning a point person to address the requests received online 2. Conduct the library orientation to all departments by discussing the different services of the library	Chief Librarian, Librarian, Library Clerks and Student Assistants		Year round

		emphasizing the online services. 3. Strengthen the coordination with the faculty through the Faculty Library Committee to be able to encourage the students in using the library and its resources in their assignments and researches. 4. Re-evaluate the existing e-resources (GALE) with the help of the Faculty Library Committee to identify the needed improvement in the subscribed e-resources. 5. Reach out to more social media platforms of the students and faculty to be able to reach them easily. Constant updating of the social media accounts of the LRC should be done.	Librarians, Library Clerks, Faculty Library Committee Librarians, Library Clerks, Faculty Library Committee Librarians, Library Clerks	200,000.00-300,000.00	
Attitude of Respondents towards the use of LIBROS	To be able to know the satisfaction of the students and faculty in the use of LIBROS	1. Annual conduct of LIBROS satisfaction survey to identify the problems encountered by the library users. 2. Constant evaluation of the platforms' interface or features to be able to address the problems encountered by the students and faculty.	Librarians, Library Clerks, Faculty Library Committee Librarians, Library Clerks, Faculty Library Committee		Annually

5. Discussion

Presented in the results, the usability and features of the LibROS have proven that despite the barriers experienced by the students, it was still a relevant platform in the academic community of Lipa City Colleges. The students acknowledge the presence of this online service through the number of utilizations being presented. Despite the simplicity of the innovation in the library, it has a big impact on the learning and prompt sources of the students' academic requirement. The size of the college or university does not matter if the library would like to innovate its services. This innovation will provide ease and productivity to the students. Future research related to this innovation could enhance its features creating more variety of formats to access remotely and entice more students to utilize the online library for their academic endeavor.

Furthermore, future research could provide ways on how to disseminate information to the entire academic community focusing on the services being offered by the library. In that way, students will be able to explore library's reliable resources instead of junk or unreliable resources from unacceptable sites.

6. Conclusion

Based on the findings of the study, it was concluded that the Learning Resource Center (LRC) was able to provide the necessary devices to support its online services and effectively disseminate information about these services. As a result, respondents were aware of the availability of online library resources in addition to physical services. Furthermore, the study revealed that the utilization of online resources was largely driven by academic requirements set by instructors, indicating that students tend to engage with LRC resources when guided by their teachers. This highlights the importance of strong coordination and collaboration between faculty members and the LRC.

In addition, the researchers concluded that LIBROS is a valuable tool in supporting the academic needs of the respondents, as it allowed remote access to resources that helped them complete their academic requirements. The provision of online services by the LRC contributed to a high level of satisfaction among users. Moreover, the frequent utilization of online resources reflects a positive attitude among respondents toward the LRC services. Overall, the effective delivery of online services by the LRC significantly supports both students and faculty in their academic endeavors.

References

- Adanlawo, E. F., & Chaka, M. (2022). The Use of Online Library By University Students During Covid-19 For Academic Gratification. *Journal of Positive School Psychology*, 6(8), 10249–10255. Retrieved from <https://journalppw.com/>
- Bawa, K. D. (2018). Awareness and Utilization of Electronic Library Resources by Students of Tamale Technical University, Ghana. *DigitalCommons@University of Nebraska - Lincoln*. Retrieved from https://digitalcommons.unl.edu/libphilprac/2078/?utm_source=digitalcommons.unl.edu%2Flibphilprac%2F2078&utm_medium=PDF&utm_campaign=PDFCoverPages
- Cabonero, David & Austria, Rheabel & Bayang, John & Bumanghat, Rishel. (2020). Knowledge, Satisfaction and Challenges on Online Public Access Catalog in an Academic Library in Northern Philippines. *Library Philosophy and Practice*. Retrieved September 11, 2022 from https://www.researchgate.net/publication/338965495_Knowledge_Satisfaction_and_Challenges_on_Online_Public_Access_Catalog_in_an_Academic_Library_in_Northern_Philippines.
- Carlton, A. (2019). Ten Reasons Libraries Are Still Better Than the Internet | *American Libraries Magazine*. *American Libraries Magazine*. Retrieved from <https://americanlibrariesmagazine.org/2017/12/19/ten-reasons-libraries-still-better-than-internet/>
- Chinnasamy, Pandeewaran et al (2023). Digital Library Services and its Utilization Among the Students: A Case Study. *Journal of Information Technology and Sciences*. Vol. 9, Issue-1 (January-April, 2023). Retrieved from July 2, 2026 https://www.researchgate.net/publication/372289516_Digital_Library_Services_and_its_Utilization_Among_the_Students_A_Case_Study

- Esposito-Betan, S. M., & Fresnido, A. M. (2022). Covid-19 and Philippine Academic Libraries. *International Journal of Librarianship*. Retrieved November 2, 2022, from <https://journal.calaijol.org/index.php/ijol/article/view/215>
- George, T. (2022). *Mixed Methods Research | Definition, Guide & Examples*. Scribbr. <https://www.scribbr.com/methodology/mixed-methods-research/>
- Guo, Y., Yang, Z., Yang, Z., Liu, Y. Q., Bielefield, A., & Tharp, G. (2020). The provision of patron services in Chinese academic libraries responding to the COVID-19 pandemic. *Library Hi Tech*. Retrieved from <https://doi.org/10.1108/LHT-04-2020-0098>
- Jeyaraj, W. J. (2021). Transition of University Libraries to Adapt to the New Normal: A mid-and post-COVID-19 Response. *International Journal of Research and Innovation in Social Science (IJRISS)*, V (IX), 406-411. Retrieved from <https://www.rsisinternational.org/journals/ijriss/Digital-Library/volume-5-issue-9/406-411.pdf>
- Koulouris, A., Koloniari, M., & Vraimaki, E. (2022, May 6). Covid-19 and library social media use. *Reference Services Review*. Retrieved November 2, 2022, from <https://www.emerald.com/insight/content/doi/10.1108/RSR-06-2020-0044/full/html>
- Kumar, R. (2022). "The COVID-19 pandemic led to the Redesign of Library Resources and Services: Turning Crisis into an Opportunity". *Library Philosophy and Practice (e-journal)*. 7145. Retrieved from <https://digitalcommons.unl.edu/libphilprac/7145/>
- LISBDNETWORK & LISBDNETWORK. (2022). WEB OPAC. Library & Information Science Education Network. Retrieved from <https://www.lisedunetwork.com/web-opac/#:~:text=It%20allows%20users%20to%20interact,as%20an%20'Information%20gateways'>
- LISBDNETWORK. (2018). Digital Library Services. Library & Information Science Network. Retrieved from <https://www.lisedunetwork.com/digital-library-services/>
- Lowe, R. A. (September 2022). The impact of the COVID-19 pandemic on the use of library-licensed electronic resources: Using data to challenge core assumptions and leveraging disruption to initiate meaningful strategic change. Taylor & Francis. Retrieved November 3, 2022, from <https://www.tandfonline.com/doi/abs/10.1080/1941126X.2022.2099046?journalCode=wacq20>
- Lrc, C. (2021, March 11). New Normal Library Services – CNU. <https://library.cnu.edu.ph/new-normal-library-services/>
- Mehta, D., & Wang, X. (2020). COVID-19 and digital library services – A case study of a university library. *Digital Library Perspectives*, 36(4), 351–363. <https://doi.org/10.1108/DLP-05-2020-0030>
- Nancy Chinenyenwa, Akagha. (2021). Use Of Social Media In Delivery Of Reference Services By Librarians in FUTO Library. *Library Philosophy and Practice*. 6611. Retrieved September 11, 2022 from https://www.researchgate.net/publication/357322700_Use_Of_Social_Media_In_Delivery_Of_Reference_Services_By_Librarians_in_FUTO_Library
- Okolo, Stanley & Eserada, Rachael. (2019). ADOPTION OF SOCIAL NETWORKS MEDIA FOR REFERENCE SERVICES IN ACADEMIC LIBRARIES. *Library Philosophy and Practice*. Retrieved September 11, 2022 from https://www.researchgate.net/publication/335856283_ADOPTION_OF_SOCIAL_NETWORKS_MEDIA_FOR_REFERENCE_SERVICES_IN_ACADEMIC_LIBRARIES
- Osorio, N. L., & Droog, A. A. (2021). Exploring the Impact of the Pandemic on Reference and Research Services: A Literature Review. *New Review of Academic Librarianship*, 27(3), 280–300. <https://doi.org/10.1080/13614533.2021.1990092>
- Panhilason, Analyn. (2024). Users' Awareness, Utilization, and Satisfaction with Online Library Information Resources and Services. *Journal of Interdisciplinary Perspectives*. 2. 10.69569/jip.2024.0034. Retrieved from https://www.researchgate.net/publication/382532632_Users'_Awareness_Utilization_and_Satisfaction_with_Online_Library_Information_Resources_and_Services

- Rafiq, M., Batool, S. H., Ali, A. F., & Ullah, M. (2021). University libraries response to COVID19 pandemic: A developing country perspective. *Journal of Academic Librarianship*, 47(1), 102280. Retrieved from <https://doi.org/10.1016/j.acalib.2020.102280>
- Request for Resource on Demand. (2023, March 13). The University Library, University of the Philippines Diliman. <https://mainlib.upd.edu.ph/rod/>
- Sampath Kumar, B.T. and Kumar, G.T. (2010), "Perception and usage of e-resources and the internet by Indian academics", *The Electronic Library*, Vol. 28 No. 1, pp. 137-156. Retrieved from <https://doi.org/10.1108/02640471011023432>
- Sritharan, T. (2018). Evaluation of Usage and User Satisfaction on Electronic Information Resources and Services: A Study at Postgraduate Institute of Medicine Library, University of Colombo. Research Gate. Retrieved August 30, 2022, from <https://www.researchgate.net/publication/327577857>
- Tabusum, S., Saleem, A., & Batcha, M. S. (2013). Impact of Library Automation in the Development Era. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 17 (5) (Nov.-Dec., 2013), 20–26. Retrieved from <https://www.iosrjournals.org/iosr-jhss/papers/Vol17-issue5/D01752026.pdf>
- Tamaro, A. M. (2020). COVID 19 and libraries in Italy. *International Information and Library Review*, 52(3), 1–5. Retrieved from <https://doi.org/10.1080/10572317.2020.1785172>
- Tsekea and Chigwada, S. J. P. (2020). COVID-19: strategies for positioning the university library in support of e-learning | Emerald Insight. Emerald.Com. Retrieved September 1, 2022, from <https://www.emerald.com/insight/content/doi/10.1108/DLP-06-2020-0058/full/html#sec004>
- University of the Philippines (University Library). (n.d.). Scan & Deliver. University Library. Retrieved November 2, 2022, from <https://library.upm.edu.ph/node/190>

Teaching Research in Senior High School: A Qualitative Exploration of Teachers' Lived Experiences

Eduardo P. Santillan*, Gina S. Malonzo

Holy Angel University, Philippines

*Email : ejrsantillan@hau.edu.ph

Abstract

This qualitative study explored the lived experiences of Senior High School (SHS) teachers in teaching Practical Research subjects within the Philippine K–12 curriculum. Grounded in Husserlian descriptive phenomenology, the study examined how teachers navigate their roles as facilitators, mentors, and evaluators of student research. Twelve SHS research teachers from a private secondary school were purposively selected based on their direct involvement in research instruction. Data were gathered through semi-structured in-depth interviews, non-participant classroom observations, and field notes. Verbatim transcripts were analyzed using phenomenological thematic analysis through horizontalization, meaning-unit clustering, and thematic synthesis. Findings revealed three major themes: (1) Scaffolding Autonomy: The Transition from Lecturer to Mentor which highlights teachers' shift toward facilitative and inquiry-based instruction through structured scaffolding and sustained mentorship; (2) The Professional Burden: Duality of Role and Structural Overextension which captures the emotional tension between fulfillment and exhaustion as teachers simultaneously function as instructors, advisers, and evaluators amid limited institutional support; and (3) The Preparedness Gap: Navigating Foundational Deficits, AI, and Collaboration which underscores challenges related to students' weak research foundations, overreliance on artificial intelligence, and collaborative difficulties. The study uncovered the essence of the phenomenon described as The Burdened Navigator, reflecting teachers' lived reality of balancing mentorship, emotional labor, and systemic demands in sustaining research instruction. The findings suggest that effective SHS research instruction relies heavily on relational mentorship, structured scaffolding, and teacher resilience. However, the increasing demands placed on research teachers highlight the need for stronger institutional support systems, workload adjustments, professional development, and process-based assessment practices responsive to the evolving challenges of AI-assisted learning. The study contributes to ongoing discussions on research pedagogy, teacher identity, and phenomenological understandings of educational practice in the Philippine SHS context..

Keywords: Senior High School research instruction; descriptive phenomenology; research teachers; artificial intelligence in education; research pedagogy; Philippine K–12 curriculum

1. Introduction

Global education systems are shifting toward more inquiry-based approaches to teach students critical thinking, problem solving, and evidence-based decision making (Biswas, 2023; OECD, 2022). According to UNESCO (2022), strengthening such competencies is critical to attaining SDG 4, which includes providing inclusive and equitable quality education and lifelong learning for all by 2030. As a result, research-based learning allows students to adopt the paradigm and provide suggestions for improvements (Carnell & Fung, 2017).

In Southeast Asia, for instance, the Southeast Asian Ministers of Education Organization (SEAMEO 2020) has endorsed the suite of research capabilities as components of basic education in order to support regional innovation. To address this issue, Indonesia, Malaysia, and the Philippines have incorporated research-related courses into Senior High School (SHS) curricula (Amiruddin et al., 2023). In the Philippines, the Enhanced Basic Education Act of 2013 (RA 10533) created the K-12 curriculum, which included Practical Research 1 and 2 as applied subjects offered in SHS. These courses educate students to qualitative and quantitative approaches with the goal of strengthening research abilities, data analysis, and academic writing (Department of Education, 2016; Gopez et al., 2024). However, notwithstanding strong policy support, the delivery of research instruction continues to be plagued by

challenges. Teachers are faced with the need to guide students from inquiry through intricate tasks (such as research assignments) with minimal room for flexibility, limited resources, and distinct levels of learner readiness (Hipona, 2020). Many students lack competence in basic research concepts as it is interrelated to lack of scaffolding and teacher guidance (Almazan et al., 2023).

Despite strong curricular and policy support, the implementation of research instruction in SHS continues to encounter significant challenges. Teachers are expected to guide students through complex research processes ranging from conceptualization to data analysis and manuscript writing often within limited instructional time and institutional support (Hipona, 2020). Several studies reported that many students struggle with fundamental research concepts due to insufficient scaffolding, weak methodological understanding, and limited mentoring support (Almazan et al., 2023). In addition, Baguhin et al. (2024) identified systemic concerns affecting the effectiveness of research instruction, including excessive teacher workload, multiple teaching assignments, and insufficient professional development opportunities. Ulla et al. (2021) further argued that although teachers are expected to model research competence, many educators are not adequately equipped with the necessary training and resources to teach research effectively. This creates a discontinuity between curricular expectations and actual classroom realities particularly when teachers are assigned to teach research subjects outside their field of specialization.

Existing literature also highlights several instructional and institutional difficulties experienced by SHS research teachers. Aldevera et al. (2019) identified challenges encountered by teachers in Cebu including disruptive student behavior, overlapping academic demands, and limited pedagogical support. Similarly, Villano-Ac (2024) examined out-of-field teaching and found that teachers struggled to simultaneously master unfamiliar subject matter and manage classroom instruction effectively. Branzuela et al. (2023) likewise reported that non-specialist research teachers demonstrated lower confidence levels and experienced difficulty guiding students through research activities. These studies suggest that research instruction in SHS is not only a pedagogical task but also an emotionally and institutionally demanding responsibility.

However, despite the growing body of literature on SHS research instruction, studies focusing on the lived experiences of Practical Research teachers remain limited, particularly within private school settings. Most existing studies concentrate on curriculum implementation, student competencies, or systemic educational concerns, while fewer investigations examine how teachers personally navigate the realities of teaching research. Consequently, there remains insufficient understanding of how teachers make pedagogical, methodological, and ethical decisions while mentoring students through various stages of the research process.

First, there is limited empirical work on examining how teachers make pedagogical, ethical, and methodological decisions as they guide their students through complex stages of the research process. While previous studies acknowledge teachers' lack of training or confidence, they seldom investigate how teachers navigate competing demands. These involve balancing theoretical instruction with hands-on mentoring, addressing ethical issues like plagiarism, assent and consent, or supporting students struggling with research methods or framework. These instructional observations on research teaching remain largely undocumented.

Second, the context of private SHS institutions is significantly underexplored. Most of the studies or sources draw from public school settings where limitations vary significantly in workload demands, class population, parental participation, and achievement pressures. Teachers in private school often shoulder unique kinds of unseen labor such as detailed coaching of student drafts, coordinating panels, and meeting strict expectations for output quality but these experiences remain largely unrecognized in the literature. This imbalance leaves a gap in understanding how different institutional cultures shape the teaching of research.

Third, researchers rarely address the identity work and emotional labor involved in teaching Practical Research. Teachers are expected to serve simultaneously as mentors, editors, evaluators, and panelists at the same time. How they negotiate these overlapping roles, manage the stresses associated with lengthy student outputs, or reconcile school expectations with personal competence have not been

sufficiently examined. This gap is crucial as these internal struggles directly influence teachers' confidence, pedagogical choices, and capacity to support students effectively.

Fourth, although the literature identifies challenges heavy workloads and misalignment between training and expectations. There is limited inquiry into the adaptive strategies and creative solutions that teachers develop to cope with these constraints. Little is known about the innovative practices, classroom adjustments, or mentoring innovations which teachers employ to make research instruction workable. Understanding all of these is necessary not only to characterize current realities but also to inform future teacher training and curriculum reform.

Finally, this gap persists even as the strengthened Senior High School curriculum is set for full implementation next school year. While the revised curriculum streamlines competencies and updates learning standards, the same structural issues remain uneven. These involve teacher preparation, varying institutional demands, limited professional development, and persistent workload pressures. Moreover, reforms emphasize on methodology and most likely content and competency redesign. Yet, the voices and lived experiences of those who will implement these changes were minimally documented in the reform process. Thus, a deeper understanding of teacher experiences is also needed to determine whether curricular adjustments really address the challenges of research instruction.

Beyond these gaps, their significance lies in the unresolved tensions that shape the implementation of research instruction in Senior High School. At the policy level, the curriculum positions research as a core competency. However, this expectation often exceeds the level of teacher preparedness. This creates a misalignment between intended learning outcomes and actual instructional capacity. This tension is further complicated by the gap between reform and reality. Where policy mandates assume ideal conditions that are not consistently present in classrooms. Particularly, in terms of time allocation, training, and institutional support. Moreover, differences in institutional expectations, resource allocation, and performance pressures may identify distinct forms of teacher experience that are not captured in public school-dominant literature. Hence, exploring these issues allows for a deeper understanding that can inform more responsive improvements in research education.

Given these gaps, this study aims to closely examine the real experiences of SHS teachers who handle Practical Research in a private school setting. By looking at the pedagogical, ethical, methodological, emotional, and institutional dimensions of their work, this study seeks to generate insights that remain crucial amid ongoing curriculum reforms and can meaningfully inform how research education is supported in the Philippine SHS system. By amplifying teacher voices, this investigation intends to uncover their challenges, strategies, and adaptive practices which will eventually contribute practical recommendations for sustaining and improving the delivery of Practical Research instruction in private institutions.

2. Objectives

This study aims to explore and understand the lived experiences of senior high school teachers in teaching research subjects, with the aim of generating insights that can inform and improve research instruction in the senior high school context.

Specific Objectives

1. To describe teachers' perspectives and lived experiences in teaching research to senior high school students.
2. To identify the challenges and difficulties teachers encounter in facilitating research learning.
3. To examine the strategies and practices employed by teachers to guide and mentor student researchers.
4. To explore how teachers perceive their roles in fostering students' research skills and culture.
5. To produce evidence-based insights and concrete recommendations for improving research pedagogy and strengthening support systems in senior high school Practical Research instruction.

3. Materials and Methods

Research Design

This study employed a qualitative descriptive phenomenological design grounded in Husserlian phenomenology to explore the lived experiences of Senior High School (SHS) teachers handling Practical Research subjects. Descriptive phenomenology was appropriate because the study sought to describe the essence of teachers' experiences in mentoring, facilitating, and evaluating student research within the Philippine K–12 curriculum. Consistent with Husserl's principle of epoché, the researcher practiced bracketing throughout data collection and analysis to minimize preconceived assumptions (Husserl, 2012; Engelland, 2020).

Participants and Research Setting

The study involved twelve (12) SHS teachers from a private educational institution offering research-related subjects during Academic Year 2025–2026. Participants were selected through purposive sampling based on the following criteria: (1) currently teaching Practical Research subjects or equivalent courses, and (2) possessing at least one year of experience teaching research at the SHS level. Teachers without regular research teaching assignments and those with less than one year of experience were excluded.

The private school setting was selected because private institutions remain underrepresented in studies on SHS research instruction despite their distinct institutional expectations and mentoring practices.

Data Collection

Primary data were collected through semi-structured, in-depth interviews conducted either face-to-face or via Zoom, depending on participants' preference and availability. Each interview lasted approximately 45–90 minutes. It explored teachers' lived experiences, challenges, mentoring practices, instructional strategies, and roles in teaching research. Follow-up probing questions were used to clarify and expand participants' responses.

With participants' consent, interviews were audio-recorded and transcribed verbatim. Non-participant observations and relevant documents such as syllabi, rubrics, and mentoring guidelines, were also examined to enrich the data. Data collection continued until data saturation was achieved, indicated by the absence of new codes, categories, or themes in successive interviews.

Prior to data gathering, ethical clearance was secured from the Institutional Review Board (IRB) of the institution. Participants voluntarily signed informed consent forms and were informed of their right to withdraw at any stage of the study.

Research Instrument

The study utilized a semi-structured interview guide consisting of five primary open-ended questions with follow-up probing questions. The interview questions explored teachers' lived experiences in teaching research, the challenges they encountered, the strategies they employed in mentoring student researchers, perceptions of their role in fostering students' research skills and culture and their recommendations or suggestions to improve the teaching of Practical Research. The interview guide was validated by a qualitative research specialist, a teacher education expert, and an experienced research adviser to ensure its clarity, coherence, and alignment with the study objectives.

Data Analysis

Data were analyzed using inductive thematic analysis guided by the principles of descriptive phenomenology. The coding process was informed by Saldaña's (2009) coding procedures and grounded in Husserl's (2012) descriptive phenomenology. Interview transcripts were read repeatedly to achieve familiarity with the data. Through horizontalization, significant statements were identified, organized into

meaning units, inductively coded, clustered into categories, and synthesized into themes representing teachers' lived experiences.

Theme saturation was established when successive interviews produced no new codes or themes and only confirmed existing patterns. To ensure trustworthiness, the study followed the criteria of Lincoln and Guba's (1985) through member checking, triangulation, peer debriefing, reflexive journaling, and maintaining an audit trail.

Ethical Considerations

The study adhered to established ethical standards and complied with Republic Act No. 10173 or the Data Privacy Act of 2012. Participants' identities were protected through pseudonyms and coded identifiers. All research data were securely stored in password-protected devices accessible only to the researcher. Participation was voluntary and no external funding, compensation, or conflict of interest was involved in the study.

4. Results

Using a descriptive phenomenological approach, the data were systematically coded and organized into categories and themes through thematic analysis. There were three major themes concluded that capture the lived experiences of teachers in teaching research in senior high school. These themes provide a comprehensive narrative of the participants' pedagogical shifts, professional burdens, and the modern challenges of the research classroom.

Theme 1: Scaffolding Autonomy: The Transition from Lecturer to Mentor

There was a consistent perception across the ten participants that teaching research is not centered on direct content delivery but on facilitating student learning. They consistently described their role as facilitators who guide students through the research process rather than simply delivering content. This reflects a shift toward student-centered and inquiry-based learning.

This first theme explores the pedagogical strategies and role perceptions of the participants. Participants (P) consistently identified as facilitators rather than lecturers. P5 articulated this shift clearly, stating, "I see my role mainly as a facilitator in developing my students' research skills. I guide them through the process, provide feedback on their work, and help clarify concepts when needed." Similarly, P7 reinforced the idea that teaching research is "not spoon-feeding but guiding them. In teaching research, if we only rely on spoon-feeding the students and do not facilitate their learning, then they will not be equipped with the necessary research skills". A critical component of this transition is the immersive mentorship teachers provide. Beyond classroom hours, teachers act as advisers, with P4 noting their role involves "guiding them in formulating their research significant parts such as frameworks, tools, and design." Similarly, P3 clarified the role "I first teach the lesson through guided instruction. After that, I give them time to write and to divide their tasks among themselves". Some participants even described an embedded approach. P10 explained being "like a sixth member of the group" provides a safety net while still allowing students to explore independently.

Participants utilize structured scaffolding to bridge the gap between student confusion and independent mastery. This is not merely assistance, but a deliberate strategy of "breaking the process into manageable steps" (P8) and using "templates and examples" (P9) to explain abstract concepts. This process often follows a gradual release model as P1 and P8 described: "First I teach, then we do it [together], then they do it independently." and "using the "I do" and "we do" strategies". Finally, this pedagogy relies on radical accessibility. Participants reported extending themselves "beyond class hours" (P7) and providing "continuous consultation, even late at night" (P5) to ensure student engagement.

The researchers conducted non-disruptive or non-intrusive classroom observations among the participants. This is to validate the pedagogical shifts described by the participants. This triangulation of interview and classroom observation data strongly supports the theme Scaffolding Autonomy: The Transition from Lecturer to Mentor. Participants consistently described their role as facilitative rather than directive which emphasize guidance over spoon-feeding. Their commitment to this role is reflected in

specific statements where they view themselves as facilitators essential to the students' navigation of research procedures. This was evident in classroom observations. The teachers were seen physically present among students. They were roaming between groups, sitting at their level, and engaging closely rather than positioning themselves as the central authority in front of the class. Instead of providing direct answers, participants employed probing or Socratic questioning techniques to encourage critical thinking. This aligns with their expressed intent to guide rather than dictate learning.

Furthermore, both data sources highlight the use of structured scaffolding strategies. Participants reported breaking complex research tasks into manageable steps and utilizing templates and examples. These were also observed in practice through the use of instructional materials such as printed guides and exemplar studies discussed in class. Immersive mentorship was another key aspect. Participants described themselves as deeply involved in group work sometimes “like a sixth member”. This role mirrored in observations of small-group consultations focused on specific student needs. This usually happens in the library. The gradual release of responsibility was also highly evident as teachers transitioned from direct instruction to collaborative work. This progression moved eventually to independent student output within a single session. Lastly, the commitment of participants to availability extended beyond the classroom. For example, they provided continuous support through digital platforms. This practice was confirmed by observed real-time responses to student queries during work periods.

These findings demonstrate a consistent shift from traditional lecturing to a more student-centered and mentorship-driven approach.

Theme 2: The Professional Burden: Duality of Role and Structural Overextension

The second theme examines the internal and external realities of the research teacher. The findings reveal a striking emotional duality. The participants described the work as a “Herculean task” (P6) that is simultaneously “highly rewarding” (P6) and “fulfilling” (P8). This fulfillment is primarily derived from witnessing student transformation “from confusion to confidence” (P9).

However, this satisfaction is tempered by role overload and exhaustion. Teachers are not merely instructors, but they serve as “teacher, adviser, and panelist” (P7) at the same time. P3 felt this as repetitive or fossilized because they are the ones “who teach them how to write research and then also evaluate and suggest revisions afterward”. The volume of work is also significant, with P7 noting the strain of “handling six sections with various groups... that’s a lot of research papers to read or check and perform other tasks in between”. P10 described the process of checking and monitoring outputs as simply “exhausting.” This overextension is often aggravated by a perceived gap in teacher competence. P4 admitted, “I was not trained enough in research during college, forcing many of us into intensive self-study or relying on graduate studies” (P10) to keep pace with the curriculum. P1 even wondered and questioned, “In college education, especially in teacher education programs, there is no specific research major. So where does specialization in research really come from? Where does one develop the expertise to become a research teacher?”.

Consequently, there is a call for systemic reform and institutional support. Participants identified a lack of “official textbooks” (P5) and “clear guidelines” (P9) “I emphasize the importance of providing clear guidelines, templates, and access to research tools to make the process more manageable, especially for students from different strands”. These show that research instruction is currently sustained by individual teacher effort rather than robust systems. As P7 suggested, there is a critical need for a “research department or dedicated support system”, “strong University Research Office (URO) partnerships” (P2), “more seminars and training” (P5) and a “stand-alone research coordinator” (P1, P2 & P10) to professionalize the role and prevent burnout.

The researchers had the chance to observe in the classroom the physical and structural manifestations of the teachers' workload. This triangulation of classroom observation data and interview reinforces the theme The Professional Burden: Emotional Duality and Role Overload. First, participants described research instruction as a demanding and “Herculean” task both exhausting and fulfilling. This experience reflected in observations of high-intensity classroom periods. This is particularly during near oral defense deadlines where teachers showed visible signs of fatigue yet remained actively engaged

during students' moments of understanding. This burden is further intensified by the multiplicity of roles teachers assume as they simultaneously act as instructors, advisers, and evaluators. Classroom observations confirmed this through rapid role switching within a single session or period. Specifically, teachers moved fluidly from delivering instructions to guiding specific groups and assessing outputs.

In addition, systemic overextension emerged as a significant challenge with teachers managing six sections and a large volume of research outputs. This was evident in the classroom observation. Teachers attempted to provide in-depth feedback while also maintaining classroom management and addressing concerns for numerous students. The emotional dimension of this burden was also apparent. Teachers expressed deep investment in their students' success which often internalizes their stress. Observational data supported this through affective behaviors such as attentive listening and close engagement during consultations. Finally, underlying pressures particularly tight deadlines shaped the teaching environment with teachers and students constantly racing against time. This was observed in compressed instructional moments including students seeking quick clarifications during breaks or after class.

These findings illustrate the complex and multifaceted demands placed on teachers. Such demands necessitate and highlight both the emotional rewards and the significant strain associated with their roles.

Theme 3: The Preparedness Gap: Navigating Foundational Deficits, AI, and Collaboration

The final theme identifies the primary obstacles to successful research instruction. All participants highlighted a persistent skill gap in the student population. P9 noted that some students have a "limited background in writing, citation, and critical thinking," while P6 pointed to "low reading and writing proficiency." This creates an uneven playing field where students enter with "different levels of understanding" (P4), or "a mix of high-performing students and those who are not as engaged or skilled in writing research" (P3), making standardized instruction difficult.

This gap has made the classroom vulnerable to the disruptive challenge of Artificial Intelligence (AI). Teachers expressed deep concern that AI is used as a crutch rather than a tool. P7 observed that "students rely on it too much," and P10 added that they often "just accept AI answers without thinking," bypassing the critical thinking the subject is intended to foster. This creates an added burden for the teacher who must now monitor for AI-generated outputs (P7) while "teaching students how to use it responsibly".

Furthermore, collaborative tension adds to the difficulty. Participants reported issues with "unequal work distribution" (P9) and "non-participative members" (P7). P2 even explained that "group dynamics also add to the challenge because research is a group work. There are times when some members do not submit their parts on time, and conflicts arise within the group". To maintain accountability, teachers are forced to implement strict intervention strategies, such as P10's rule of "removing inactive members." Hence, aside from checking, teachers also need to manage group collaboration and help resolve conflicts among group members.

These factors such as skill gaps, AI reliance, and group dynamics create a perfect storm of challenges that require the teacher to be more vigilant and remedially focused.

This final thematic cluster was verified through direct observation of the student-teacher feedback loop. This triangulation of interview and classroom observation data really highlights the theme The Preparedness Gap and AI Disruption. Participants identified significant foundational deficits among students which were reflected in classroom observations. It was observed that considerable time was spent correcting elements such as APA formatting and logical flow of ideas. Alongside these challenges, the emergence of artificial intelligence was perceived as a disruptive force. With this, teachers expressed concern that it may undermine students' critical thinking. This concern was supported by observations of vigilant monitoring practices to ensure authenticity.

Despite these concerns, teachers also demonstrated adaptive strategies in response to AI. These techniques emphasize the need to guide students in using it as a tool rather than a substitute for thinking. This was evident in observed practices where AI use was regulated through ethical guidelines. This is allowing AI for brainstorming while restricting its use in writing actual research components.

Moreover, collaboration emerged as a recurring issue. During classroom group activities, unequal work distribution is often signaled by a one-person output. It was observed that only one dominant student monopolized the physical resources such as the laptop or primary worksheet while others remain spatially sidelined. This resulting atmosphere was one of fragmented effort or one person does all the work. On the other hand, students just glue their individual pieces together at the end without talking to each other.

These findings show the challenge of addressing students' foundational gap, navigating the evolving impact of AI and managing collaboration in the research learning process.

These three themes do not exist in isolation. The "Preparedness Gap" necessitates "Scaffolding" and the intensity of that scaffolding creates the "Professional Burden". These findings provide the structural basis for the essence of this phenomenon, The Burdened Navigator.

Essence

The individual experiences of the ten participants were synthesized to reveal the universal essence of the phenomenon. The essence of teaching research in the SHS context is the experience of The Burdened Navigator.

The essence "The Burdened Navigator" emerged from the synthesis of the identified themes which reflect interconnected dimensions of teachers' lived experiences. Themes on instructional demands, mentoring responsibilities, and institutional expectations revealed a shared condition of navigating complex and competing roles. Through phenomenological reduction, these were distilled into a unifying experience marked by both responsibility and strain. "Burdened" captures the weight of these demands, while "navigator" reflects teachers' active role in managing them. Thus, the essence represents both what teachers experience and how they respond to it.

To teach research is to exist in a state of relational scaffolding. It is the conscious experience of acting as a human bridge between a rigorous academic curriculum and a student population defined by skill gaps. The identity of teachers is transformed from a dispenser of knowledge into a facilitative anchor. Teacher who must provide constant and step-by-step guidance to prevent students from being overwhelmed by the complexity of inquiry.

This essence is characterized by a profound emotional duality. The experience is simultaneously "Herculean" and "Fulfilling." The teacher finds deep meaning in the "Aha" moments of student defense and growth. Yet this meaning is intimately bound to a sense of systemic overextension. To be a research teacher is to feel the weight of multiple roles such as adviser, panelist, and evaluator. These are often performed without prior professional training.

The essence of the phenomenon in the modern era is defined by vigilant adaptation. The teacher must navigate the disruptive force of AI. This recalibrates their mentorship to protect the reliability of critical thinking.

Finally, the essence of teaching research is the selfless extension of the self - intellectually, logistically, and emotionally. This is to sustain a culture of inquiry that rests primarily on the teacher's individual fortitude rather than a solid academic system.

5. Discussion

The thematic analysis of the lived experiences of ten Senior High School research teachers supported by classroom observations reveals a complex and multifaceted phenomenon. The findings indicate that research instruction is no longer a traditional lecture-based subject but has evolved into a high-stakes relational mentorship.

Theme 1: Scaffolding Autonomy

Participants consistently described themselves as guides who support students through the research process rather than lecturers who provide direct answers. This reflects a student-centered and inquiry-based approach where learning is gradually transferred from teacher to student. An approach that promotes autonomy and independent thinking.

It was evidenced that teachers have successfully transitioned into facilitators. They used structured templates and gradual release model as their primary tools to bridge the gap between student confusion and independent inquiry. The use of approaches such as “I do, we do, you do” illustrates a deliberate effort to support skill development while steadily reducing teacher dependence. These practices align with the concept of scaffolding. This is where learners are supported until they can perform tasks independently. This transition from direct content delivery to scaffolding autonomy aligns strongly with Social Constructivist Theory (Vygotsky, 1978). Moreover, participants described themselves not as lecturers but as architects of a learning environment where knowledge is co-constructed. The use of “templates” and “manageable steps” directly corresponds the concept of the Zone of Proximal Development (ZPD). It is where the teacher provides just enough support to allow the student to reach the next level of competence.

However, the findings go beyond traditional classroom scaffolding to describe a “radical accessibility”. The triangulated data show that scaffolding autonomy is not only instructional but also relational. It is where teachers actively balance guidance and independence in developing students’ research capabilities. This confirms existing literature suggesting that research instruction is inherently relational rather than purely instructional. Lacković (2024) explains that relational thinking is important in education because learning happens through connections, shared experiences, and different perspectives. This means that instruction is not just about giving information but about building relationships through the interactions of teachers, students, and their environment.

Unlike standard subjects, research requires a coaching model. The participants demonstrated strong mentorship practices characterized by accessibility and sustained support. They extended their guidance beyond classroom hours through continuous consultation and close monitoring of student progress. This supports previous research suggesting that research supervision is a specialized form of teaching that requires significant emotional labor and sustained availability from supervisors (Han et al., 2025). Even in distance learning, this is reflected in challenges such as limited communication and weak interaction, which affect supervision quality and student research outcomes (Zaheer & Munir, 2020). On the contrary, strict supervision may improve output but reduce independence while balanced communication supports development (Wu et al., 2024). Hence, both the quality and type of supervision are important for student success.

Overall, these highlight the importance of a balanced and holistic approach where successful research outcomes depend on the combined efforts of the supervisor or teacher, the student, and the institution (Yousuf et al., 2019; Mårtensson & Söderström, 2026).

Theme 2: The Professional Burden

This theme stresses that this pedagogical shift comes at a significant personal cost. The triangulation of data confirms a Herculean role where teachers must act as instructors, advisers, and evaluators simultaneously.

A significant finding of this study is the “emotional duality” where teachers feel a “Herculean” burden yet derive deep satisfaction from student success. This mirrors Herzberg’s Two-Factor Theory. Specifically, the achievement acts as a powerful motivator (satisfier) while work conditions and workload act as hygiene factors (dissatisfiers) (Herzberg, 1959). The participants’ experiences suggest that the intrinsic rewards of teaching research are high. However, the extrinsic conditions such as handling “six sections” and acting as “adviser and panelist” simultaneously are reaching a breaking point.

The dual nature of teaching research reflects the emotional complexity of the profession. While teachers experience stress and workload pressures, they also derive satisfaction from students’ achievements. This aligns with literature on teacher motivation which emphasizes the intrinsic rewards. Such sense of purpose and student success contribute to professional fulfillment and sustained engagement (Ryan & Deci, 2020; de Vries & Gonzales-Wong, 2025). Moreover, teachers’ intrinsic motivation has been shown to positively influence student outcomes and reinforce meaningful teacher–student relationships (Zou et al., 2023).

This multiplicity of roles points to a systemic issue in SHS implementation. In this study, participants explicitly linked their overextension to a reduction in efficiency. This suggests a critical need

for the institutional support such as dedicated research department or reduced teaching loads. Recent studies show that increased teacher workload negatively affects performance and instructional quality (Gan, 2025), while also influencing student learning outcomes (Fasco et al., 2024). In addition, workload is often driven by systemic demands that require teachers to perform multiple roles beyond teaching (EDCOM II, 2025). These pressures can lead to stress and reduced effectiveness which emphasize the need for stronger institutional support (de Vries & Gonzales-Wong, 2025).

Moreover, research supervisors need strong emotion regulation skills to manage challenges and provide support in research supervision (Wollast et al., 2023). This reflects the broader view that emotion and cognition are closely linked in teaching and learning (Chen & Cheng, 2022). These demands become more significant when teachers take on multiple roles which contributes to their professional burden and structural overextension. Therefore, the multiplicity of roles contributes to teacher burnout and reduced efficiency. This signals systemic issues in workload distribution and highlights the need for institutional support. The findings suggest that research teaching requires structural adjustments such as reduced teaching loads or specialized roles. Furthermore, the schools must invest in professional development, curriculum resources, and organizational structures to support both teachers and students.

Theme 3: The Preparedness Gap, AI and Collaboration

This theme identifies the external struggles of the experience. The deficits in student literacy combined with the disruptive force of AI and collaboration difficulties require teachers to maintain a state of constant vigilance and adaptation. This is to further protect the integrity and quality of the research process.

The participants' concerns regarding "low reading and writing proficiency" corroborate findings by Matos et al., (2023). They noted that research process involves skills which are often unfamiliar and challenging for beginner student-researchers. While students face various challenges in research, these can be addressed through proper guidance and support from teachers and mentors (Education & Villarta, 2024; Ibrahim, 2024).

Participants consistently noted that students enter research classes with varying levels of competence. This makes it difficult to implement uniform instruction. Hence, the presence of skill gaps suggests that research instruction in senior high school must incorporate remediation and differentiated instruction. This uneven readiness requires teachers to spend significant time addressing basic academic skills before engaging in more advanced research tasks.

The emergence of AI as a "shortcut" adds a new layer to this challenge. Studies show that students can use AI systems such as ChatGPT and other platforms to support collaborative learning, improve understanding of complex topics, and enhance project development (Perifanou & Ecomides, 2025). However, the participants in this study view it as an "integrity risk" that "hinders critical thinking." Certainly, teachers expressed concern that AI is often used as a substitute for thinking rather than a support tool. Instead of enhancing learning, it can reduce students' engagement in critical analysis and independent reasoning. As a result, teachers are not only responsible for teaching research skills but also for guiding responsible AI use and monitoring academic integrity. This adds another layer of complexity to their instructional role.

AI is seen as both a learning support tool and a potential academic risk, depending on how it is used and perceived by students. The findings with AI highlight the need for clear policies and instruction on ethical AI use. These findings also imply that research instruction must move away from output-based grading (which AI can easily replicate) toward process-based assessment. This is where the teacher monitors the "step-by-step" progress rather than just the final paper. Consequently, AI improves performance, but its effectiveness depends on task demands and users' interaction and metacognitive skills (Przegalinska, et al., 2025; Sidra & Mason, 2026).

In addition, collaborative learning presents its own challenges particularly in group accountability and participation. Unequal contribution, delayed outputs, and interpersonal conflicts among group members were frequently reported. These issues often require teachers to intervene directly to maintain fairness and productivity within groups. Support from teachers, mentors, and peers, along with activities such as research critiques, seminars, and defenses, helps improve student research outputs. However,

challenges in group dynamics particularly unequal participation and coordination issues can hinder the research process (Friaies, 2019; Bernal, 2021). Therefore, collaborative learning is essential in research, but it requires effective management. The findings suggest the need for clear group structures, accountability mechanisms, and teacher intervention strategies.

Collectively, the preparedness gap, AI reliance, and collaboration difficulties create a complex teaching environment where educators must simultaneously remediate skills, regulate technology use, and manage group dynamics to ensure meaningful research learning.

Consequently, the three emergent themes converge toward the essence of “The Burdened Navigator”. This reflects the lived reality of teachers who continuously navigate between facilitation, emotional strain, and systemic demands in teaching research. From a phenomenological perspective, this essence highlights teaching as a dynamic process of meaning-making. In which teachers actively interpret, respond to, and adapt within complex educational conditions. The findings position it as an embodied and relational experience shaped by constant negotiation of competing responsibilities. In relation to teacher identity, the study extends existing frameworks by illustrating how identity is not fixed but continuously reconstructed through the interplay of mentorship, evaluation, and institutional expectations. Teachers do not merely enact predefined roles. Instead, they actively construct their professional identity while managing instructional burden, emotional labor, and contextual constraints. Thus, the study contributes to a deeper understanding of both phenomenological teaching experience and teacher identity formation. This is by showing how meaning, agency, and constraint coexist in the lived practice of research instruction.

6. Conclusion

Based on the findings and discussion of this study, conclusions are drawn from the lived experiences of SHS research teachers. First, teachers have successfully transitioned from traditional instructors to facilitators and mentors. This shift is not simply a pedagogical preference but a necessary response to the complex and inquiry-based nature of research. However, this expanded role demands a high level of accessibility. This often extends beyond formal working hours which can blur professional boundaries and increase the risk of teacher burnout.

Furthermore, research instruction in the SHS context cannot rely on independent inquiry alone. Due to significant gaps in students’ research skills, structured scaffolding and a gradual release of responsibility are essential in guiding students toward successful completion. The gap between curriculum expectations and student readiness becomes too wide to bridge effectively without these strategies.

In addition, the current institutional model of research instruction where a single teacher assumes multiple roles as instructor, adviser, and panelist across several sections is unsustainable. The level of effort required from teachers highlights that the success of SHS research programs often depends more on individual teacher resilience than on an efficient and supportive system.

Finally, the emergence of AI has transformed the nature of research challenges. Instead of focusing primarily on information gathering, the emphasis has shifted toward validating ideas and ensuring originality. This has created an integrity concern as AI can be used as a shortcut for critical thinking. As a result, there is a need to rethink how research is taught and assessed in order to address these evolving challenges.

Recommendations

To improve the quality of research instruction and support the well-being of teachers, the following evidence-based recommendations are proposed:

For School Administrators and Policy Makers

- Establishment of Research Support Structures: Aligned with Professional Burden which highlights teachers’ role overload, schools may consider establishing a research support system such as a designated Research Coordinator or small research committee. While a full research department may be

institutionally challenging, this incremental structure can help distribute mentoring, monitoring, and evaluation tasks more effectively.

- **Workload Credit for Mentorship:** In response to teachers' experiences of heavy mentoring demands, mentoring research outputs may be formally recognized as part of teaching load. Schools may adopt a conversion system where consultation hours, paper checking, and panel responsibilities are equated to teaching units to better reflect actual workload.

- **Standardized Research Instructional Materials:** Based on Preparedness Gap which revealed inconsistencies in student readiness and instructional guidance, schools should develop standardized Research Manuals or SOP-based templates. These may be created by research coordinators or curriculum committees and implemented through department-wide orientation to ensure consistency in rubrics, formatting, and research processes.

For Research Teachers (Pedagogy):

- **Process-Based Assessment:** In line with AI and Integrity Concerns, assessment should prioritize the research process rather than only the final output. Teachers may integrate draft submissions, research logs, and progress checkpoints to ensure authenticity, encourage critical thinking, and minimize overreliance on AI-generated outputs.

- **Differentiated Remediation Strategies:** Reflecting Preparedness Gap, teachers may implement a structured initial remediation phase at the start of Practical Research. This may include focused workshops on academic writing, citation, and basic research skills before students proceed to full research development.

For Future Researchers:

- **Quantitative Correlational Studies:** Building on Professional Burden, future studies may examine the relationship between teacher workload (e.g., number of sections or advisees handled) and student research performance to provide empirical support for workload policy reforms.

- **AI-Integrated Research Instruction Studies:** In relation to AI and Collaboration, future action research may explore structured integration of AI tools in research instruction which focuses on whether guided ethical use enhances or hinders students' critical thinking and research competence.

- **Comparative Contextual Studies:** Given the underexplored private school context identified in this study, future research may compare public and private Senior High School research instruction to examine differences in workload structures, mentoring practices, and student preparedness.

References

- Adedoyin, O. B., & Soykan, E. (2020). COVID-19 pandemic and online learning: The challenges and opportunities. *Interactive Learning Environments*, 1–13. <https://doi.org/10.1080/10494820.2020.1813180>
- Alcazaren, H. K., Barandino, E., Narvacan, C., & Campoamor-Olegario, L. (2022). Investigating Filipino school teachers' engagements with research: A bioecological systems case study. *Issues in Educational Research*, 32(2), 345–362. <https://www.iier.org.au/iier32/alcazaren.pdf>
- Aldevera, M., Alentoos, M., & Gantuangco, M. S. J. R. (2019). Teachers' perspectives on the reading and writing subject of the Senior High School curriculum: A SWOT analysis. *International Journal of Education and Research*, 7(6), 273–285. <https://www.ijern.com/journal/2019/June-2019/27.pdf>
- Alfieri, L., Brooks, P. J., Aldrich, N. J., & Tenenbaum, H. R. (2011). Does discovery-based instruction enhance learning? *Journal of Educational Psychology*, 103(1), 1–18.
- Amiruddin, M., Sari, D. K., & Hidayat, R. (2023). Student-centered curriculum design in Indonesian secondary schools. *SAGE Open*, 13(1), 1–12. <https://doi.org/10.1177/21582440231214375>
- Arifin, Z., Sukarmin, S., Saputro, S., & Kamari, A. (2025). The effect of inquiry-based learning on students' critical thinking skills in science education: A systematic review and meta-analysis. *EURASIA Journal of Mathematics, Science and Technology Education*, 21(3), Article em2592. <https://doi.org/10.29333/ejmste/15988>

- Aydos, E. H. (2025). Art in early childhood period: Experiences and effects. *Journal of Theoretical Educational Science*, 18(2), 302–321.
- Bacus, R. C., & Alda, R. C. (2022). Senior high school teaching: A phenomenological inquiry. *Malaysian Journal of Learning & Instruction*, 19(1), 243–276. <https://doi.org/10.32890/mjli2022.19.1.9>
- Bangalan, R., & Hipona, J. (2020). Senior high students' attitude and barriers in conducting research: A platform to enhance scientific pedagogical learning. *Cosmos: An International Journal of Arts and Higher Education*, 9(1), 1–6. <https://www.researchgate.net/publication/345900840>
- Bastida, E. J. L., & Saysi, J. G. (2023). Factors contributing to research writing apprehension among senior high school students. *American Journal of Educational Research*, 11(6), 421–429. <https://doi.org/10.12691/education-11-6-11>
- Belo, R. A. O. (2021). Effects of inquiry-based learning on the performance of learners: A literature review. *Global Scientific Journal*, 9(7), 1–15. https://www.globalscientificjournal.com/researchpaper/Effects_of_Inquiry_based_Learning_on_the_Performance_of_the_Learners_A_Literature_Review.pdf
- Bernal, H. (2021). Teaching Practical Research for Senior High School: An in-depth study. *Qubahan Academic Journal*. <https://doi.org/10.48161/ISSN.2709-8206>
- Biswas, S. (2023). Inquiry-based learning as an adaptive signature pedagogy in international studies. *International Studies Perspectives*, 25(3), 308–324. <https://doi.org/10.1093/isp/ekad008>
- Bond, M. (2021). Schools and emergency remote education during the COVID-19 pandemic: A living rapid systematic review. *Asian Journal of Distance Education*, 16(2), 191–218. <https://doi.org/10.5281/zenodo.4425683>
- Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to CoronaVirus pandemic. *Asian Journal of Distance Education*, 15(1), 1–6. <https://doi.org/10.5281/zenodo.3778083>
- Branzuela, R., Ayro, J., & Cruz-Vidal, M. (2023). Teaching outside the box: Senior High School teaching experiences of non-specialists in research subjects. *Asian Journal of Educational Research and Policy*, 5(1), 45–60. <https://ejournals.ph/article.php?id=19961>
- Campbell, J., Smith, D., & Brooker, R. (2021). Graduate learning at academic conferences: Rubric-based evaluation and feedback. *Studies in Graduate and Postdoctoral Education*, 12(1), 45–62. <https://doi.org/10.1108/SGPE-08-2020-0061>
- Cardona, M. (2020). The enablers and outcomes of research productivity among junior high school mathematics teachers: A structural model. *EURASIA Journal of Mathematics, Science and Technology Education*, 16(5), 1–12. <https://doi.org/10.29333/ejmste/8563>
- Cardona, R. A. (2020). Teachers' perceptions on the integration of research in basic education. *International Journal of Educational Policy Research and Review*, 7(3), 89–96. <https://doi.org/10.15739/IJEPRR.20.010>
- Carnell, E., & Fung, D. (2017). Developing a research-based curriculum in higher education. UCL IOE Press. <https://doi.org/10.2307/j.ctt1xhr542>
- Cepillo, J. C. (2024). Minds on manuscripts: Analyzing the research writing competencies of SHS students. *International Journal of Innovative Science and Research Technology*, 9(9). <https://ijisrt.com/assets/upload/files/IJISRT24SEP7451.pdf>
- Chen, J., & Cheng, T. (2022). Review of research on teacher emotion during 1985–2019: A descriptive quantitative analysis of knowledge production trends. *European Journal of Psychology of Education*, 37(2), 417–438.
- Colegio de San Juan de Letran. (2018). Student research manual. <https://research-manila.lettran.edu.ph/downloadfile/12>
- Combo, J. E. A., & Ramos, K. A. N. (2023). Analyzing the role of teachers' mentoring in improving senior high school students' research competency. *United International Journal for Research & Technology*, 4(11), 42–53. <https://www.researchgate.net/publication/374194593>
- Constantinou, C. P., Tsivitanidou, O. Z., & Rybska, E. (2018). What is inquiry-based science teaching and learning? *Educational Research Review*, 25, 120–137.

- Cross-disciplinary analysis of modern Chinese classroom interaction discourse patterns: An empirical study grounded in an experienced Chinese teacher. (2025). *Asian-Pacific Journal of Second and Foreign Language Education*, 10(1), 20. <https://doi.org/10.1186/s40862-025-00323-2>
- Cuy, N. A., & Salinas, E. M. (2019). Aspiration and readiness of Filipino senior high school students in pursuing college degree. *Open Journal of Social Sciences*, 7(5), 143–152. <https://doi.org/10.4236/jss.2019.75012>
- David, A. P., Reyes, Z. Q., Miranda, P. A., Nalipay, M. J. N., Ancho, I. V., & Roxas, M. M. (2020). Graduate teacher education in the Philippines: Observations and prospects. *The Normal Lights*, 14(2), 248–271.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>
- Engelland, C. (2020). *Phenomenology*. MIT Press.
- Falchikov, N., & Goldfinch, J. (2000). Student peer assessment in higher education: A meta-analysis comparing peer and teacher marks. *Review of Educational Research*, 70(3), 287–322. <https://doi.org/10.3102/00346543070003287>
- Friaies, W. (2019). Beginners’ learning experiences in qualitative research: Inputs for curriculum enhancement of Senior High School in Practical Research. *JPAIR Institutional Research*, 13(1). <https://doi.org/10.7719/IRJ.V13I1.781>
- Gallos, F. L. (2017). Research capability of senior high school students: Basis for enhancement program. *International Journal of Advanced Research in Management and Social Sciences*, 6(11), 1–15.
- Gholam, A. (2019). Inquiry-based learning: Student teachers’ challenges and perceptions. *International Journal of Teaching and Learning in Higher Education*, 31(1), 1–10.
- Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Duquesne University Press.
- Gumarang, B., Jr., Mallannao, R., & Gumarang, B. (2021). Colaizzi’s methods in descriptive phenomenology: Basis of a Filipino novice researcher. *International Journal of Multidisciplinary: Applied Business and Education Research*, 2(10), 928–933. <https://doi.org/10.11594/ijmaber.02.10.10>
- Hipona, J. B. (2020). Senior high students’ attitude and barriers in conducting a research. *Cosmos Journal of Art & Higher Education*, 9(2), 1–10. <https://cosmosjournals.com/wp-content/uploads/2021/05/CAHE-JD201-Jocelyn-B.-Hipona.pdf>
- Husserl, E. (2012). *Ideas: General introduction to pure phenomenology*. Routledge.
- Jackson, T. (2025). Exploring teachers’ lived experiences of fostering curiosity in the mathematics classroom (Publication No. 31999501) [Doctoral dissertation]. ProQuest Dissertations & Theses Global.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- Llego, M. A. (2021). Inquiry-based learning: What it is and why you should use it. TeacherPH. <https://www.teacherph.com/inquiry-based-learning/>
- Magno, C. (2023). The process of research mentoring. SlideShare. <https://www.slideshare.net/slideshow/the-process-of-research-mentoring/230797163>
- McGowan, S. (2016, January 21). Connected curriculum at the University College of London. Center for Engaged Learning. <https://www.centerforengagedlearning.org/connected-curriculum-at-the-university-college-of-london/>
- Mohamed, A. N. (2017). The effectiveness of peer/self-assessment approach in urban planning studio-based academic education. *American Journal of Educational Research*, 5(6), 588–605. <https://doi.org/10.12691/education-5-6-1>
- Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, 81(3), 376–407. <https://doi.org/10.3102/0034654311413609>

- Organization for Economic Co-operation and Development. (2022). Why does the Sustainable Development Goal on Education (SDG 4) matter for OECD countries? OECD Publishing. https://www.oecd.org/en/publications/why-does-the-sustainable-development-goal-on-education-sdg-4-matter-for-oecd-countries_cdc2482b-en.html
- Paurillo, P. M. (2019). Research writing ability of senior high school students as perceived by teachers at sampled schools in Quezon City. *PEOPLE: International Journal of Social Sciences*, 4(3), 1788–1800. <https://doi.org/10.20319/pijss.2019.43.17881800>
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Schutz, P. A., & Zembylas, M. (Eds.). (2009). *Advances in teacher emotion research: The impact on teachers' lives*. Springer. <https://doi.org/10.1007/978-1-4419-0564-2>
- SEAMEO. (2020). *Strategic plan 2021–2030: Advancing education in Southeast Asia*. SEAMEO Secretariat. https://www.seameo.org/Main_programme/Strategic_Plan_2021-2030.pdf
- Smit, B., & Onwuegbuzie, A. J. (2018). Observations in qualitative inquiry: When what you see is not what you see. *International Journal of Qualitative Methods*, 17(1), 1–3. <https://doi.org/10.1177/1609406918816766>
- Tavakol, M., & Sandars, J. (2025). Twelve tips for using phenomenology as a qualitative research approach in health professions education. *Medical Teacher*, 47(9), 1441–1446. <https://doi.org/10.1080/0142159X.2025.2478871>
- Toquero, C. M. D. (2020). Challenges and opportunities for higher education amid the COVID-19 pandemic: The Philippine context. *Pedagogical Research*, 5(4), Article em0063. <https://doi.org/10.29333/pr/7947>
- Ulla, M. B. (2021). Teacher research in Philippine higher education: Challenges and prospects. *Issues in Educational Research*, 31(2), 576–591. <https://ier.org.au/ier31/ulla.pdf>
- Ulla, M. B., Barrera, K. I. B., & Acompañado, M. M. (2017). Philippine classroom teachers as researchers: Teachers' perceptions, motivations, and challenges. *Australian Journal of Teacher Education*, 42(11), 1–14. <https://doi.org/10.14221/ajte.2017v42n11.4>
- UNESCO. (2022). *Reimagining our futures together: A new social contract for education*. UNESCO Publishing.
- van Manen, M. (2016). *Researching lived experience: Human science for an action-sensitive pedagogy* (2nd ed.). Routledge.
- Vygotsky, L. S. (1978). *Mind in society*. Harvard University Press.
- Wale, B. D., & Bogale, Y. N. (2021). Using inquiry-based writing instruction to develop students' academic writing skills. *Asian-Pacific Journal of Second and Foreign Language Education*, 6(4). <https://doi.org/10.1186/s40862-020-00108-9>
- Wiliam, D. (2011). *Embedded formative assessment*. Solution Tree Press.

- Wollast, R., Aelenei, C., Chevalère, J., Van der Linden, N., Galand, B., Azzi, A., Frenay, M., & Klein, O. (2023). Facing the dropout crisis among PhD candidates: The role of supervisor support in emotional well-being and intended doctoral persistence among men and women. *Studies in Higher Education*, 48(6), 813–828.
- Wu, S., Oubibi, M., & Bao, K. (2024). How supervisors affect students' academic gains and research ability: An investigation through a qualitative study. *Heliyon*, 10(10), Article e31079. <https://doi.org/10.1016/j.heliyon.2024.e31079>
- Yousuf, R., Salam, M. A., Islam, M. S., & Salam, A. (2019). Research supervision: Issues and perspectives for its success. *International Medical Journal*, 26, 335–337.
- Zaheer, M., & Munir, S. (2020). Research supervision in distance learning: Issues and challenges. *Asian Association of Open Universities Journal*, 15(1), 131–143. <https://doi.org/10.1108/AAOUJ-01-2020-0003>
- Zhao, Q. (2022). On the role of teachers' professional identity and well-being in their professional development. *Frontiers in Psychology*, 13, Article 913708. <https://doi.org/10.3389/fpsyg.2022.913708>

Bridging Police and Community Perceptions on Crime Prevention Strategies in Dagupan City, Philippines

Danschiel Genre Dean Ramos

Pangasinan State University, Binmaley Campus, Pangasinan, Philippines

Email: dgdramos_bnly000010@psu.edu.ph

Abstract

This study assessed the implementation of crime prevention strategies in Dagupan City, Philippines, by comparing the perceptions of law enforcers and community stakeholders. It focused on five major strategies: Police Integrated Patrol System, Barangay Peacekeeping Operations, Anti-Criminality Operations, Community and Public Safety Programs, and School Safety Programs. Using a descriptive research design, the study gathered data from active police officers involved in strategy implementation and stakeholders who directly received or observed these public safety interventions. A validated survey questionnaire was used, and the data were analyzed through descriptive and inferential statistics. Findings showed that both law enforcers and stakeholders perceived the overall implementation of crime prevention strategies to a very great extent. However, law enforcers consistently gave higher ratings than stakeholders across the assessed strategies. Significant differences were found in several strategy areas, particularly in anti-criminality operations and school safety programs, indicating gaps between implementation and community visibility or experience. The shortage of personnel emerged as the most common implementation-related problem, while the absence of information dissemination was the least encountered. The study highlights the need to strengthen police-community communication, improve public awareness of crime prevention programs, increase personnel and resource support, and establish better monitoring mechanisms. These findings contribute to local public safety governance by showing that effective crime prevention requires not only implementation by law enforcement agencies but also recognition, understanding, and participation from the community.

Keywords: crime prevention; police-community relations; public safety governance; stakeholder perception; Dagupan City

1. Introduction

Crime prevention is a core function of public safety governance. Its purpose is to reduce crime, disorder, victimization, and fear before harm occurs. However, crime prevention is not achieved by police deployment alone. It also depends on whether the community sees the strategy, understands its purpose, trusts the people implementing it, and participates in sustaining it. In this sense, crime prevention is both an operational task and a shared social process.

Recent studies show that trust and participation are central to effective crime prevention. Community-oriented policing practices are linked with public trust, while community participation strengthens local crime prevention when citizens are treated as partners rather than passive recipients of police services (Khan, 2022; Malone and Dammert, 2020). Crime prevention is also increasingly viewed as a co-produced process, where police and citizens share responsibility for public safety (Mangai et al., 2023). These studies suggest that the success of crime prevention should not be measured only by what law enforcement agencies implement, but also by how communities perceive and experience those efforts.

This distinction is important because implementation and perception do not always match. A strategy may be regularly conducted by the police, but it may still be weakly recognized by the public if it lacks visibility, communication, trust, or direct community engagement. Public safety research has shown that different stakeholders may evaluate the same intervention differently, especially when implementers and community members occupy different positions in the program experience (George and Twyford, 2021; Jeong et al., 2023). This makes perception gaps an important concern in evaluating crime prevention strategies.

In the Philippine local policing context, the Philippine National Police implements several crime prevention strategies that combine police visibility, enforcement operations, barangay-based peacekeeping, public safety programs, and school-based interventions. These strategies are intended to maintain peace and order, improve public safety, and strengthen police-community partnership. Yet their implementation cannot be fully understood from the perspective of law enforcers alone. Community stakeholders, as recipients and observers of these strategies, provide an essential view of whether these programs are visible, understood, and experienced at the local level.

Dagupan City, Philippines provides a relevant urban case for examining this issue. As a commercial and urban center in Pangasinan, the city requires sustained crime prevention efforts that respond to different sectors, including local government units, business owners, educational institutions, youth, and senior citizens. Comparing the perceptions of law enforcers and stakeholders in this setting can show whether crime prevention strategies are not only implemented but also recognized by the communities they are intended to serve.

This study examined the implementation of crime prevention strategies in Dagupan City by comparing the perceptions of law enforcers and community stakeholders. It focused on five strategies: Police Integrated Patrol System, Barangay Peacekeeping Operations, Anti-Criminality Operations, Community and Public Safety Programs, and School Safety Programs. By identifying areas of agreement, significant differences, and implementation-related problems, the study aimed to generate evidence-based measures for strengthening local crime prevention strategy implementation.

2. Objectives

This study aimed to examine the implementation of crime prevention strategies in Dagupan City, Philippines, by comparing the perceptions of law enforcers and community stakeholders. Specifically, it sought to:

1. Determine the perceived extent of implementation of the crime prevention strategies undertaken by the Philippine National Police in Dagupan City along Police Integrated Patrol System, Barangay Peacekeeping Operations, Anti-Criminality Operations, Community and Public Safety Programs, and School Safety Programs;
2. Examine whether a significant difference exists between the perceptions of law enforcers and community stakeholders regarding the implementation of the identified crime prevention strategies;
3. Identify the implementation-related problems encountered in the conduct of crime prevention strategies as perceived by law enforcers and community stakeholders; and
4. Propose evidence-based measures to enhance crime prevention strategy implementation in Dagupan City.

3. Materials and Methods

This study used a descriptive-comparative research design to examine the implementation of crime prevention strategies in Dagupan City, Philippines. This design was appropriate because the study did not only describe the perceived extent of implementation of selected crime prevention strategies, but also compared the perceptions of two respondent groups: law enforcers as implementers and community stakeholders as recipients or observers. Through this approach, the study determined whether the same crime prevention strategies were perceived similarly or differently by those who carried them out and those who experienced or observed them.

Consistent with this comparative focus, the study was conducted in Dagupan City, Pangasinan, Philippines. The city was selected as the study locale because it is an urban and commercial center where various crime prevention strategies are implemented by the Philippine National Police. In line with the objectives of the study, the assessment focused on five crime prevention strategies: Police Integrated Patrol System, Barangay Peacekeeping Operations, Anti-Criminality Operations, Community and Public Safety Programs, and School Safety Programs.

Given the need to compare implementation and community recognition, the respondents were grouped into law enforcers and community stakeholders. The law enforcers were Philippine National

Police personnel assigned in Dagupan City who were involved in the implementation of the identified strategies. On the other hand, the community stakeholders were individuals from sectors that directly receive, observe, or are affected by local public safety interventions. These included representatives from local government units, business owners, the education sector, youth, and senior citizens. The inclusion of both groups allowed the study to examine crime prevention from the side of those who implement the strategies and from the side of those who are expected to recognize, experience, or benefit from them.

To gather comparable data from these two groups, the study used a validated survey questionnaire. The instrument measured the perceived extent of implementation of the five crime prevention strategies and included items on implementation-related problems. These problems covered concerns related to personnel, funding, awareness, communication, training, monitoring, and data management. Since both respondent groups assessed the same major areas, the study was able to compare how law enforcers and stakeholders viewed the same set of crime prevention strategies.

For the measurement of responses, the questionnaire used a four-point rating scale. A rating of 4 indicated a very great extent of implementation, 3 indicated a moderate extent of implementation, 2 indicated a low extent of implementation, and 1 indicated no extent of implementation. The use of the same scale for both law enforcers and stakeholders made it possible to identify whether the strategies were viewed consistently across the two groups.

After the instrument and respondents were identified, permission was secured from the concerned local authorities before data gathering. The survey was then administered to the identified law enforcers and community stakeholders in Dagupan City. After collection, the responses were organized, encoded, and analyzed using descriptive and inferential statistics. Weighted mean was used to determine the perceived extent of implementation of each crime prevention strategy and the level of implementation-related problems. An independent samples t-test was used to determine whether a significant difference existed between the perceptions of law enforcers and community stakeholders at the 0.05 level of significance.

Throughout the conduct of the study, ethical considerations were observed. Participation was voluntary, and all responses were treated with confidentiality. The study reported findings at the group level and did not disclose the identities of individual respondents. This ensured that the perception gap between implementers and stakeholders was examined without compromising the privacy of the participants.

4. Results

4.1 Summary of the Perceived Extent of Implementation of Crime Prevention Strategies

The results showed that both law enforcers and stakeholders perceived the crime prevention strategies in Dagupan City as implemented to a very great extent. As shown in Table 1, law enforcers gave a grand mean of 3.70, while stakeholders gave a lower grand mean of 3.49. Although both ratings fell under the same descriptive equivalent, the difference in mean scores showed that law enforcers consistently rated the implementation of the strategies higher than the stakeholders. This pattern provided the initial indication that implementation, as perceived by the police, was not always experienced or recognized at the same level by the community stakeholders.

Table 1 Summary of the Extent of Implementation of Crime Prevention Strategies in Dagupan City

Crime Prevention Strategy	Law Enforcers OWM	Rank	DE	Stakeholders OWM	Rank	DE
Police Integrated Patrol System	3.75	1	VGE	3.40	5	VGE
Barangay Peacekeeping Operations	3.65	5	VGE	3.51	3	VGE

Anti-Criminality Operations	3.72	3	VGE	3.58	1	VGE
Community and Public Safety Programs	3.67	4	VGE	3.53	2	VGE
School Safety Programs	3.73	2	VGE	3.44	4	VGE
Grand Mean	3.70		VGE	3.49		VGE

Note. OWM = Overall Weighted Mean; DE = Descriptive Equivalent; VGE = Very Great Extent

Among the five strategies, law enforcers rated the Police Integrated Patrol System highest with an overall weighted mean of 3.75. This was followed by School Safety Programs with 3.73 and Anti-Criminality Operations with 3.72. In contrast, stakeholders rated Anti-Criminality Operations highest with an overall weighted mean of 3.58, followed by Community and Public Safety Programs with 3.53 and Barangay Peacekeeping Operations with 3.51.

The lowest-ranked strategies also differed between the two groups. Law enforcers ranked Barangay Peacekeeping Operations lowest with an overall weighted mean of 3.65, while stakeholders ranked Police Integrated Patrol System lowest with an overall weighted mean of 3.40. This contrast showed that the strategy most strongly perceived by law enforcers as implemented was the same strategy least strongly perceived by stakeholders. Although both ratings remained within the “very great extent” category, the difference in ranking supported the need to examine whether the two groups shared the same level of perception regarding the implementation of the strategies.

4.2 Significant Difference in the Perceived Implementation of Police Integrated Patrol System

The t-test results for the Police Integrated Patrol System showed that five out of six indicators had significant differences between the perceptions of law enforcers and stakeholders. As shown in Table 2, significant differences were found in mobile patrols, foot patrols, Motorized Anti-Street Crime Operations, campaign against motorcycle-riding criminals, and field inspections. The only indicator that showed no significant difference was the implementation of checkpoints.

Table 2 T-Test Result on the Implementation of Police Integrated Patrol System

Police Integrated Patrol System	Law Enforcers M	SD	Stakeholders M	SD	t(113)	p
Implementation of checkpoints	3.71	0.454	3.53	0.553	1.78	0.070
Implementation of mobile patrols	3.83	0.375	3.56	0.575	2.73	0.007
Implementation of foot patrols	3.76	0.428	3.25	0.680	4.41	<0.001
Implementation of MASCO	3.81	0.395	3.40	0.659	3.67	<0.001
Campaign against motorcycle-riding criminals	3.71	0.505	3.30	0.698	3.34	0.001
Conduct of field inspections	3.60	0.494	3.34	0.669	2.13	0.036

Note. MASCO = Motorized Anti-Street Crime Operations. Significant at $p < 0.05$.

The largest difference was observed in the implementation of foot patrols, where law enforcers gave a mean rating of 3.76 while stakeholders gave a lower mean rating of 3.25, $t(113) = 4.41$, $p < 0.001$. This was followed by the implementation of MASCO, $t(113) = 3.67$, $p < 0.001$, and the campaign against motorcycle-riding criminals, $t(113) = 3.34$, $p = 0.001$. These results indicated that patrol-related activities were perceived more strongly by law enforcers than by stakeholders. Meanwhile, checkpoints had no significant difference, $t(113) = 1.78$, $p = 0.070$, showing closer alignment between the two groups for this specific activity.

4.3 Significant Difference in the Perceived Implementation of Barangay Peacekeeping Operations

Unlike the other strategies, Barangay Peacekeeping Operations showed no significant difference between the perceptions of law enforcers and stakeholders across all indicators. As presented in Table 3,

all p-values were higher than the 0.05 level of significance. This indicated that both groups had similar perceptions regarding the implementation of barangay-based peacekeeping activities.

The results showed that the perceptions of law enforcers and stakeholders were aligned in relation to barangay peacekeeping activities. The highest mean scores from law enforcers were recorded in the mobilization of community sectors and crime prevention measures for vulnerable sectors, both with a mean of 3.67. Among stakeholders, crisis management, disaster mitigation, search, rescue, and relief operations received the highest mean of 3.55. Since none of the indicators showed significant differences, Barangay Peacekeeping Operations emerged as the strategy with the strongest perception alignment between the two respondent groups.

Table 3 T-Test Result on the Implementation of Barangay Peacekeeping Operations

Barangay Peacekeeping Operations	Law Enforcers M	SD	Stakeholders M	SD	t(113)	p
Crisis management, disaster mitigation, search, rescue, and relief operations	3.64	0.533	3.55	0.554	0.89	0.372
Strengthening and supporting the Barangay Justice System	3.62	0.539	3.47	0.579	1.40	0.164
Mobilization of community sectors for peace, order, and safety	3.67	0.477	3.51	0.580	1.51	0.133
Crime prevention and deterrence measures for vulnerable sectors	3.67	0.477	3.53	0.555	1.29	0.198

Note. Significant at $p < 0.05$.

4.4 Significant Difference in the Perceived Implementation of Anti-Criminality Operations

The t-test results for Anti-Criminality Operations showed significant differences in eight out of nine indicators. As shown in Table 4, only the campaign against prostitution, vagrancy, and child abuse did not show a significant difference. This result indicated that law enforcers and stakeholders generally differed in their perceptions of anti-criminality activities, even though both groups rated the strategy highly in the summary results.

Table 4 T-Test Result on the Implementation of Anti-Criminality Operations

Anti-Criminality Operations	Law Enforcers M	SD	Stakeholders M	SD	t(113)	p
Campaign against illegal drugs	3.98	0.154	3.68	0.468	3.91	<0.001
Campaign against carnapping	3.69	0.468	3.38	0.568	2.97	0.004
Campaign against motorcycle-riding criminals	3.79	0.470	3.47	0.529	3.25	0.002
Campaign against illegal gambling	3.81	0.397	3.49	0.580	3.13	0.002
Campaign against loose firearms	3.71	0.457	3.40	0.595	2.98	0.004
Campaign against cattle rustling	3.57	0.547	3.21	0.726	2.83	0.005
Campaign against prostitution/vagrancy and child abuse	3.64	0.485	3.44	0.577	1.94	0.055
Environmental and natural resources campaign	3.57	0.630	3.29	0.677	2.22	0.028
Campaign against robbery	3.76	0.431	3.52	0.503	2.61	0.010

Note. Significant at $p < 0.05$.

The campaign against illegal drugs received the highest mean rating from both law enforcers and stakeholders, with means of 3.98 and 3.68, respectively. However, the difference between the two groups

was statistically significant, $t(113) = 3.91$, $p < 0.001$. Significant differences were also observed in campaigns against carnapping, motorcycle-riding criminals, illegal gambling, loose firearms, cattle rustling, environmental and natural resource violations, and robbery. The only indicator with no significant difference was the campaign against prostitution, vagrancy, and child abuse, $t(113) = 1.94$, $p = 0.055$. Overall, Anti-Criminality Operations showed one of the widest perception gaps between law enforcers and stakeholders.

4.5 Significant Difference in the Perceived Implementation of Community and Public Safety Programs

The t-test results for Community and Public Safety Programs showed significant differences in three out of four indicators. As shown in Table 5, significant differences were found in field visitation and inspection, Bando Publiko, and K-Pulis Dagupan. The conduct of fire, earthquake, and similar drills was the only indicator with no significant difference.

Table 5 T-Test Result on the Implementation of Community and Public Safety Programs

School Safety Programs	Law Enforcers M	SD	Stakeholders M	SD	t(113)	p
Police Assistance Desk accessible to students, teachers, and the public	3.71	0.457	3.48	0.530	2.40	0.018
Foot patrol and mobile patrol near school vicinities	3.76	0.431	3.41	0.523	3.69	<0.001

Community and Public Safety Programs	Law Enforcers M	SD	Stakeholders M	SD	t(113)	p
Field visitation and inspection	3.69	0.468	3.37	0.656	2.78	0.006
Fire, earthquake, and similar drills	3.48	0.552	3.36	0.609	1.05	0.295
Bando Publiko	3.79	0.415	3.37	0.635	3.80	<0.001
K-Pulis Dagupan	3.74	0.445	3.47	0.603	2.55	0.012

Note. Significant at $p < 0.05$.

The largest difference was observed in Bando Publiko, where law enforcers recorded a mean of 3.79 and stakeholders recorded a mean of 3.37, $t(113) = 3.80$, $p < 0.001$. Field visitation and inspection also showed a significant difference, $t(113) = 2.78$, $p = 0.006$, as well as K-Pulis Dagupan, $t(113) = 2.55$, $p = 0.012$. In contrast, fire, earthquake, and similar drills showed no significant difference, $t(113) = 1.05$, $p = 0.295$. This indicated that disaster-related safety activities were more similarly perceived by both groups, while other community-facing programs showed perception gaps.

4.6 Significant Difference in the Perceived Implementation of School Safety Programs

All indicators under School Safety Programs showed significant differences between the perceptions of law enforcers and stakeholders. As presented in Table 6, significant differences were found in the establishment of Police Assistance Desks, patrols near school vicinities, and student awareness activities on drugs and bullying.

Student awareness on drugs and bullying	3.71	0.457	3.44	0.552	2.74	0.007

Table 6 T-Test Result on the Implementation of School Safety Programs

Note. Significant at $p < 0.05$.

The largest difference was found in the conduct of foot patrol and mobile patrol near school vicinities, where law enforcers recorded a mean of 3.76 and stakeholders recorded a mean of 3.41, $t(113) = 3.69$, $p < 0.001$. Significant differences were also found in the establishment of Police Assistance Desks, $t(113) = 2.40$, $p = 0.018$, and student awareness activities on drugs and bullying, $t(113) = 2.74$, $p = 0.007$. These results showed that school-based safety interventions were perceived more strongly by law enforcers than by stakeholders.

4.7 Implementation-Related Problems in Crime Prevention Strategy Implementation

The study also identified implementation-related problems encountered in the conduct of crime prevention strategies. As shown in Table 7, all listed problems were described as “sometimes encountered.” The highest-ranked problem was shortage of personnel, with an overall weighted mean of 2.24. This was followed by insufficient funding with 2.18, insufficient material or equipment with 2.17, and insufficient training with 2.14.

The results showed that personnel and resource limitations were the most common implementation-related concerns. Both law enforcers and stakeholders ranked shortage of personnel as the highest problem, while insufficient funding and insufficient equipment also ranked among the top concerns. Problems related to monitoring, data management, communication, cooperation, and information dissemination were also reported as sometimes encountered, but these received lower mean scores. The findings showed that the perception gap in crime prevention implementation was accompanied by operational limitations that may affect the visibility, reach, and sustainability of the strategies.

Table 7 Implementation-Related Problems with the Crime Prevention Strategies Undertaken by PNP Dagupan

Implementation-Related Problem	Law Enforcers M	DE	Rank	Stakeholders M	DE	Rank	OW M	DE	Rank
Insufficient funding in the implementation of activities	2.07	SE	4	2.28	SE	1	2.18	SE	2
Shortage of personnel in the implementation of the strategy	2.20	SE	1	2.28	SE	1	2.24	SE	1
Insufficient material/equipment in the implementation of the strategy	2.12	SE	2	2.22	SE	3	2.17	SE	3
Insufficient training pertaining to the implementation of the strategy	2.10	SE	3	2.18	SE	4	2.14	SE	4
No monitoring/evaluation committee/instrument of the strategy	2.06	SE	5	2.15	SE	5	2.10	SE	5
No data management of information collected from implementation	2.03	SE	6	2.07	SE	6	2.05	SE	6

No communication between the PNP and community related to the strategy	2.01	SE	7	2.02	SE	9	2.02	SE	7.5
No cooperation from the public in relation to the strategy	2.00	SE	8	2.04	SE	7	2.02	SE	7.5
No information dissemination about the strategy	1.99	SE	9	2.03	SE	8	2.01	SE	9

Note. OWM = Overall Weighted Mean; DE = Descriptive Equivalent; SE = Sometimes Encountered.

5. Discussion

5.1 High Implementation Was Established, but Community Recognition Was Uneven

The results firmly established that the five crime prevention strategies in Dagupan City were perceived by both law enforcers and stakeholders as implemented to a very great extent. This finding indicates that the Police Integrated Patrol System, Barangay Peacekeeping Operations, Anti-Criminality Operations, Community and Public Safety Programs, and School Safety Programs were actively carried out in the local setting. However, the higher grand mean given by law enforcers compared with stakeholders shows that the two groups did not perceive the implementation with the same intensity.

This finding corroborates recent studies which argue that crime prevention should not be understood only as police activity, but also as a process shaped by community trust, participation, and recognition. Malone and Dammert (2020) found that community-oriented policing practices are associated with public trust, while Khan (2022) emphasized that community participation remains important in crime prevention. Mangai et al. (2023) likewise framed crime prevention as a co-produced process between police and citizens. The present study supports these views because the results showed that implementation was not enough by itself. Although law enforcers perceived strong implementation, stakeholders rated the same strategies lower. This suggests that crime prevention becomes meaningful not only when police conduct activities, but when the community recognizes and experiences those activities as part of public safety.

At the same time, the finding qualifies the assumption that a highly implemented police strategy is automatically visible to the public. The data showed that both groups gave very high ratings, but the difference in their means and rankings indicates an uneven level of recognition. Thus, the issue is not whether crime prevention strategies existed, but whether police implementation and community experience were aligned.

5.2 Patrol and Enforcement Strategies Reflected the Strongest Perception Gaps

The results on the Police Integrated Patrol System showed that five out of six indicators had significant differences between law enforcers and stakeholders. Law enforcers rated mobile patrols, foot patrols, MASCO, campaign against motorcycle-riding criminals, and field inspections higher than stakeholders. The largest difference appeared in foot patrols, where stakeholders gave a much lower mean than law enforcers. This indicates that patrol-based strategies were strongly perceived from the side of implementation, but not equally recognized from the side of community experience.

This finding corroborates George and Twyford (2021), who found that community members may be more skeptical than police and other stakeholders in assessing a public safety intervention. It also relates to Jeong et al. (2023), who found perception differences among public safety actors involved in crime prevention projects. In the present study, the same pattern appeared between police implementers and community stakeholders. Law enforcers may evaluate patrol work based on actual deployment and operational performance, while stakeholders may evaluate it based on direct visibility, frequency of encounter, and perceived presence in their area.

However, the result also adds a more specific insight: not all police visibility activities are perceived in the same way. Checkpoints showed no significant difference between the two groups, while mobile and foot patrol activities showed significant differences. This suggests that fixed and easily observable strategies may create stronger shared perception, while mobile, route-based, or area-specific activities may create uneven recognition. This is a useful contribution because it shows that “visibility” is not a single concept. Some forms of police visibility are more publicly recognizable than others.

Anti-Criminality Operations produced a similar but wider gap. Eight out of nine indicators had significant differences, including campaigns against illegal drugs, carnapping, motorcycle-riding criminals, illegal gambling, loose firearms, cattle rustling, environmental and natural resource violations, and robbery. This supports the finding that enforcement-centered strategies may be highly active from the police perspective, but unevenly experienced by stakeholders. The only indicator with no significant difference was the campaign against prostitution, vagrancy, and child abuse. This exception suggests that some enforcement activities may be more similarly perceived when they are familiar, community-facing, or directly connected to vulnerable sectors. Future qualitative research is needed to confirm the specific reasons for this alignment.

5.3 Barangay Peacekeeping Confirmed the Value of Community-Anchored Structures

Barangay Peacekeeping Operations was the only strategy where all indicators showed no significant difference between law enforcers and stakeholders. This means that both groups shared similar perceptions of crisis management, barangay justice support, sector mobilization, and protection of vulnerable groups. This result is analytically important because it shows that perception gaps are not inevitable in crime prevention implementation.

This finding corroborates Mangai et al. (2023), who described crime prevention as a shared process between police and citizens. It is also consistent with Alehegn et al. (2025), who found that community policing structures and stakeholder training contribute to safety, security, and local crime prevention. In Dagupan City, Barangay Peacekeeping Operations may have produced stronger alignment because it operates through local structures that are closer to residents. Barangay-based mechanisms are more accessible, more familiar, and more directly linked to everyday community life than strategies that are primarily patrol-based or enforcement-centered.

This finding extends prior research by showing that community anchoring may reduce the perception gap between police and stakeholders. While patrol and enforcement strategies showed several significant differences, barangay peacekeeping showed full alignment. This suggests that crime prevention strategies are more likely to be similarly perceived when they are embedded in local governance structures and when community participation is built into the strategy itself.

5.4 Public Safety and School Programs Showed the Need for Sector-Specific Evaluation

The results on Community and Public Safety Programs showed significant differences in field visitation, Bando Publiko, and K-Pulis Dagupan. However, fire, earthquake, and similar drills showed no significant difference. This pattern suggests that public, organized, and participatory activities may be more easily recognized by both law enforcers and stakeholders. Drills are visible, scheduled, and usually experienced by groups in the community. In contrast, field visitation, public advisories, and K-Pulis Dagupan may depend more on location, frequency of contact, and individual exposure.

School Safety Programs showed significant differences in all indicators, including Police Assistance Desks, patrols near school vicinities, and student awareness activities on drugs and bullying. This finding does not necessarily mean that school safety activities were weakly implemented. Rather, it suggests that sector-specific programs may not be equally visible to stakeholders outside the intended sector. This corroborates Almanza et al. (2022), who found varied perceptions of school resource officers among students, teachers, principals, parents, and officers. In the present study, the stakeholder group represented different sectors, not only the education sector. Thus, their lower ratings may reflect differences in exposure to school-based interventions.

This finding qualifies how sector-based crime prevention strategies should be evaluated. If the activity is designed for schools, then its recognition should be assessed more directly among students, teachers, parents, and school administrators. A general stakeholder sample can show broad community perception, but it may not fully capture the experiences of the intended beneficiaries of school-based programs. Future studies should therefore include sector-specific analysis to determine whether the primary target groups of these programs perceive them differently from the wider community.

5.5 Operational Constraints May Help Explain the Perception Gap

The study also found that all implementation-related problems were sometimes encountered. The highest-ranked problem was shortage of personnel, followed by insufficient funding, insufficient materials or equipment, insufficient training, and lack of monitoring and evaluation mechanisms. These findings provide a possible explanation for why implementation was rated higher by law enforcers than by stakeholders.

This explanation is supported by the data but should be treated carefully. The study established that perception gaps existed, and it also established that operational constraints were present. It did not statistically test whether these constraints caused the perception gaps. However, it is reasonable to infer that limited personnel, funding, equipment, training, and monitoring can affect the reach, consistency, and visibility of crime prevention strategies. For example, limited personnel may require the police to concentrate patrols in high-priority locations. Limited equipment may affect mobility and coverage. Weak monitoring mechanisms may also prevent implementers from determining whether the community actually recognizes or understands the activities conducted.

This finding extends the discussion on crime prevention from trust and participation to operational capacity. Community participation is important, but participation cannot be sustained when strategies do not consistently reach the community. Similarly, trust may be difficult to build when the visibility of police programs is uneven. Therefore, the perception gap found in this study may be partly explained by the practical limits of implementation capacity.

5.6 Implications for Crime Prevention Evaluation

The findings challenge a common assumption in local crime prevention: that a strategy is successful once it has been implemented by the police. The results of this study show that implementation and community recognition are related, but they are not the same. A strategy can be operationally active and still be perceived differently by the community.

This has implications for crime prevention evaluation. Police accomplishment reports can establish whether activities were conducted, but they cannot fully determine whether the activities were visible, understood, or experienced by stakeholders. For this reason, crime prevention evaluation should include both implementer-based and community-based measures. Law enforcers can provide evidence on operational implementation, while stakeholders can provide evidence on visibility, recognition, and perceived reach.

The study also suggests that strategies anchored in local community structures may produce stronger perception alignment. Barangay Peacekeeping Operations showed full alignment between law enforcers and stakeholders, while patrol, enforcement, public safety, and school-based programs showed varying degrees of perception gaps. This supports the need to strengthen community-facing mechanisms, communication channels, and feedback systems within crime prevention programs.

Future studies may build on these findings by using interviews, focus group discussions, and sector-specific assessments. These methods can explain why stakeholders recognize some strategies more than others and how location, sector, exposure, and trust shape public perception. Comparative studies across other Philippine cities may also determine whether the police-community perception gap observed in Dagupan City reflects a broader pattern in local crime prevention implementation.

6. Conclusion

This study found that the crime prevention strategies in Dagupan City were perceived by both law enforcers and community stakeholders as implemented to a very great extent. However, the findings also

showed that law enforcers consistently rated the implementation higher than stakeholders. This confirms that the main issue was not the absence of crime prevention activities, but the uneven perception of these activities between police implementers and community recipients.

The results further revealed that significant perception gaps existed in most strategies, particularly in the Police Integrated Patrol System, Anti-Criminality Operations, Community and Public Safety Programs, and School Safety Programs. Barangay Peacekeeping Operations was the only strategy where perceptions between law enforcers and stakeholders were fully aligned. This suggests that crime prevention strategies anchored in barangay-level structures may be more visible and recognizable to community stakeholders.

Implementation-related problems also affected the conduct of crime prevention strategies. Shortage of personnel, insufficient funding, lack of equipment, insufficient training, and weak monitoring and evaluation mechanisms were identified as the major concerns. These limitations may affect the reach, visibility, and consistency of crime prevention activities.

Overall, the study concludes that crime prevention should not be evaluated only through police implementation. It must also consider community recognition, stakeholder experience, and public participation. Strengthening crime prevention in Dagupan City requires clearer communication between the police and the community, stronger monitoring mechanisms, better personnel and resource support, and regular stakeholder feedback.

Future research may build on this study by using interviews or focus group discussions to explain why some strategies are more visible to stakeholders than others. Comparative studies may also be conducted in other Philippine cities to determine whether similar perception gaps exist in local crime prevention implementation.

Acknowledgements

The author acknowledges Dr. Elbert M. Galas, University President of Pangasinan State University, the University Administration, and Pangasinan State University-Binmaley Campus for their continuous support to faculty members in their academic and research endeavors. The author also expresses sincere gratitude to Dr. Salvador G. Samson for his valuable guidance, comments, and assistance in the review and refinement of the paper.

References

- Alehegn, D., Karunakaran, R., & Engida, B. (2025). The role of community policing structures in enhancing safety, security, and local crime prevention in Addis Ababa City Administration. *SN Social Sciences*, 5(10). <https://doi.org/10.1007/s43545-025-01195-6>
- Almanza, M., Mason, M., & Melde, C. (2022). Perceptions of school resource officers: Protectors or prosecutors? *Criminal Justice Review*, 48(3), 318–338. <https://doi.org/10.1177/07340168221113352>
- George, M., & Twyford, J. M. (2021). Providing a safer passage: Perceptions about a neighborhood intervention program for disadvantaged youth. *Journal of Community Psychology*, 49(7), 2838–2852. <https://doi.org/10.1002/jcop.22650>
- Jeong, J., Park, H., Oh, J., & Kwon, Y. (2023). An empirical study on the disparity in CPTED related perception between middle manager and CPO of community safety police service. *Korea CPTED Association*, 14(2), 255–278. <https://doi.org/10.26470/jcssed.2023.14.2.255>
- Khan, M. A. (2022). Examining community participation in crime prevention in rural Peshawar, Pakistan. *Rural Society*, 31(3), 139–154. <https://doi.org/10.1080/10371656.2022.2152165>
- Malone, M. F. T., & Dammert, L. (2020). The police and the public: Policing practices and public trust in Latin America. *Policing & Society*, 31(4), 418–433. <https://doi.org/10.1080/10439463.2020.1744600>
- Mangai, M. S., Pillay, A. C., Masiya, T., & Lubinga, S. (2023). The police and citizens as co-producers of crime prevention in Johannesburg. *Administrative Sciences*, 13(6), 138. <https://doi.org/10.3390/admsci13060138>

Insights Into Students Violating School Rules: Proposed Intervention Strategies for Improvement

Jesusa S. Domantay

College of Criminal Justice Education and Forensics, Holy Angel University

*Email : jdomantay@hau.edu.ph

Abstract

Student misconduct continues to be a major concern in educational institutions because it negatively affects academic performance, student behavior, and the overall learning environment. This study aimed to determine the common misconduct committed by students at Holy Angel University, identify the contributing factors, examine the effects on the learning environment, determine the challenges encountered in implementing intervention programs, and propose strategies to minimize misconduct. The study utilized a quantitative descriptive research design involving respondents composed of personnel, faculty members, guidance counselors, and former members of the Board of Discipline from the Student Services and Affairs and Christian Formation and Social Integration departments. Data were gathered through a survey questionnaire and analyzed descriptive statistics. Results revealed that minor infractions were more prevalent than major infractions. Disruptive family environments, mental health struggles, and academic stress were identified as the leading contributing factors to misconduct. Student misconduct was found to contribute to emotional distress, fear, insecurity, and disruption of the learning environment. Challenges encountered by the institution included stigmatization, lack of coordination, and staffing constraints. Respondents strongly agreed that schools play a vital role in breaking the cycle of misconduct through youth leadership development, restorative justice practices, school-based mental health services, and positive school climate initiatives. The study concluded that comprehensive intervention strategies involving students, families, schools, and communities are necessary to reduce student misconduct and promote positive behavioral development.

Keywords: Student Misconduct; School Discipline; Intervention Strategies; Juvenile Delinquency; Learning Environment

1. Introduction

Educational institutions play a vital role not only in promoting academic excellence but also in shaping the moral, emotional, and social development of students (Mallett, 2016). Schools serve as environments where learners acquire values, discipline, and responsible behavior necessary for becoming productive members of society. However, student misconduct and violations of school rules remain pressing concerns in many educational institutions. Behaviors such as absenteeism, bullying, disrespect, vandalism, substance abuse, and disruptive conduct negatively affect students, teachers, and the overall learning environment.

Holy Angel University recognizes the importance of maintaining a safe and conducive environment for learning. As an educational institution committed to holistic development, the university continuously implements policies and intervention programs aimed at minimizing misconduct among students. Despite these efforts, student infractions continue to occur, indicating the need to examine the root causes and challenges associated with these behaviors.

Student misconduct is influenced by several factors, including family background, peer pressure, socioeconomic status, mental health concerns, academic stress, and exposure to community violence (Chua et al., 2023; Van Hoorn, 2017). It also reveal that misconduct adversely affects academic performance, school climate, emotional well-being, and social relationships among students (Bilag et al., 2020; Hirschfield, 2018). Furthermore, institutions encounter difficulties in implementing intervention strategies due to inadequate coordination, stigmatization, and limited institutional resources.

Objectives

This study aimed to determine the role of Holy Angel University in addressing student misconduct and promoting intervention strategies for improvement. Specifically, the study sought to:

1. Determine the most common misconduct committed by students;
2. Identify the factors contributing to student misconduct;
3. Examine the impact of misconduct on the learning environment;
4. Determine the challenges encountered in implementing intervention initiatives
5. Propose intervention strategies to minimize student misconduct.

2. Materials and Methods

The study utilized a quantitative descriptive research design to examine the factors contributing to student misconduct and the intervention strategies implemented by the institution. The respondents consisted of personnel, faculty members, guidance counselors, and former Board of Discipline members from the Student Services and Affairs and Christian Formation and Social Integration departments of Holy Angel University. Purposive sampling was employed to select participants who had at least three years of experience handling students who violated school rules and regulations. Data were gathered through a structured survey questionnaire adapted from previous related studies on juvenile infractions and misconduct.

The questionnaire consisted of indicators related to factors contributing to misconduct, the impact of misconduct on the learning environment, challenges in implementing intervention programs, and the role of the institution in addressing misconduct. The collected data were analyzed using frequency and percentage distribution to identify common infractions, while weighted mean and standard deviation were utilized to determine the level of agreement of the respondents regarding the identified factors and intervention strategies.

Ethical considerations were observed throughout the study. Participation was voluntary, confidentiality was maintained, and informed consent was secured prior to data collection.

3. Results

The findings revealed that major infractions recorded during the academic year were relatively few, with only seven (7) reported cases across all colleges. The School of Hospitality and Tourism Management recorded the highest number of major infractions.

Table 1. Recorded Major Infraction

School/College	1 st Semester Count	2 nd Semester Count
Engineering and Architecture	1	0
Hospitality and Tourism Management	1	3
Business and accountancy	0	0
Arts and Sciences	0	0
Computing	1	0
Nursing and Allied Medical Sciences	0	0
Criminal Justice Education and Forensics	0	0
Education	1	0
Total	4	3

In contrast, minor infractions were significantly more common, with a total of 486 reported cases. The College of Engineering and Architecture recorded the highest number of minor infractions, followed by the Colleges of Hospitality and Tourism Management and Business and Accountancy.

Table 2. Recorded Minor Infraction

School/College	1st Semester Count	2nd Semester Count
Engineering and Architecture	129	52
Hospitality and Tourism Management	59	27
Business and accountancy	57	18
Arts and Sciences	44	9
Computing	35	6
Nursing and Allied Medical Sciences	20	2
Criminal Justice Education and Forensics	18	9
Education	0	1
Total	362	124

The respondents strongly agreed that several factors contributed to student misconduct, with an overall mean of 3.26. The highest-rated factor was disruptive family environments ($M = 3.46$), followed by mental health struggles ($M = 3.42$) and academic stress ($M = 3.38$). Respondents also agreed that peer pressure, bullying, lack of supervision, and exposure to violence significantly influenced student behavior.

Table 3. Factors Contributing to Legal Infractions and Student Misconduct

Indicators	Mean	Median	SD	Description
Students are heavily influenced by peer pressure.	3.2	3	0.7	Agree
Disruptive family environments contribute to their behavior.	3.46	4	0.646	Strongly Agree
Socioeconomic challenges are linked to delinquent actions.	3.18	3	0.661	Agree
Substance abuse becomes a significant factor.	3.3	3	0.678	Strongly Agree
Mental health struggles play a role in misconduct.	3.42	3.5	0.673	Strongly Agree
Academic stress impacts students negatively.	3.38	3	0.697	Strongly Agree
A lack of positive role models affects behavior.	3.28	3	0.757	Strongly Agree
Exposure to community violence influences actions.	3.24	3	0.797	Agree
Bullying experiences shape behavior patterns.	3.26	3	0.751	Strongly Agree
Cultural influences play a role in shaping student actions.	3.18	3	0.72	Agree
An unsupportive school environment contributes to issues.	3.36	3.5	0.776	Strongly Agree
Access to weapons increases the likelihood of infractions.	3.16	3	0.817	Agree
Poor conflict resolution skills exacerbate situations.	3.32	3	0.683	Strongly Agree
Media influences impact decision-making.	3.24	3	0.687	Agree
A lack of proper supervision affects behavior.	3.22	3	0.864	Agree
Students from lower socioeconomic backgrounds face increased challenges.	3.08	3	0.877	Agree
Overall	3.26	3.12	0.73	Strongly Agree

The respondents agreed that student misconduct negatively affects the learning environment, with an overall mean of 3.21. Emotional distress and trauma among students obtained the highest mean rating

($M = 3.36$), followed by negative effects on peer relationships ($M = 3.32$) and increased fear and insecurity among students ($M = 3.28$).

Table 4. Impact of Infractions and Student Misconduct on the Learning Environment

Indicators	Mean	Median	SD	Description
Academic performance and grades decline.	3.22	3	0.648	Agree
Learning environments become disrupted <u>for</u> other students.	3.18	3	0.748	Agree
Fear and insecurity increase among students.	3.28	3	0.701	Strongly Agree
Peer relationships and social interactions are negatively affected.	3.32	3	0.683	Strongly Agree
Experience emotional distress or trauma.	3.36	3	0.693	Strongly Agree
Aggression and hostility among students increase.	3.16	3	0.71	Agree
Participation in extracurricular activities or school events decreases.	3.08	3	0.695	Agree
Mental health issues like anxiety or depression develop.	3.24	3	0.716	Agree
Students perceive the school as less safe.	3.06	3	0.767	Agree
Tensions and conflicts <u>rise</u> within the school community.	3.16	3	0.738	Agree
The overall school culture and morale are adversely affected.	3.28	3	0.701	Strongly Agree
Overall	3.21	3	0.70	Agree

The study revealed that stigmatization and labeling ($M = 3.24$), lack of coordination ($M = 3.22$), and lack of awareness ($M = 3.16$) were among the primary challenges encountered in implementing intervention programs designed to reduce student misconduct.

Table 5. Challenges in implementing initiatives to halt infractions and student misconduct

Indicators	Mean	Median	SD	Description
Inadequate Funds	2.9	3	0.814	Disagree
Lack of Awareness	3.16	3	0.681	Agree
Lack of Coordination	3.22	3	0.679	Agree
Staffing Constraints	3.08	3	0.695	Agree
Legal and Ethical Concerns	3.06	3	0.712	Agree
Cultural Sensitivity	3	3	0.67	Agree
Student Resistance	3.04	3	0.755	Agree
Environmental Factors	3.16	3	0.792	Agree
Inadequate Data and Evaluation	3.02	3	0.685	Agree
Stigmatization and Labeling	3.24	3	0.687	Agree
Overall	3.08	3	0.71	Agree

Respondents strongly agreed that Holy Angel University plays a vital role in addressing student misconduct, with an overall mean of 3.38. Youth leadership development obtained the highest mean rating ($M = 3.46$), followed by promoting a positive school climate ($M = 3.44$), fostering positive relationships ($M = 3.40$), and implementing prevention programs ($M = 3.38$).

Table 6. Roles of Holy Angel University play in actively breaking the cycle of delinquent behaviors.

Indicators	Mean	Median	SD	Description
Promoting Positive School Climate	3.44	3.5	0.644	Strongly Agree
Implementing Prevention Programs	3.38	3	0.725	Strongly Agree
Providing Early Intervention Services	3.36	3	0.722	Strongly Agree
Implementing Restorative Justice Practices	3.36	3	0.663	Strongly Agree
Fostering Positive Relationships	3.4	3	0.639	Strongly Agree
Promoting Pro-Social Activities	3.32	3	0.653	Strongly Agree
Empowering Students	3.36	3	0.663	Strongly Agree
Evaluation and Continuous Improvement	3.38	3	0.635	Strongly Agree
School-Based Mental Health Services	3.38	3	0.725	Strongly Agree
Youth Leadership Development	3.46	4	0.646	Strongly Agree
Overall	3.38	3.15	0.67	Strongly Agree

4. Discussion

The findings indicate that student misconduct remains a significant concern in educational institutions despite existing disciplinary policies and intervention programs. Minor infractions were more prevalent than major offenses, suggesting that everyday behavioral issues continue to challenge school administrators and faculty members.

Family-related factors emerged as the strongest contributors to student misconduct, which supports the findings of Chua et al. (2023) emphasizing the influence of family dynamics on juvenile behavior. Family background remains one of the strongest influences on student behavior (Law Essays and Papers, 2022). This supports previous studies emphasizing that unstable family environments, lack of parental guidance, and poor supervision increase the likelihood of delinquent behavior among students. Mental health struggles and academic stress also significantly contributed to misconduct, highlighting the importance of providing accessible counseling services and mental health programs within schools (Bilag et al., 2020).

The findings further revealed that misconduct negatively affects the learning environment by creating fear, emotional distress, and disruptions in classroom interactions, consistent with the study of Izehiuwa et al. (2022). Academic stress and mental health challenges were identified as major contributors to student misconduct (Korohod, 2025). Mental health concerns, including anxiety, depression, and emotional instability, also influence student behavior (Souza, 2024). These results suggest that misconduct not only impacts the offending students but also affects the well-being and academic experiences of other learners.

Challenges encountered in implementing intervention strategies include stigmatization, inadequate coordination among stakeholders, and limited awareness of intervention programs. These barriers may reduce the effectiveness of school initiatives aimed at promoting discipline and positive behavior.

The study also highlights the critical role of educational institutions in breaking the cycle of misconduct. Programs focused on youth leadership, restorative justice, positive school climate, and mental health support were perceived as effective approaches in minimizing student infractions (Gandy, 2016; Wekesa, 2020). These findings support the importance of adopting comprehensive and collaborative intervention strategies involving students, teachers, parents, and the wider community.

5. Conclusion

The study concluded that student misconduct is influenced by multiple social, emotional, family, and school-related factors. Minor infractions remain common among students and significantly affect the learning environment through emotional distress, fear, and disruption.

Disruptive family environments, academic stress, mental health concerns, and peer influence were identified as major contributing factors to student misconduct. Although schools continue to implement intervention programs, several challenges such as stigmatization, lack of coordination, and insufficient awareness hinder the effectiveness of these initiatives.

Holy Angel University plays a vital role in reducing student misconduct through preventive and intervention-based approaches, including youth leadership development, restorative justice practices, school-based mental health services, and the promotion of a positive school climate.

The study recommends strengthening collaboration among schools, families, and communities to develop sustainable intervention programs that support student discipline, emotional well-being, and positive behavioral development (Henry et al., 2020; Teasley, 2016).

Acknowledgements

The researchers would like to express their sincere gratitude to Holy Angel University, for its invaluable administrative assistance, resource support, and thorough review of the feasibility and relevance of this study. The guidance and support provided by the office greatly contributed to the successful completion of the research. The support of the faculty, staff, and students played a significant role in facilitating the smooth conduct of the study. Above all, the researchers give glory and honor to God, the source of wisdom, strength, and perseverance, whose guidance made this endeavor possible. *Laus Deo Semper* "Praise to God Always."

References

- Bilag, S. B., Cadena, C. B., Capdos, M. J. M., Chalmas, C. S., Dawigwey, J. S., Gimarangan, J. I., ... & Vicente, J. B. (2020). Case study on cyber-bullying among criminal justice and public safety students of university of Baguio. *International Journal of Advanced Research in Management and Social Sciences*, 9(1), 158-189.
- Chua, R. M. B., Cañelas, R. Q., Grefaldo, E. H., Guan, F. M. R. (2023). Roles of parents and barangay Batasan Hills, Quezon City in minimizing juvenile delinquency. (Undergraduate Thesis) Metro Manila College, Quezon City, Philippines/
- Gandy, C., & Schultz, J. L. (2016). *Increasing School Attendance for K-8 Students: A Review of Research Examining the Effectiveness of Truancy Prevention Programs*. Saint Paul, Minnesota: Wilder Research.
- Henry, B., Caspi, A., Moffitt, T. E., & Silva, P. A. (2020). "Temperamental and familial predictors of violent and nonviolent criminal convictions: Age 3 to age 18." *Developmental Psychology* 32(4): 614-623.

- Hirschfield, P. J. (2017). Schools and crime. *Annual Review of Criminology*, 1, 149–169.
<https://doi.org/10.1146/annurev-criminol-032317-092358>
- Izehiwa, Efosa-Ehioghiren Augustina, Haruna Ezekiel and Timipre Joy Orusengha. “Assessment of Students’ Indiscipline in Secondary School: Implication for Counselling.” *J Abnorm Psychol* 8 (2022): 160.
- Korohod, S.V. (2025). Causes of violence in educational institutions: how war changes children’s behavior. *Analytical and Comparative Jurisprudence*.
- Law Essays and Papers. (2022). Parents and juvenile delinquency. *Parents and Juvenile Delinquency - Law Essays (lawaspect.com)*
- Mallett, C.A. (2016). Truancy: It’s not about skipping school. *Child and Adolescent Social Work Journal*, 33, 337–347. <https://doi.org/10.1007/s10560-015-0433-1>
- Souza, R.P. (2024). Enhancing school safety through psychological support: Key findings and strategies. *Revista Sistemática*.
- Teasley, M. L. (2016). —Absenteeism and truancy: Risk, protection, and best practice implications for school social workers. *Children & Schools* 26(2), 117-128.
- Van Horn, M. L., Hawkins, J. D., Arthur, M. W., & Catalano, R. F. (2017). Assessing community effects on adolescent substance use and delinquency. *Journal of Community Psychology* 35(8): 925-946.
- Wekesa, D. W. R., & Atenya, H M (2020). School Rules Commonly Violated and Aspects of the Rules That Influence Their Violation among Public Sec Schools of Butere Sub County Kakamega. DOI: 10.9790/0837-2507103148

Student Attrition Across Academic Programs: A Survival Analysis

Joseph B. Campit

Pangasinan State University-Bayambang Campus

Email : josephcampit@psu.edu.ph

Abstract

Student attrition remains a persistent concern in higher education, yet many retention studies rely on cross-sectional designs that fail to capture when students drop out. This study aimed to examine student attrition across academic programs using survival analysis by identifying semester-level attrition patterns, comparing survival distributions according to sex, academic program, and program type and determining predictors of dropout using Cox proportional hazard model. A quantitative longitudinal design was employed using institutional records of 1,723 undergraduate students from Pangasinan State University, Bayambang Campus, who were followed from School Year 2019–2020 to School Year 2022–2023. Life table analysis, Kaplan-Meier estimation, Log-Rank tests, Bonferroni-adjusted pairwise comparisons, and Cox proportional hazards regression were used to analyze student survival time and dropout hazard. Results showed that attrition was highest during the first semester, with the cumulative survival probability declining from 1.00 to 0.94 and then to 0.79 by the eighth semester. Significant differences in survival distributions were observed according to sex ($\chi^2 = 45.939$, $p < .001$), academic program ($\chi^2 = 141.329$, $p < .001$), and program type ($\chi^2 = 72.830$, $p < .001$). The Cox model further revealed that male students were significantly more likely to drop out than female students (HR = 1.639, $p < .001$), while students enrolled in BPA (HR = 4.239, $p < .001$) and BSIT (HR = 3.307, $p = .001$) exhibited substantially higher dropout hazards than students in the BSN program. These findings demonstrate the usefulness of survival analysis in identifying critical periods and high-risk student groups and contribute to higher education research by extending the application of time-to-event modeling as a robust framework for understanding student attrition across academic programs and informing evidence-based retention strategies.

Keywords: student attrition; survival analysis; Kaplan-Meier estimation; Cox proportional hazards model; student retention

1. Introduction

Student attrition remains one of the most persistent challenges confronting higher education institutions worldwide. Although access to higher education has expanded significantly over the past decades, many institutions continue to experience substantial rates of student dropout before program completion. Attrition affects not only students and their families but also institutions and society as a whole, resulting in financial losses, reduced institutional efficiency, delayed workforce development, and underutilization of educational resources. Consequently, understanding the factors associated with student attrition and the timing of dropout has become an important concern in educational research, institutional planning, and policy development.

Student attrition is widely recognized as a complex and multidimensional phenomenon influenced by academic, demographic, institutional, and social factors. Previous studies have shown that student departure from higher education is not a single isolated event but rather a gradual process shaped by students' experiences and interactions within the academic environment. Tinto's theory of student departure emphasizes that persistence is strongly associated with students' academic and social integration within the institution, while Bean's student attrition model highlights the influence of external and institutional factors on students' decisions to remain enrolled or discontinue their studies (Bean, 1980; Tinto, 1993). These theoretical perspectives suggest that student retention should be examined not merely as an outcome, but as a dynamic process that evolves.

Globally, higher education institutions continue to report considerable levels of student attrition, particularly during the early stages of academic programs. Research indicates that dropout patterns are

often associated with demographic characteristics, academic preparedness, institutional engagement, and program-related factors. Large-scale predictive analyses have demonstrated that student characteristics and academic experiences significantly contribute to attrition risk in higher education settings (Aulck et al., 2016). Similarly, longitudinal retention studies have shown that students are most vulnerable to dropout during the initial semesters of study, where adjustment to academic and social demands becomes critical to persistence and eventual completion (Bani & Haji, 2017). These findings underscore the importance of examining student attrition using approaches that capture changes in retention over time.

Across academic programs, retention patterns may vary substantially due to differences in curriculum structure, academic demands, learning environments, and professional expectations. Students enrolled in different disciplines encounter varying levels of academic rigor, workload, laboratory or practicum requirements, and institutional support, all of which may influence their persistence in higher education. Previous studies have emphasized that academic program characteristics are important determinants of student retention and completion (York et al., 2015). For example, students enrolled in highly technical or professionally oriented programs may experience distinct retention trajectories compared to those in non-technical or non-board programs. Such variations suggest that program-level analysis is essential for identifying groups of students at greater risk of attrition.

In addition to academic program, demographic variables such as sex have also been identified as important factors associated with student persistence. Several studies have reported differences in academic engagement, persistence behavior, and completion rates between male and female students. Research in higher education has shown that female students often demonstrate higher persistence and completion rates than male students, particularly in programs that require sustained academic engagement and long-term commitment (Tomlinson et al., 2024). These differences may be associated with variations in motivation, study habits, social integration, and experiences of institutional support. Understanding whether survival patterns differ according to sex remains important for designing targeted retention strategies and student support interventions.

Another important institutional classification relevant to retention studies is program type. In many higher education institutions, academic programs are commonly categorized into board and non-board programs. Board programs are generally associated with professional licensure examinations and often involve stricter curricular requirements, professional training components, and higher academic expectations. In contrast, non-board programs may exhibit different academic structures and student engagement patterns. Such institutional distinctions may influence students' academic experiences and consequently affect attrition patterns. However, despite the potential relevance of program type, relatively few studies have explicitly examined retention differences between board and non-board programs within a survival analysis framework.

Although numerous studies have investigated student retention and dropout, many continue to rely on traditional statistical methods, such as descriptive comparisons, correlation analyses, and logistic regression. While these methods provide useful insights into factors associated with student attrition, they often fail to capture the temporal nature of student persistence adequately. Student dropout is inherently a time-dependent phenomenon because students may discontinue their studies at different points during their academic journey. Conventional cross-sectional approaches are limited in explaining when dropout occurs and how survival probabilities change across academic semesters.

To address these limitations, survival analysis has increasingly been recognized as an appropriate methodological framework for studying student attrition. Survival analysis is specifically designed for time-to-event data and enables the estimation of survival probabilities over time while accounting for censored observations. In educational research, the event commonly refers to student dropout, whereas students who remain enrolled or complete their programs are treated as censored observations. Unlike traditional methods, survival analysis provides detailed information regarding the timing and progression of attrition across academic periods.

Among the most widely used survival analysis techniques are life table analysis, Kaplan–Meier estimation, and Cox proportional hazards regression. Life table analysis provides interval-based estimates of survival probabilities and attrition patterns over time. Kaplan–Meier estimation allows the graphical

representation of survival curves, enabling comparisons of survival distributions across groups such as sex, academic programs, and program types. Meanwhile, the Cox proportional hazards model enables the examination of the effects of predictor variables on the hazard or risk of dropout while accounting for time-to-event dynamics. These methods have been widely applied in medical, social science, and educational research due to their ability to model longitudinal event processes effectively (Clark et al., 2003).

Recent educational studies have increasingly applied survival analysis to examine student retention and dropout behavior. Research has demonstrated that survival analysis provides valuable insights into critical periods of attrition risk and allows institutions to identify vulnerable student groups more effectively (Bohndick, 2020). Similarly, longitudinal event-history analyses have shown that dropout risk varies across demographic groups, academic disciplines, and institutional contexts, highlighting the importance of program-specific retention analysis (Tomlinson et al., 2024). These studies support the growing use of survival analysis in higher education research as a robust framework for understanding student persistence patterns.

Despite these methodological advancements, gaps remain in the existing literature on student attrition across academic programs. Many studies focus on single academic disciplines, specific colleges, or narrowly defined student populations, limiting broader institutional comparisons. In particular, there remains limited evidence examining attrition patterns simultaneously across multiple academic programs and program types within a unified survival analysis framework. Furthermore, while demographic variables such as sex are commonly included in retention studies, relatively few investigations integrate sex, academic program, and program type in a comprehensive longitudinal analysis of student attrition.

Additionally, many prior studies emphasize predictive modeling without sufficiently examining semester-level survival patterns and changes in retention probabilities over time. Understanding when attrition occurs is particularly important because institutions may design more effective interventions when critical periods of dropout risk are identified. Survival-based analyses allow examination not only of whether students drop out, but also of when attrition is most likely to occur throughout their academic progression.

Given these gaps, there is a need for a comprehensive survival analysis of student attrition across academic programs that integrates demographic and institutional variables within a time-to-event framework. Examining survival patterns by sex, academic program, and program type may provide important insights into how retention trajectories differ across student groups. Such analyses may help institutions identify vulnerable student populations and develop targeted retention interventions to improve persistence and completion outcomes.

In this context, the present study investigates student attrition across academic programs using survival analysis techniques. Specifically, the study applies life table analysis and Kaplan–Meier survival estimation to examine the overall pattern of student attrition across academic semesters. Differences in survival distributions are analyzed by sex, academic program, and program type using Kaplan–Meier survival curves and the log-rank test. Furthermore, Cox proportional hazards regression is employed to determine whether sex and academic program significantly influence student attrition. In this study, dropout is treated as the event of interest, and students who graduated or remained enrolled at the end of the observation period are treated as censored.

This study contributes to the existing literature in several ways. Methodologically, it extends the application of survival analysis in higher education research by integrating descriptive and inferential survival methods to examine student attrition across multiple academic programs. Empirically, it provides comparative evidence on retention patterns across different academic disciplines and program types within a single institutional context. In practice, the findings help higher education institutions identify high-risk student groups, understand critical periods of attrition, and develop data-informed retention policies and intervention programs. Ultimately, the study contributes to ongoing efforts to improve student persistence, enhance institutional effectiveness, and support successful program completion in higher education.

2. Review of Related Literature

2.1 Student Attrition in Higher Education

Student attrition remains a major concern for higher education institutions worldwide, as it affects institutional performance, educational efficiency, workforce preparation, and student development. Attrition refers to the discontinuation of studies before program completion, while retention refers to the ability of institutions to support students in remaining enrolled until graduation. High attrition rates result in financial losses for institutions, delayed professional preparation, and reduced opportunities for students. Consequently, student retention has become an important indicator of institutional effectiveness and educational quality.

Studies consistently show that student attrition is a multidimensional phenomenon influenced by demographic, academic, institutional, and social factors. Attrition is not simply an isolated decision to leave school but rather a gradual process shaped by students' academic experiences and interactions within the educational environment. Tinto's Student Integration Theory emphasizes that students are more likely to persist when they become academically and socially integrated within the institution, while Bean's Student Attrition Model highlights the role of institutional experiences and external influences in shaping persistence behavior (Bean, 1980; Tinto, 1993). These theoretical perspectives suggest that student persistence develops over time and is affected by continuous interactions between students and their academic environment.

Empirical studies have demonstrated that student attrition patterns can often be identified using demographic and academic indicators. Aulck et al. (2016) showed that higher education dropout patterns may be predicted using early academic performance and demographic characteristics, suggesting that attrition follows systematic rather than random patterns. Similarly, Bani and Haji (2017) argued that retention should be viewed as a longitudinal process because students' risk of dropout changes throughout their academic journey rather than remaining constant over time. These findings reinforce the importance of examining student attrition as a time-dependent phenomenon.

Several studies have also emphasized that the early semesters of study are critical periods for student persistence. During this stage, students experience adjustment challenges related to academic expectations, learning demands, institutional culture, and social integration. Students who fail to adapt successfully during these periods are more vulnerable to attrition. Pascarella and Terenzini (2005) noted that students' persistence decisions are strongly associated with their early academic experiences and engagement within the institution. Similarly, York et al. (2015) identified academic integration, institutional support, and program satisfaction as important contributors to student retention in higher education.

Despite extensive research on student retention, many traditional approaches continue to rely on descriptive statistics, graduation rates, and cross-sectional analyses. While these approaches provide useful information regarding overall completion outcomes, they fail to account for the timing of dropout events. Such methods are limited because they do not adequately explain when students become vulnerable to attrition during their academic progression. Consequently, scholars have increasingly emphasized the need for longitudinal analytical frameworks capable of modeling student retention dynamically across time.

2.2 Academic Program and Program Type as Factors in Student Attrition

Academic programs differ substantially in curriculum structure, academic requirements, instructional approaches, and professional expectations. These differences may significantly influence students' academic experiences and persistence patterns. Students enrolled in different academic disciplines encounter varying levels of workload, assessment demands, laboratory activities, fieldwork requirements, and professional preparation, all of which may contribute to differences in attrition behavior.

Research suggests that program-level characteristics are important determinants of student persistence. York et al. (2015) emphasized that academic program experiences significantly affect retention outcomes because disciplinary contexts and learning environments shape students' engagement and persistence. Similarly, studies on higher education retention have shown that students enrolled in technically demanding or professionally oriented programs may follow different survival trajectories than those in less specialized disciplines.

Program type also represents an important institutional factor associated with student attrition. In many higher education institutions, academic programs are classified as either board or non-board programs. Board programs are generally associated with licensure examinations and stricter curricular requirements, often involving intensive academic preparation, professional standards, and practicum components. In contrast, non-board programs may involve different instructional structures and academic expectations. Such distinctions may influence students' academic adjustment, stress levels, and persistence behaviors.

Several studies have highlighted the role of institutional and curricular structures in shaping student retention. Students enrolled in academically demanding programs may experience greater academic pressure, which can increase the likelihood of withdrawal, particularly during the early stages of study. Conversely, strong professional orientation and career motivation within board programs may enhance persistence despite higher academic demands. These variations suggest that survival probabilities may differ across program types and academic disciplines.

In addition to curriculum structure, institutional support mechanisms also influence retention across academic programs. Academic advising, faculty engagement, peer support, and access to learning resources have been identified as important contributors to student persistence. Bean (1980) argued that institutional experiences and student satisfaction significantly influence persistence decisions, while Astin (1984) emphasized the importance of student involvement in promoting retention and academic success.

Although prior studies recognize the importance of academic program characteristics, many investigations analyze students as a single homogeneous population without examining program-specific retention patterns. This limits the ability to identify which academic programs are associated with higher dropout risks and whether retention patterns vary across program types. Moreover, comparative analyses between board and non-board programs remain limited in higher education retention research.

2.3 Sex Differences and Student Persistence

Sex differences have been widely examined in higher education retention research because male and female students often exhibit different academic behaviors, engagement patterns, and persistence outcomes. Studies suggest that differences in motivation, study habits, academic adjustment, and social integration may contribute to variations in retention between male and female students.

Research generally indicates that female students tend to demonstrate higher levels of persistence and completion compared to male students. Tomlinson et al. (2024) reported that female students frequently exhibit stronger academic engagement and persistence behaviors across higher education settings. Similarly, Franz and Schindler (2024) found that sex significantly influenced completion patterns in higher education programs, suggesting that male and female students may experience different academic trajectories even within similar institutional environments.

Several explanations have been proposed regarding these differences. Female students are often associated with stronger academic discipline, higher classroom engagement, and greater utilization of institutional support services. In contrast, male students may face greater challenges in academic adjustment and institutional integration. These differences may contribute to variations in survival probabilities and dropout rates across academic semesters.

Social and institutional factors may also influence sex-based retention patterns. Academic support systems, faculty interaction, peer relationships, and learning environments may affect male and female students differently. Tinto's theory of student integration emphasizes that successful academic and social integration increases persistence, suggesting that students who establish stronger institutional connections are more likely to remain enrolled.

Despite the extensive literature on sex differences in retention, many studies rely on cross-sectional or descriptive approaches that do not account for temporal changes in dropout risk. Such approaches provide a limited understanding of when male or female students become more vulnerable to attrition during their academic progression. Longitudinal approaches are therefore necessary to examine how survival probabilities differ over time by sex.

Furthermore, the interaction between sex and academic program remains insufficiently explored in many retention studies. Male and female students may experience academic programs differently depending on curriculum demands, professional expectations, and institutional culture. As a result, examining sex differences within a survival analysis framework may provide deeper insights into how persistence patterns evolve throughout the duration of the study.

2.4 Survival Analysis in Educational Research

Survival analysis is a statistical approach to analyzing time-to-event data, focusing on the duration until a particular event occurs. In educational research, the event commonly refers to student attrition or dropout, while students who remain enrolled or complete their academic programs are treated as censored observations. Unlike traditional statistical methods, survival analysis incorporates both the occurrence and timing of events, making it particularly appropriate for longitudinal retention studies.

One of the primary advantages of survival analysis is its ability to model changing probabilities of persistence over time. Traditional retention measures, such as graduation rates and cohort completion percentages, provide static summaries of outcomes but fail to account for when attrition occurs. Survival analysis addresses this limitation by estimating survival probabilities at different time intervals throughout students' academic progression.

Life table analysis and Kaplan–Meier estimation are among the most widely used descriptive survival analysis techniques. Life table analysis provides interval-based estimates of survival and attrition probabilities, whereas Kaplan–Meier estimation produces stepwise survival curves that illustrate the probability of students remaining enrolled over time. These methods allow researchers to compare survival distributions across groups such as sex, academic program, and program type.

The Cox proportional hazards model extends survival analysis by examining the influence of predictor variables on the risk of dropout. This model estimates hazard ratios that indicate the relative likelihood of attrition associated with specific demographic or academic characteristics. Clark et al. (2003) emphasized that survival analysis techniques are highly appropriate for censored and longitudinal data structures because they effectively account for incomplete observations and varying survival times.

Recent educational studies increasingly employ survival analysis to investigate retention and dropout behavior. Bohndick (2020) demonstrated that event-history and survival models can identify critical periods during which students are most vulnerable to attrition, enabling institutions to implement timely interventions. Similarly, Tomlinson et al. (2024) highlighted the usefulness of Kaplan–Meier and Cox regression techniques in identifying differences in survival patterns across student groups.

Despite these advancements, survival analysis remains underutilized in higher education research compared to traditional statistical methods. Many existing studies focus on single academic disciplines or narrowly defined student populations, limiting broader institutional comparisons. In particular, relatively few studies simultaneously examine survival patterns according to sex, academic program, and program type within a unified survival analysis framework.

Moreover, while previous studies often emphasize predictive modeling, fewer investigations focus on describing semester-level survival trajectories and identifying critical periods of attrition across academic programs. Understanding when dropout occurs is particularly important because institutions can design more effective interventions when periods of heightened attrition risk are identified.

Synthesis and Research Gap

The reviewed literature demonstrates that student attrition is a complex and time-dependent phenomenon influenced by demographic, academic, and institutional factors. Existing studies consistently emphasize the importance of academic integration, institutional experiences, and student characteristics in

shaping persistence outcomes. Academic program characteristics, program type, and sex have all been identified as relevant variables associated with student retention and dropout behavior.

However, many previous investigations continue to rely on traditional statistical approaches that fail to capture the temporal dimension of attrition adequately. While survival analysis has increasingly been applied in educational research, relatively few studies have comprehensively examined student attrition across multiple academic programs within a unified longitudinal framework.

Specifically, there remains limited research that simultaneously analyzes: 1) survival patterns across multiple academic programs; 2) differences in retention according to program type; 3) sex-based variations in survival distributions; and 4) semester-level attrition patterns using survival analysis techniques.

Additionally, many studies focus on either descriptive retention outcomes or predictive modeling, without integrating both survival estimation and hazard analysis. This limits institutional understanding of when students become vulnerable to attrition and which student groups experience greater dropout risk over time.

Given these gaps, there is a need for a comprehensive survival analysis study examining student attrition across academic programs using life table analysis, Kaplan–Meier estimation, Log-Rank tests, and Cox proportional hazards regression. By integrating sex, academic program, and program type within a longitudinal analytical framework, the present study seeks to provide deeper insights into student attrition patterns and contribute to the growing application of survival analysis in higher education research.

Guided by the student attrition and persistence theories of Tinto (1993) and Bean (1980), this study conceptualized student dropout as a time-to-event outcome influenced by selected demographic and academic characteristics. Specifically, sex, academic program, and program type were examined as factors associated with student survival time (time to dropout). Sex, academic program, and program type were compared using Kaplan–Meier estimation and Log-Rank tests, while sex and academic program were further evaluated as predictors of dropout hazard through Cox proportional hazards regression. This framework enabled the study to examine both the timing of student attrition and the factors associated with the risk of dropout.

Figure 1 presents the conceptual framework of the study.

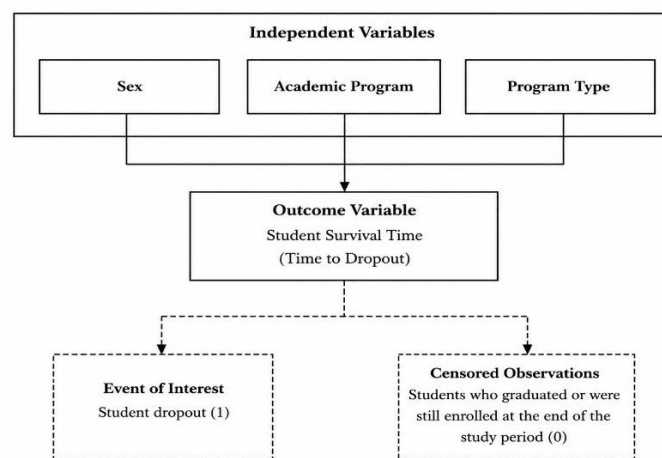


Fig. 1: Conceptual Framework of the Study

Figure 1 presents the conceptual framework of the study. It illustrates the hypothesized relationship between the independent variables—sex, academic program, and program type—and the outcome variable, student survival time (time to dropout). In the survival analysis framework, student dropout represents the event of interest, whereas students who graduated or remained enrolled at the end

of the observation period are treated as censored observations. The framework serves as the basis for analyzing differences in survival experiences and identifying factors associated with student attrition.

3. Methodology

3.1 Research Design

This study employed a quantitative, longitudinal, retrospective cohort design and used survival analysis to examine student attrition across academic programs. Institutional enrollment records were analyzed to determine the time students remained enrolled from initial admission until dropout or censoring. In this study, dropout was treated as the event of interest. In contrast, students who graduated or remained officially enrolled at the end of the observation period were treated as censored cases.

Survival analysis was adopted because it is appropriate for time-to-event data, particularly when the research objective involves examining both the occurrence and timing of an event. Unlike traditional retention analyses that focus only on whether students dropped out, survival analysis accounts for when attrition occurs and allows censored observations to be included. This approach provides a more comprehensive understanding of student persistence across academic semesters (Clark et al., 2003; Schober & Vetter, 2018; Martínez-Carrascal et al., 2023).

3.2 Research Locale and Study Population

The study was conducted at Pangasinan State University, Bayambang Campus, and involved undergraduate students enrolled in the academic programs offered by the three colleges of the campus. The study included both board and non-board programs to allow a comparative analysis of student attrition across different academic program classifications.

The board programs included Bachelor of Elementary Education (BEEd), Bachelor of Secondary Education (BSEd), Bachelor of Early Childhood Education (BECEd), Bachelor of Physical Education (BPEd), Bachelor of Technology and Livelihood Education (BTLEd), and Bachelor of Science in Nursing (BSN). Meanwhile, the non-board programs included Bachelor of Arts in English (ABE), Bachelor of Public Administration, Bachelor of Science in Business Administration (BSBA), and Bachelor of Science in Information Technology (BSIT).

A cohort-based approach was employed by following students who initially enrolled during School Year 2019–2020 and tracking their academic status through School Year 2022–2023, covering a four-year observation period equivalent to eight academic semesters. This longitudinal approach enabled the examination of student survival patterns from entry to graduation or attrition.

Students who transferred into the institution or shifted into another academic program after the initial cohort enrollment were excluded from the study to maintain consistency in longitudinal cohort tracking and survival estimation. Complete enumeration was employed to include all eligible students within the defined cohort. This approach ensured comprehensive representation of all students at risk and improved the accuracy of survival probability estimates.

3.3 Data Source and Variables

The study utilized secondary data obtained from the university's institutional academic records maintained by the Registrar's Office and the student information management system. The dataset consisted of student enrollment histories and academic status records covering eight academic semesters within the observation period.

The variables included in the study were selected based on their availability, completeness, and relevance to student attrition research. These variables included sex, academic program, program type, enrollment status, and study duration.

Sex was categorized as male or female. The academic program referred to the specific undergraduate degree program in which the student was enrolled. Program type classified academic programs as either board or non-board programs. Enrollment status referred to the student's academic standing during each semester of observation.

The primary outcome variables were event status and survival time. The event of interest was student attrition (dropout). Students who graduated or remained officially enrolled at the conclusion of the observation period were treated as censored observations, and the survival time was defined as the number of academic semesters from initial enrollment until the occurrence of dropout or censoring.

The inclusion of demographic and program-related variables is supported by previous studies that have identified sex and academic program characteristics as important determinants of student persistence and attrition in higher education. Institutional datasets likewise provide reliable longitudinal data suitable for survival analysis.

3.4 Data Collection Procedure

Before data gathering, approval to access institutional records was secured from the appropriate university offices. Relevant student records were obtained from the Registrar's Office and extracted from the university's academic database system.

Following data retrieval, the dataset underwent validation and screening procedures to ensure the completeness, consistency, and accuracy of records. Duplicate entries, incomplete records, and inconsistent enrollment histories were identified and addressed before analysis. The cleaned dataset was subsequently organized into a format appropriate for survival analysis.

Confidentiality and ethical considerations were observed throughout the study. Student identifiers and personal information were treated with strict confidentiality and were used solely for research purposes.

3.5 Data Preparation and Coding

The dataset was structured according to the requirements of survival analysis. Each student record included a survival time variable and an event indicator variable. The event indicator variable was coded as 1 for students who experienced dropout and 0 for censored observations, including students who graduated or remained enrolled at the end of the observation period.

Survival time was measured in semesters, beginning with the first semester of enrollment during School Year 2019–2020 and continuing through the occurrence of dropout or censoring during School Year 2022–2023.

Categorical variables were coded to facilitate statistical analysis. Sex was coded as 1 = male and 2 = female. The academic program was coded according to the student's specific degree program. Program type was coded as 1 = board program and 2 = non-board program.

The coding scheme enabled comparisons of survival probabilities and hazard rates across groups defined by sex, academic program, and program type.

3.6 Statistical Treatment of Data

Descriptive and inferential statistical techniques were employed to address the study's objectives. Frequency counts and percentages were used to describe the student profile by sex, academic program, and program type.

Life table analysis was used to examine the pattern of student attrition across academic semesters. This analysis generated the number of students at risk, the number of attrition events, the number of censored cases, the proportion terminating, the proportion surviving, and the cumulative survival probabilities for each semester interval.

Kaplan-Meier survival estimation was employed to estimate students' survival probabilities over time. Separate survival curves were generated according to sex, academic program, and program type to compare patterns of student persistence across groups.

The Log-Rank (Mantel-Cox) test was used to determine whether there were significant differences in survival distributions by sex, academic program, and program type. For academic program comparisons, pairwise Log-Rank tests with Bonferroni adjustment were conducted to identify which specific program pairs differed significantly in their survival distributions.

Cox proportional hazards regression was conducted to identify predictors of student attrition. Sex and academic program were entered as predictor variables in the model, while dropout served as the event of interest. Hazard ratios were interpreted to determine the relative risk of attrition, with values greater than 1 indicating increased dropout hazard and values less than 1 indicating reduced dropout hazard.

The proportional hazards assumption was evaluated through graphical inspection and diagnostic procedures to ensure the appropriateness of the Cox regression model. Statistical significance was evaluated at the 0.05 level, while Bonferroni-adjusted pairwise comparisons for academic programs were interpreted using the adjusted significance level of $\alpha = .001$.

4. Results and Discussion

4.1 Profile of Students

Table 1 presents the demographic profile of the students included in the study, categorized by sex, academic program, and program type.

Table 1: Profile of Undergraduate Students by Sex, Academic Program, and Program Type (N = 1,723)

Profile Variables	Category	Frequency	Percent
Sex			
	Male	551	32.0
	Female	1172	68.0
	Total	1723	100.0
Academic Program			
	ABE	179	10.4
	BPA	256	14.9
	BSBA	281	16.3
	BSIT	245	14.2
	BECED	54	3.1
	BEED	111	6.4
	BPEd	60	3.5
	BSEd	379	22.0
	BTLEd	53	3.1
	BSN	105	6.1
	Total	1723	100.0
Program Type			
	Non-Board Program	961	55.8
	Board Program	762	44.2
	Total	1723	100.0

Table 1 presents the demographic profile of the students in the sample, with 68% female and 32% male. This gender distribution aligns with trends observed in many undergraduate populations (Astin, 1993). The academic programs are spread across various fields, with BSEd accounting for the largest proportion (22%), followed by BSBA (16.3%), BPA (14.9%), and BSIT (14.2%). The program type breakdown reveals that the majority of students (55.8%) are enrolled in non-board programs, with 44.2% enrolled in board programs. The distribution of academic programs and program types reflects the diversity of student academic interests and professional aspirations, providing a comprehensive base for subsequent survival analysis (Pascarella & Terenzini, 2005; Bean, 1980).

4.2 Pattern of student attrition across academic semesters

Table 2 presents the pattern of student attrition across academic semesters using life table analysis and Kaplan-Meier survival estimation.

Table 2: Life Table Showing the Pattern of Student Attrition

Interval Start Time (Semester)	Number Entering Interval (Currently Enrolled) (n)	Number of Terminal Events (Dropouts) (d)	Number Graduating During Interval (censored) (c)	Proportion Terminating (h)	Proportion Surviving (p)	Cumulative Proportion Surviving at the end of interval (S)
0	1723	0	0	.00	1.00	1.00
1	1723	110	0	.06	.94	.94
2	1613	14	0	.01	.99	.93
3	1599	36	0	.02	.98	.91
4	1563	16	0	.01	.99	.90
5	1547	24	0	.02	.98	.88
6	1523	19	0	.01	.99	.87
7	1504	43	0	.03	.97	.85
8	1461	48	1413	.06	.94	.79

The life table analysis in Table 2 highlights early-semester attrition as a significant factor influencing student persistence. During this period, 110 students dropped out in the first semester, resulting in a substantial decline in the cumulative survival probability from 1.00 to 0.94. The high attrition observed during the first semester is consistent with Tinto's Student Integration Theory (1993), which emphasizes that the early stages of university life are critical for students' academic and social integration. Students who fail to establish meaningful academic engagement and social connections during this period are more likely to withdraw. Likewise, Bean's Student Attrition Model (1980) suggests that students' decisions to leave an institution are influenced by their initial experiences and adjustment to the university environment, reinforcing the importance of early intervention programs. As students progress through the program, attrition decreases, suggesting that those who remain enrolled after the first year are more likely to persist (Astin, 1984). By the eighth semester, the cumulative survival probability is 0.79, indicating that although many students remain enrolled, attrition continues to affect a portion of the population. This is consistent with findings that long-term persistence is often influenced by both academic integration and social networks (Pascarella & Terenzini, 2005).

Figure 2 presents the Kaplan-Meier survival curve, which visually depicts the survival probabilities of students across the eight academic semesters. The curve illustrates how the probability of students remaining enrolled evolves.

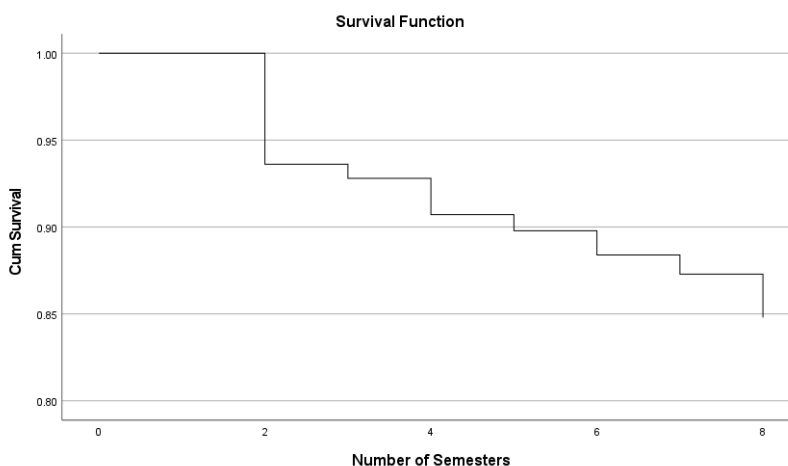
**Fig. 2:** Kaplan-Meier Survival Curves of Student Attrition

Figure 2 visually reinforces the findings presented in Table 2. The Kaplan–Meier survival curve shows a pronounced decline during the first semester, reflecting the substantial reduction in survival probability associated with early student attrition. Thereafter, the curve gradually levels off, indicating that students who remained enrolled beyond the initial semesters exhibited a greater likelihood of persisting throughout the remainder of the program. The graphical trend complements the life table results by illustrating the critical importance of the first year as the period of highest attrition risk.

4.3 Comparison in Survival Time of Students When Grouped according to their Profile Variables

Table 3 presents Kaplan–Meier estimates of mean survival time for students grouped by sex.

Table 3: Kaplan–Meier Estimates of Mean Survival Time by Sex and Log-Rank Test of Differences

Sex	Mean Survival Time (M)	95% Confidence Interval (CI)	Overall Comparison Log-Rank (Mantel-Cox)
Male	7.00	6.819 – 7.18	$\chi^2 = 45.939$, df = 1, p < .001
Female	7.40	7.299 – 7.51	
Overall	7.27	7.182 – 7.37	

The results presented in Table 3 indicate that female students had a higher mean survival time (M = 7.40 semesters) than male students (M = 7.00 semesters). The Log-Rank test revealed a statistically significant difference in survival distributions between male and female students ($\chi^2 = 45.939$, df = 1, p < .001), indicating that female students tended to remain enrolled longer than their male counterparts. This finding is consistent with previous research suggesting that female students generally demonstrate stronger persistence in higher education, which has been associated with higher levels of academic engagement and social integration (Pascarella & Terenzini, 2005). Likewise, earlier studies have suggested that male students may experience greater challenges in adapting to the academic environment, which may adversely affect their persistence (Astin, 1984). These findings underscore the importance of developing targeted retention initiatives that enhance the academic engagement and institutional connectedness of male students. From a theoretical perspective, the observed difference in survival time supports Bean's Student Attrition Model, which posits that student persistence is influenced by individual characteristics and external factors that shape institutional commitment and the decision to remain enrolled. Although Tinto's Student Integration Theory does not identify sex as a direct determinant of persistence, it emphasizes that students who achieve stronger academic and social integration are more likely to persist. The longer survival time observed among female students is therefore consistent with Tinto's proposition that variations in students' integration within the academic community are reflected in differences in persistence.

Figure 3 presents the Kaplan–Meier survival curves of student attrition by sex.

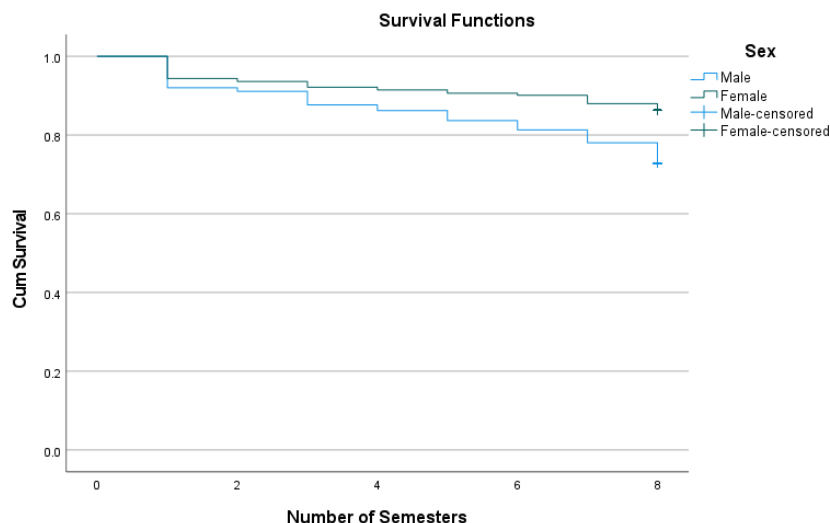


Fig. 3: Kaplan-Meier Survival Curves of Student Attrition by Sex

Figure 3 visually supports the findings in Table 3, showing that female students consistently maintain higher survival probabilities across semesters. The steeper decline in the male survival curve suggests that male students face a higher risk of attrition, particularly in the earlier semesters.

Table 4 presents Kaplan-Meier estimates of mean survival time for students grouped by academic program.

Table 4: Kaplan-Meier Estimates of Mean Survival Time by Academic Program and Log-Rank Test of Differences

Academic Program	Mean Survival Time (M)	95% Confidence Interval (CI)	Overall Comparison Log-Rank (Mantel-Cox)
ABE	7.011	6.67 – 7.35	$\chi^2 = 141.329$, df = 9, p < .001
BPA	6.863	6.59 – 7.14	
BSBA	7.356	7.13 – 7.58	
BSIT	6.722	6.42 – 7.03	
BECed	7.815	7.54 – 8.09	
BEEd	7.928	7.78 – 8.80	
BPEd	7.700	7.40 – 8.00	
BSEd	7.467	7.30 – 7.64	
BTLEd	7.491	6.99 – 8.00	
BSN	7.771	7.57 – 7.97	
Overall	7.274	7.18 – 7.37	

As shown in Table 4, mean survival time varied across academic programs. Students in the BEEEd program obtained the highest mean survival time (M = 7.93 semesters), indicating the longest persistence among the programs, followed by BECEd (M = 7.82), BSN (M = 7.77), and BPEd (M = 7.70). In contrast, students in the BSIT program had the lowest mean survival time (M = 6.72 semesters), suggesting earlier attrition than in other programs. The overall mean survival time was 7.27 semesters, indicating that, on average, students remained enrolled for more than seven semesters before experiencing attrition or censoring.

The Log-Rank test revealed a statistically significant difference in survival distributions across academic programs, $\chi^2(9) = 141.329$, $p < .001$. This indicates that survival rates differed significantly across academic programs. The variation in survival time across academic programs further supports Tinto's proposition that persistence is influenced by students' integration within their specific academic environments. Academic programs differ in curriculum demands, learning experiences, faculty interaction, and peer support, all of which may affect students' academic integration and persistence. Similarly, Bean's model acknowledges that organizational and environmental factors contribute to students' decisions to remain enrolled or withdraw.

Figure 4 presents the Kaplan-Meier survival curves for student attrition across the different academic programs.

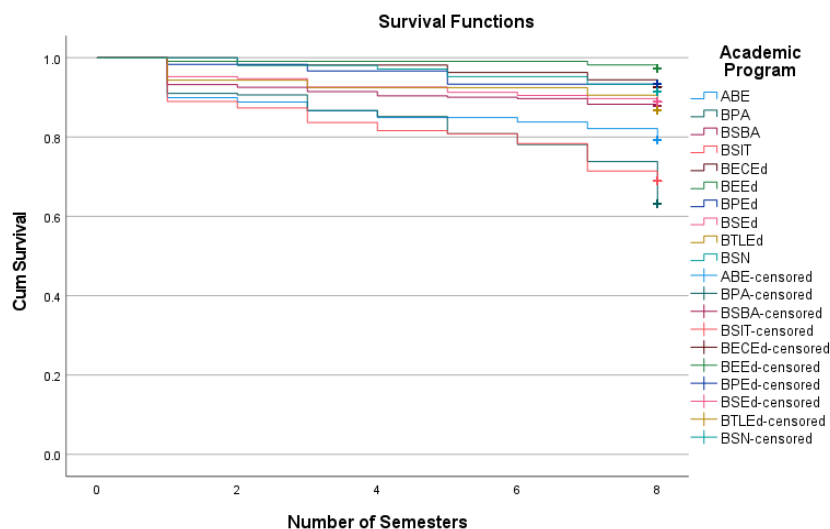


Fig. 4: Kaplan-Meier Survival Curves of Student Attrition by Academic Program

Figure 4 visually supports the results presented in Table 4. The survival curves show observable differences across programs, with BEED, BECED, BSN, and BPED demonstrating relatively higher survival probabilities over time. In contrast, the BSIT curve shows a steeper decline, consistent with its lower mean survival time and suggesting a higher risk of earlier attrition.

Table 5 presents the results of pairwise comparisons of student attrition across various academic programs using the Log-Rank test with Bonferroni adjustment ($\alpha = 0.001$).

Table 5: Pairwise Comparisons of Student Attrition by Academic Program Using Log-Rank Test with Bonferroni Adjustment

Academic Program	ABE		BPA		BSBA		BSIT		BECED		BEED		BPED		BSED		BTLED		BSN	
	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.	χ^2	Sig.
ABE			10.850	.001	6.03	.014	5.23	.022	5.00	.025	18.40	.000	6.01	.014	9.31	.002	1.52	.218	7.34	.007
BPA	10.85	.001			41.27	.000	1.05	.305	16.03	.000	43.24	.000	18.15	.000	57.19	.000	9.94	.002	27.15	.000
BSBA	6.03	.014	41.27	.000			27.22	.000	1.04	.307	8.16	.004	1.48	.224	.18	.668	.04	.849	1.07	.301
BSIT	5.23	.022	1.05	.305	27.22	.000			11.87	.001	34.02	.000	13.56	.000	38.27	.000	6.57	.010	19.71	.000
BECED	5.00	.025	16.02	.000	1.04	.307	11.87	.001			1.98	.159	.02	.896	.71	.399	.99	.319	.067	.797
BEED	18.40	.000	43.24	.000	8.16	.004	34.02	.000	1.98	.159			1.59	.208	7.15	.008	7.01	.008	3.53	.060
BPED	6.01	.014	18.14	.000	1.48	.224	13.56	.000	.02	.896	1.59	.208			1.07	.300	1.34	.247	.17	.684
BSED	9.31	.002	57.18	.000	.18	.668	38.27	.000	.71	.399	7.15	.008	1.07	.300			.19	.667	.62	.431
BTLED	1.52	.218	9.93	.002	.04	.849	6.57	.010	.99	.319	7.01	.008	1.34	.247	.19	.667			.88	.349
BSN	7.34	.007	27.14	.000	1.07	.301	19.71	.000	.07	.797	3.53	.060	.17	.684	.62	.431	.88	.349		

Note: Bonferroni-adjusted significance level ($\alpha = .001$)

The results showed significant differences in survival distributions among selected academic programs. At the Bonferroni-adjusted significance level, significant pairwise differences were found between ABE and BPA; ABE and BEEd; BPA and BSBA; BPA and BECEd; BPA and BEEd; BPA and BPEd; BPA and BSEd; BPA and BSN; BSBA and BSIT; BSIT and BECEd; BSIT and BEEd; BSIT and BPEd; BSIT and BSEd; and BSIT and BSN. These findings indicate that student attrition patterns were not uniform across academic programs, with BPA and BSIT showing more distinct differences than programs with longer survival times.

The significant contrasts involving BPA and BSIT suggest that students in these programs may be more vulnerable to earlier attrition. This pattern is consistent with the Kaplan-Meier estimates, which show that BSIT had the lowest mean survival time, while several education-related and board programs showed relatively higher retention. Variations in academic demands, curriculum structure, student engagement, instructional support, and program-level learning conditions may explain these differences. Previous retention studies emphasize that student persistence is strongly shaped by academic engagement, institutional support, social networks, and the quality of students' learning experiences (Tinto, 2023; Gonçalves et al., 2024).

Taken together, the Kaplan-Meier estimates, survival curves, and pairwise Log-Rank comparisons provide consistent evidence that academic program is an important factor in student attrition. These findings suggest that program-level conditions may influence student persistence, including curriculum structure, academic demands, instructional support, student engagement, and learning environment, which are recognized factors in higher education retention literature (Tinto, 2023; Gonçalves et al., 2024; Albornoz-Toyohama et al., 2025). Programs with lower survival probabilities, particularly BPA and BSIT, may require closer monitoring and targeted retention interventions.

Table 6 presents Kaplan-Meier estimates of mean survival time for students grouped by program type.

Table 6: Kaplan-Meier Estimates of Mean Survival Time by Program Type and Log-Rank Test of Differences

Program Type	Mean Survival Time (M)	95% Confidence Interval (CI)	Overall Comparison Log-Rank (Mantel-Cox)
Non-Board Program	6.999	6.86 – 7.14	$\chi^2 = 72.83$, df = 1, p < .001
Board Program	7.621	7.52 – 7.72	
Overall	7.274	7.18 – 7.37	

As shown in Table 6, students enrolled in board programs had a higher mean survival time (M = 7.621 semesters) than those enrolled in non-board programs (M = 6.999 semesters), indicating that board program students generally remained enrolled longer before experiencing dropout or censoring. The overall mean survival time was 7.274 semesters, suggesting that, on average, students remained enrolled for more than seven semesters. The Log-Rank test revealed a statistically significant difference in survival distributions between board and non-board programs, $\chi^2(1) = 72.830$, $p < .001$, indicating that survival distributions differed significantly between the two program types. These findings are consistent with Tinto's Student Integration Theory, which emphasizes the role of academic integration in student persistence, and Bean's Student Attrition Model, which highlights the influence of institutional characteristics on students' decisions to remain enrolled. Although these factors were not directly measured in the present study, the findings support the applicability of both theories in explaining differences in student survival across program types.

Figure 5 presents the Kaplan-Meier survival curves of student attrition by program type.

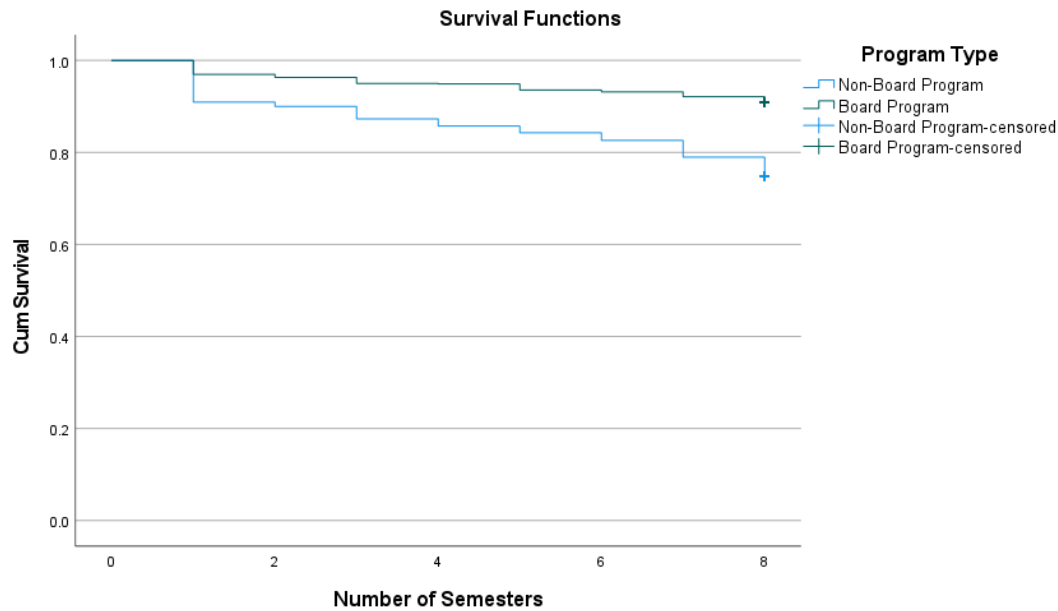


Fig. 5: Kaplan-Meier Survival Curves of Student Attrition by Program Type

Figure 5 visually supports the results presented in Table 6. The survival curve for board program students remained consistently above that of non-board program students, indicating a higher probability of continued enrollment across semesters. In contrast, the curve for non-board program students showed a relatively steeper decline, reflecting earlier attrition.

4.4 Survival Analysis Model

Table 7 presents the model fit statistics for the Cox proportional hazards regression model, which examined the influence of sex and academic program on student attrition.

Table 7: Model Fit Statistics for the Cox Proportional Hazards Model

-2 Log Likelihood	Chi-square	df	p-value
4423.177	155.549	10	<.001

The model produced a -2 Log Likelihood value of 4423.177 and a statistically significant chi-square value, $\chi^2(10) = 155.549$, $p < .001$. This indicates that the model with predictors significantly improved the prediction of student attrition compared with the baseline model without predictors. Thus, the inclusion of sex and academic program provided meaningful explanatory value in estimating students' hazard of dropout.

Table 8 presents the regression coefficients, Wald statistics, significance values, and hazard ratios for the variables included in the Cox proportional hazards model.

Table 8. Variables Included in the Cox's Proportional Hazard Model

Variable	B	Wald	df	p-value	Hazard ratio (Exp(B))
Sex	.494	17.445	1	.000	1.639
Academic Program		92.961	9	.000	
ABE	.896	5.804	1	.016	2.451
BPA	1.444	17.002	1	.000	4.239
BSBA	.330	.774	1	.379	1.391
BSIT	1.196	11.265	1	.001	3.307
BECED	-.092	.023	1	.879	.912
BEEEd	-1.182	3.143	1	.076	.307
BPEd	-.390	.420	1	.517	.677
BSEd	.240	.425	1	.514	1.271
BTLEd	.413	.670	1	.413	1.511
<i>Note:</i> Reference categories are Female for sex, BSN for academic program					

The results showed that sex and academic program were significant predictors of student attrition. Male students had a higher dropout hazard than female students, $HR = 1.639$, $p < .001$, indicating that they were approximately 64% more likely to drop out than female students. In terms of academic program, BPA students showed the highest dropout hazard, $HR = 4.239$, $p < .001$, followed by BSIT students, $HR = 3.307$, $p = .001$, compared with BSN students as the reference group. ABE students also showed an elevated dropout hazard, $HR = 2.451$, $p = .016$, although the effect was weaker than that observed for BPA and BSIT students.

In contrast, BSBA, BECED, BEEEd, BPEd, BSEd, and BTLEd did not significantly differ from BSN in their dropout hazard, as indicated by their non-significant p-values. These results suggest that attrition risk is concentrated among specific student groups, particularly male students and those enrolled in BPA and BSIT. Overall, the Cox regression findings reinforce the need for targeted retention strategies based on students' demographic and academic program profiles.

From a theoretical perspective, these findings are consistent with Bean's Student Attrition Model, which posits that student persistence is influenced by individual characteristics and institutional experiences that shape students' commitment to remain enrolled. Likewise, Tinto's Student Integration Theory suggests that differences in students' academic and social integration within their respective programs may contribute to variations in persistence over time. Although the present study did not directly measure academic integration or institutional commitment, the observed differences in dropout hazard according to sex and academic program support the applicability of both theories in explaining student attrition. Overall, the findings underscore the importance of implementing targeted, evidence-based retention strategies for student groups identified as having a higher risk of dropout.

5. Conclusions

This study demonstrated the value of survival analysis in examining student retention by identifying both the timing and predictors of student attrition. The results showed that attrition was most pronounced during the first semester, indicating that the early enrollment stage is a critical period for institutional intervention. Although the survival probability remained relatively high across the eight semesters, the decline over time suggests that retention remains a concern throughout the undergraduate academic pathway.

The findings further revealed significant differences in student survival time according to sex, academic program, and program type. Female students showed longer persistence than male students,

while retention patterns varied substantially across academic programs. Students in board programs also demonstrated higher survival time than those in non-board programs. The Cox proportional hazards model confirmed that sex and academic program significantly predicted dropout, with male students and students in selected programs, particularly BPA and BSIT, showing higher attrition risk.

Implications for Policy and Practice

The findings provide evidence for strengthening institutional retention policies through early, targeted, and data-driven interventions. Since attrition was highest during the first semester, higher education institutions should prioritize first-year support systems, including academic advising, mentoring, orientation programs, counseling, and early-alert mechanisms. These interventions should be implemented before students become academically or socially disengaged.

The significant differences in survival time across sex, academic program, and program type suggest that retention policies should not be uniformly applied to all students. Instead, institutions should design differentiated support strategies for groups with higher attrition risk, particularly male students, students in programs with lower survival time, such as BPA and BSIT, and students enrolled in non-board programs. Program-level monitoring, curriculum review, faculty advising, and career guidance should be strengthened to address the specific academic and motivational challenges faced by these groups.

At the institutional level, the study highlights the practical value of survival analysis as a decision-support tool for student retention planning. By identifying when dropout risk is highest and which student groups are most vulnerable, universities can allocate resources more strategically, develop timely interventions, and formulate evidence-based policies to improve student persistence and completion outcomes.

References

- Albornoz-Toyohama, R. H., Mendigure-Hachircana, R., Haro-Casildo, S., & Abanto-Ramírez, C. D. (2025). Factors influencing student retention university students: An analysis of institutional reputation, social responsibility and loyalty. *Frontiers in Education*, 10, Article 1499518. doi: 10.3389/feduc.2025.1499518
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25(4), 297–308.
- Astin, A. W. (1993). What matters in college? Four critical years revisited. Jossey-Bass.
- Aulck, L., Velagapudi, N., Blumenstock, J., & West, J. (2016). Predicting student dropout in higher education. arXiv. arXiv:1606.06364.
- Bani, M. J., & Haji, M. (2017). College student retention: When do we losing them? In *Proceedings of the World Congress on Engineering and Computer Science 2017*. arXiv:1707.06210.
- Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education*, 12(2), 155–187. doi: 10.1007/BF00976194
- Bohndick, C. (2020). Predictors of dropout intentions in teacher education programmes compared with other study programmes. *Journal of Education for Teaching*, 46(2), 207–219. doi: 10.1080/02607476.2020.1724652
- Clark, T. G., Bradburn, M. J., Love, S. B., & Altman, D. G. (2003). Survival analysis part I: Basic concepts and first analyses. *British Journal of Cancer*, 89(2), 232–238. doi: 10.1038/sj.bjc.6601118
- Franz, S., & Schindler, S. (2024). Non-completion of teacher education students: Educational and occupational pathways of persons who withdraw from a teacher education program in Germany. *International Journal of Educational Research*, 128, Article 102463. doi: 10.1016/j.ijer.2024.102463
- Gonçalves, G. S., Serra, F. A. R., Storopoli, J. E., Scafuto, I. C., & Rafael, D. N. (2024). Undergraduate student retention activities: Challenges and research agenda. *SAGE Open*, 14(3). doi: 10.1177/21582440241249334

- Martínez-Carrascal, J. A., Hlosta, M., & Sancho-Vinuesa, T. (2023). Using survival analysis to identify populations of learners at risk of withdrawal: Conceptualization and impact of demographics. *The International Review of Research in Open and Distributed Learning*, 24(1), 1–21. doi: 10.19173/irrodl.v24i1.6589
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (Vol. 2). Jossey-Bass.
- Schober, P., & Vetter, T. R. (2018). Survival analysis and interpretation of time-to-event data: The tortoise and the hare. *Anesthesia & Analgesia*, 127(3), 792–798. doi: 10.1213/ANE.0000000000003653
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.
- Tinto, V. (2023). Reflections: Rethinking engagement and student persistence. *Student Success*, 14(2), 1–7.
- Tomlinson, A., Smith, L., Wilcox, C., & Simpson, A. (2024). Academic survival: Student retention in sport and exercise sciences. *Journal of Further and Higher Education*, 48(5), 524–537. doi: 10.1080/0309877X.2024.2356567
- York, T. T., Gibson, C., & Rankin, S. (2015). Defining and measuring academic success. *Practical Assessment, Research & Evaluation*, 20(5), 1–20. doi: 10.7275/hz5x-tx03

Need-Supportive Leadership in Educational Settings: A Self Determination Theory-Based Review

Jonee O. Miranda^{1*}, Dorothy Joy Macaranas²

¹ Student of Graduate School, Angeles University Foundation, Angeles City, Philippines

¹ Faculty of College of Arts and Sciences, Department of Psychology, Angeles University Foundation, Angeles City, Philippines

²School Principal of Integrated School, Angeles University Foundation, Angeles City, Philippines

*Email : miranda.jonee@auf.edu.ph

Abstract

Need-supportive leadership, grounded in Self-Determination Theory (SDT), has emerged as a theoretically promising framework for understanding how school leaders shape the psychological well-being, motivation, and professional practices of faculty members. This literature review synthesizes empirical and theoretical evidence on need-supportive leadership in educational settings and addresses the following areas: (1) conceptualization and operationalization of need supportive leadership, (2) review the existing relationship of need supportive leadership on faculty basic psychological need satisfaction and other psychological outcomes (3) BPNS on need-supportive teaching and on (4) growth mindset. The review demonstrates that need-supportive leadership is a critical proximal determinant of faculty psychological well-being and professional functioning. The review identifies important gaps in the literature, including operationalization and measurement of the need-supportive leadership, insufficient longitudinal evidence, and an underrepresentation of non-Western educational contexts. Implications for school leadership in theory, practice, professional development, and future research are discussed.

Keywords: need-supportive leadership, self-determination theory, basic psychological needs, growth mindset, literature review

1. Introduction

The leadership role guides individuals and organizations. In a school setting, school leaders influence the quality of teaching, student learning, and the overall culture of the institution. A good school leader creates a learning-centered approach that prioritizes student learning and academic outcomes (Hallinger et al., 2020). Scholars have even identified leadership as a critical determinant of student success (Dutta & Sahney, 2016). Empirical evidence demonstrates that leadership is an important determinant of educational effectiveness, exerting indirect yet significant influence on student achievement by shaping organizational culture, teacher practices, and instructional conditions (Leithwood, 2005). Various leadership models and frameworks have been examined in the literature. Among the most widely studied are the traditional approaches, which include transformational and transactional leadership, which emphasize vision, inspiration, and performance exchange (Bass, 1990). In the educational context, instructional leadership has also gained prominence for its focus on teaching quality and learning outcomes (Hallinger, 2003). These classical and contemporary leadership frameworks have been a foundation for advancing the study of leadership.

However, in today's context, schools are increasingly confronted with rising cases of mental health concerns among both students and teachers, which directly influence academic performance, classroom engagement, and overall school climate (Suldo et al., 2016). These realities demonstrate that leadership can no longer be confined to structural, managerial, or purely instructional outcomes, as the psychosocial well-being of school communities has become an equally vital determinant of educational success. Classical and contemporary leadership frameworks, while valuable, have largely overlooked the psychological mechanisms through which leaders influence teacher well-being and professional functioning at a motivational level. The education system relies on effective school leadership, as it plays a crucial role in shaping a positive learning environment and influencing the motivational dynamics and professional practices of teachers.

One leadership approach that has increasingly gained attention in educational settings is need-supportive leadership, grounded in Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000). Unlike traditional leadership models that primarily emphasize organizational performance, instructional supervision, or managerial efficiency, and usually in industry contexts, need-supportive leadership focuses on how leaders shape the psychological and motivational experiences of employees within the workplace. Rooted in the fulfillment of the basic psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 2000), this perspective suggests that school leaders can foster healthier and more motivating environments by supporting teachers' sense of agency, professional competence, and belongingness. Emerging evidence suggests that such psychologically supportive environments are associated with higher levels of teacher motivation, engagement, well-being, and professional functioning (Collie et al., 2016; Liu et al., 2021; Slemp et al., 2018).

In increasingly demanding educational work contexts, where teachers are met with instructional, administrative, and psychosocial pressures simultaneously, need-supportive leadership offers a potentially important framework for promoting faculty growth, sustaining motivation, and enabling teachers to thrive. In response to these developments, the present paper synthesizes and examines existing literature on need-supportive leadership in educational settings through the lens of SDT. Specifically, the paper examines need-supportive leadership as an emerging SDT-based framework for educational leadership and discusses its relevance within educational workspaces. This paper reviews the conceptualization of need-supportive leadership, synthesizes existing evidence on its relationship with faculty basic psychological need satisfaction, and examines its implications for teacher well-being, motivation, and professional functioning. In addition, the paper identifies future research directions, particularly in understanding how psychologically supportive leadership environments may contribute to adaptive professional orientations such as growth mindset and teacher development.

2. Need-supportive Leadership

2.1 *What is Need-supportive Leadership*

Grounded in Self-Determination Theory (SDT), need-supportive leadership has emerged as a theoretically promising framework that highlights the leader's role in cultivating motivational and psychological experiences within organizational landscapes (Forner et al., 2021; Eyal & Roth, 2011). The SDT-based approach, compared to other leadership models, focuses on the degree to which school leaders support the satisfaction of the basic psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 2000; Slemp et al., 2018). From this perspective, leadership elevates from mere administrative or supervisory roles, serving instead as a vital psychosocial antecedent that can shape teacher well-being, engagement, and professional functioning. Conceptualization of need-supportive leadership involves behavioral patterns that provide professional agency, validate individual perspectives, and promote participative decision-making, alongside the provision of meaningful feedback and the development of trusting interpersonal climates (Hein et al., 2015; Slemp et al., 2018). Moving away from controlling or need-thwarting behaviors, this leadership orientation strives to foster educational workspaces where individuals feel a sense of agency, professional competence, and work belongingness.

Although increasingly examined in educational settings, need-supportive leadership has also been studied across organizational, workplace, sports, and health contexts. In workplace research, leader autonomy support has been associated with higher employee engagement, well-being, intrinsic motivation, and performance outcomes (Slemp et al., 2018; Gagné & Deci, 2005). Within healthcare and sports contexts, SDT-informed supportive environments have likewise been linked to sustained motivation and psychological well-being (Ntoumanis et al., 2020). In educational research, however, SDT research has more commonly focused on student motivation, and outcomes, or teacher practices rather than leadership itself as a central source of teacher psychological needs attainment. As a result, the conceptualization of educational leadership through a need-supportive lens remains comparatively

underdeveloped despite increasing recognition of the psychosocial demands experienced by teachers within contemporary educational environments.

Within educational settings, school leaders play a central role in shaping these motivational conditions. Educational leaders may foster need-supportive environments by creating structures and interactions that support teachers' autonomy, competence, and relatedness in their professional roles. Autonomy-supportive leadership may involve teachers in decision-making processes, valuing their professional perspectives, minimizing excessively controlling practices, and allowing meaningful professional discretion. Competence support may be demonstrated through constructive feedback, mentoring, professional development opportunities, and the provision of clear guidance and achievable expectations. Relatedness support, meanwhile, may emerge through respectful communication, trust-building, emotional support, and the cultivation of collegial and psychologically safe work environments (Jang et al., 2010; Stroet et al., 2013). Through these practices, educational leaders may contribute not only to organizational functioning, but also to the psychological conditions that enable teachers to sustain motivation, professional growth, and effective instructional practice within increasingly demanding educational contexts.

2.2 What happens when leadership satisfies faculty member's basic psychological need satisfaction?

Academically Need-supportive leadership may serve as an important antecedent for satisfying faculty members' basic psychological needs, thereby supporting their motivation, well-being, and professional functioning. It is characterized by enabling professional agency, recognizing faculty members' perspectives and expertise, providing constructive support, and fostering a work climate marked by trust, respect, and collegiality (Hein et al., 2015; Leithwood et al., 2020). For healthy growth and development, three needs must be satisfied. Autonomy support fosters a sense of control and active involvement in decision-making among team members. It emphasizes providing individuals with meaningful choices and encouraging their input, thereby supporting their intrinsic motivation and personal growth. Competence support involves offering appropriate challenges, constructive feedback, and guidance that enable individuals to experience effectiveness and mastery in their tasks, and Relatedness support refers to the feeling of belonging (Ryan & Deci, 2020).

Empirical evidence from both educational and broader organizational contexts supports these propositions. A meta-analysis by Slemp et al. (2018) emphasized that supportive leadership enhances employee well-being, autonomy, and performance. Likewise, consistently creating an environment that supports basic psychological needs is essential because it directly enhances both motivation and need satisfaction. This is proven in educational settings as Rothmann and Fouché (2018) found that teachers' perceptions of need-supportive leadership enhance motivation, increase engagement, and reduce intentions to leave. Autonomy support, through involving teachers in decisions and valuing their input, fosters a sense of control. Competence support, such as encouraging professional development, builds skills and confidence. Relatedness support, shown through approachability and trust, promotes a sense of belonging. Together, these leadership behaviors strengthen teacher motivation. A related study by Stenling et al. (2024) found that need-supportive leadership, especially through autonomy and relatedness support, is linked to reduced short-term sickness absence. Although the outcome examined by Stenling et al. (2024) is not motivation per se, their study remains relevant as it highlights the effects of need-supportive leadership on related constructs such as psychological need satisfaction and its negative outcomes. Similarly, Olafsen et al. (2015) examined managerial need support in terms of autonomy and competence, both of which were found to significantly predict employees' psychological need satisfaction and intrinsic motivation compared to financial compensation.

Consistent with SDT, the basic psychological needs satisfaction serves as pathway through which leadership supports motivation and well-being outcomes. When school leaders actively support their faculty members competence, autonomy and relatedness this enhances faculty members their motivation,

well-being, and engagement (Collie et al., 2016; Liu et al., 2021), as well as promote more need-supportive teaching practices (Reeve, 2009). Similarly, Liu et al. (2021) found that supportive school culture and teacher collaboration were positively associated with teacher self-efficacy and job satisfaction.

Findings from student perspectives highlighted the impact and need for supportive and different outcomes. Liebowitz and Porter (2019) found through meta-analysis that leadership is a critical factor in student learning and related outcomes. In the health domain, a meta-analysis by Ntoumanis et al., (2020) found that SDT-based interventions led to small-to-medium improvements in health behaviors and psychological outcomes, with positive effects linked to need support and autonomous motivation, but not controlled motivation. This findings reinforces the SDT-informed leadership across professional context, this suggest that need-supportive leadership not only affect motivation but also their psychological and physical outcomes over time.

Beyond motivational and well-being outcomes, emerging evidence suggests that a need-satisfied faculty may also foster adaptive professional orientations among teachers, including the development of a growth mindset. A growth mindset is the belief that abilities and intelligence can be developed through dedication and effort (Dweck, 2006), this has been recognized as a psychological resource. A meta-analysis study Luo et al. (2025) found that teachers with strong growth mindsets exhibited higher levels of basic psychological need satisfaction, and that the school working environment interacted with growth mindset to jointly influence teachers' professional identity. Consistent with this, a growth mindset has been identified as a meaningful psychological resource that helps teachers cope with job demands and improve their well-being (Zilka et al., 2023), suggesting that need-fulfilling school environments may serve as a critical antecedent to the development of this adaptive professional orientation among faculty. Despite this emerging evidence, the relationship between perceived need-supportive leadership and growth mindset of faculty members remains inadequately examined in the empirical literature. Given the positive effects of growth mindset, future research should examine the role of leadership in educational and organizational context on growth mindset

2.3 How does need satisfaction influence teaching?

Studies grounded in Self-Determination Theory suggest that teachers whose own psychological needs for autonomy, competence, and relatedness are satisfied are more likely to engage in need-supportive teaching practices. These findings indicate that faculty members' psychological need satisfaction may facilitate the adoption of supportive instructional behaviors that nurture students' motivation and well-being (Collie, 2021; Howard et al., 2024). A study by Fiero et al. (2021) indicates a significant positive relationship between students' perceived novelty support and the satisfaction of their basic psychological needs. Same with the meta-analysis study reported that the need-supportive teacher behaviors are positively correlated with student performance, engagement, and well-being, and thwarting behaviors are related to negative outcomes (Howard et al., 2024).

Another study by Boer et. al. 2025 demonstrated that when teachers are functioning positively, this in turn be more supportive in their teaching behaviors. This means that if teachers are psychologically fulfilled, this means that they are capable of sustaining supportive teaching behavior. A meta-analysis synthesized findings from 637 samples and reported that teachers who experienced psychological need satisfaction and well-being were perceived as more need-supportive by students (Howard et. al. 2025). A latent profile analysis was conducted and showed that those who provide balanced support to the students (autonomy, support and competence) this leads to student motivation and achievement. (Hornstra et. al. 2020).

These studies proved that when faculty members are psychologically satisfied, this could extend to the classroom and could create a positive learning environment, and affect the students positively.

3. Conclusion

This review positions need-supportive leadership as a useful SDT-based lens for understanding how educational leaders may influence faculty motivation, well-being, and professional functioning. SDT emphasizes the psychological conditions that allow teachers to function well: autonomy, competence, and relatedness. The reviewed literature suggests that when these needs are supported, faculty members may experience better motivation, engagement, well-being, and better capacity to create supportive learning environments for students. At the same time, the review highlights the need for clearer operationalization of need-supportive leadership in educational settings, especially given the varied and often less hierarchical nature of school and university leadership. Overall, the potential implications of need-supportive leadership point to the need for educational institutions to treat faculty motivation and well-being as part of institutional quality. By supporting autonomy, competence, and relatedness, educational leaders can create work environments where teachers are more likely to remain motivated, professionally engaged, and capable of extending the same supportive conditions to their students. In this sense, need-supportive leadership offers a promising lens for aligning faculty development, teacher well-being, and educational quality.

Recommendations for Further Studies

Most existing studies on need-supportive leadership and its outcomes have used cross-sectional designs, which limit conclusions regarding directionality and causality. Future research may consider employing longitudinal, experimental, and quasi-experimental designs to provide stronger causal evidence and support the development of evidence-based leadership and faculty development programs.

A key direction is the further refinement of how need-supportive leadership is measured and operationally defined in educational settings. This is important because “leadership” in schools and universities is often distributed across different levels, such as senior faculty, program heads, deans, and top management. Unlike industry or military settings, school organizational structures may be less strictly hierarchical and more collegial, making leadership influence more ambiguous. Faculty members may therefore experience different forms of leadership from different “leaders”, making it difficult to determine whose leadership is being measured.

There is also a need to distinguish need-supportive leadership from the broader work environment, since faculty perceptions of leadership may overlap with perceptions of institutional climate, peer support, workload, and organizational culture. Future studies may benefit from clearer referents in measurement, educational-context-specific instruments, and the use of multilevel modeling to examine how leadership operates across individual, unit, and institutional levels. The influence of need-supportive leadership on an institutional level, may also be investigated where its influence may cut across the entire institutional climate.

Another direction is to study the three psychological needs separately rather than relying only on a global measure. While a global score is useful, examining autonomy, competence, and relatedness individually may provide deeper insight into how different leadership behaviors affect teachers or outcomes. For example, some leaders may strongly support competence through feedback and mentoring but provide limited autonomy in decision-making. Others may foster relatedness and collegiality but fail to provide sufficient structure for competence. Studying the needs separately may help identify which specific needs are most strongly related to outcomes of interest, and determine if there are differential relationships.

Finally, future research should examine the possible spillover of teachers’ need satisfaction or need frustration into classroom and learning environments. If teachers experience autonomy, competence, and relatedness in their work, they may be more capable of creating similarly supportive conditions for students. Conversely, when teachers experience need-thwarting leadership or psychologically unsupportive work environments, these experiences may affect their instructional style, relations with students, and classroom climate. This line of investigation can help connect educational leadership, teacher well-being, and student learning more directly within a single SDT-based framework.

References

- Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18(3), 19–31. [https://doi.org/10.1016/0090-2616\(90\)90061-s](https://doi.org/10.1016/0090-2616(90)90061-s)
- Boer, I., Hornstra, L., van de Pol, J. et al. Teacher expectations: associations with need supportive teaching and students' need satisfaction. *Eur J Psychol Educ* 40, 77 (2025). <https://doi.org/10.1007/s10212-025-00974-2>.
- Collie, R. J., Shapka, J. D., & Perry, N. E. (2016). School climate and social–emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Journal of Educational Psychology*, 108(8), 1189–1204. <https://doi.org/10.1037/edu0000128>.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum. <https://doi.org/10.1007/978-1-4899-2271-7>
- Dutta, V., & Sahney, S. (2016). School leadership and its impact on student achievement: The mediating role of school climate and teacher job satisfaction. *International Journal of Educational Management*, 30(6), 941–958.
- Eyal, O., & Roth, G. (2011). Principals' leadership and teachers' motivation: Self-determination theory analysis. *Journal of Educational Administration*, 49(3), 256–275. <https://doi.org/10.1108/09578231111129055>
- Fierro-Suero, S., Almagro, B. J., Sáenz-López, P., & Moreno-Murcia, J. A. (2021). Perceived novelty support and psychological needs satisfaction in physical education. *Frontiers in Psychology*, 12, 703440. <https://doi.org/10.3389/fpsyg.2021.703440>
- Forner, V. W., Jones, M., Berry, Y., & Eidenfalk, J. (2021). Motivating workers: How leaders apply self-determination theory in organizations. *Organization Management Journal*, 18(2), 76–94. <https://doi.org/10.1108/OMJ-03-2020-0891>
- Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4), 331–362. <https://doi.org/10.1002/job.322>
- Hein, V., Ries, F., Pires, F., Caune, A., Emeljanovas, A., Ekler, J. H., ... & Valantiniene, I. (2015). The relationship between teaching styles and motivation to teach among physical education teachers. *Journal of Sports Science and Medicine*, 14(3), 646–653.
- Hallinger, P. (2003). Leading Educational Change: reflections on the practice of instructional and transformational leadership. *Cambridge Journal of Education*, 33(3), 329–352. <https://doi.org/10.1080/0305764032000122005>
- Hornstra, L., Stroet, K., & Weijers, D. (2020). Profiles of teachers' need-support: How do autonomy support, structure, and involvement cohere and predict motivation and learning outcomes? *Teaching and Teacher Education*, 99, 103257. <https://doi.org/10.1016/j.tate.2020.103257>
- Howard, J. L., Slemp, G. R., & Wang, X. (2025). Need Support and Need Thwarting: A Meta-Analysis of Autonomy, Competence, and Relatedness Supportive and Thwarting Behaviors in Student Populations. *Personality and Social Psychology Bulletin*, 51(9), 1552–1573.
- Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, 102(3), 588–600. <https://doi.org/10.1037/a0019682>
- Leithwood, K. (2005). *Educational leadership: A review of the research*. Philadelphia, PA: Laboratory for Student Success, Temple University Center for Research in Human Development and Education. (ERIC Document Reproduction Service No. ED508502)
- Liebowitz, D. D., & Porter, L. (2019). The effect of principal behaviors on student, teacher, and school outcomes: A systematic review and meta-analysis of the empirical literature. *Review of Educational Research*, 89(5), 785–827. <https://doi.org/10.3102/0034654319866133>

- Liu, Y., Bellibas, M. S., & Gümüş, S. (2021). The effect of instructional leadership and distributed leadership on teacher self-efficacy and job satisfaction: Mediating roles of supportive school culture and teacher collaboration. *Educational Management Administration & Leadership*, 49(3), 430–453. <https://doi.org/10.1177/1741143220910438>
- Luo, W., Ni, X., Wang, C., Wang, J., Zeng, Y., & Yu, C. (2025). How do different perceived school goal structures affect Chinese kindergarten teachers' professional identity? The role of basic psychological needs satisfaction and growth mindset. *Frontiers in Psychology*, 16, 1588334. <https://doi.org/10.3389/fpsyg.2025.1588334>
- Madigan, D. J., & Kim, L. E. (2021). Does teacher burnout affect students? A systematic review of its association with academic achievement and student-reported outcomes. *International Journal of Educational Research*, 105, Article 101714. <https://doi.org/10.1016/j.ijer.2020.101714>
- Ntoumanis, N., Ng, J. Y., Prestwich, A., Quested, E., Hancox, J. E., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Lonsdale, C., & Williams, G. C. (2020). A meta-analysis of self-determination theory-informed intervention studies in the health domain: effects on motivation, health behavior, physical, and psychological health. *Health Psychology Review*, 15(2), 214–244. <https://doi.org/10.1080/17437199.2020.1718529>
- Nuis, W., Segers, M., & Beausaert, S. (2023). Conceptualizing mentoring in higher education: A systematic literature review. *Educational Research Review*, 41, Article 100565. <https://doi.org/10.1016/j.edurev.2023.100565>
- Olafsen, A. H., Halvari, H., Forest, J., and Deci, E. L. (2015). Show them the money? The role of pay, managerial need support, and justice in a self-determination theory model of intrinsic work motivation. *Scand. J. Psychol.* 56, 447–457. doi: 10.1111/sjop.12211
- Ogba, F. N., Okolie, U. C., Igu, N. C., Oluka, B. N., Binuomote, M. O., & Awe, B. A. (2025). Basic Psychological Needs and Student Engagement in Work Placement Learning Tasks: A Moderated Mediation Model. *SAGE Open*, 15(2). <https://doi.org/10.1177/21582440251339099>
- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, 44(3), 159–175. <https://doi.org/10.1080/00461520903028990>
- Rothmann, S., & Fouché, G. (2018). School principal behaviour: Measuring need-supportive and need-thwarting leadership. *Journal of Psychology in Africa*, 28(5), 395–400. <https://doi.org/10.1080/14330237.2018.1528760>
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Slemp, G. R., Kern, M. L., Patrick, K. J., & Ryan, R. M. (2018). Leader autonomy support in the workplace: A meta-analytic review. *Motivation and Emotion*, 42(5), 706–724. <https://doi.org/10.1007/s11031-018-9698-y>
- Stenling, A., Nielsen, K., Olafsen, A. H., & Tafvelin, S. (2024b). Need-supportive leadership behaviors and sickness absence among employees: The mediating role of basic psychological need satisfaction. *Applied Psychology*, 73(4), 1688–1698. <https://doi.org/10.1111/apps.12523>
- Stroet, K., Fokkens-Bruinsma, M., & de Bilde, J. (2023). A longitudinal perspective on teacher motivation: The role of need satisfaction, teaching behavior, and student outcomes. *Teaching and Teacher Education*, 121, 103983. <https://doi.org/10.1016/j.tate.2023.103983>
- Suldo, S. M., Thalji-Raitano, A., Kiefer, S. M., & Ferron, J. M. (2016). Conceptualizing high school students' mental health through a Dual-Factor model. *School Psychology Review*, 45(4), 434–457. <https://doi.org/10.17105/spr45-4.434-457>
- Zilka, G. C., Cohen, R., & Rahimi, I. D. (2023). Teacher resilience: What helps teachers cope with online teaching challenges? *Frontiers in Psychology*, 14, 1155336. <https://doi.org/10.3389/fpsyg.2023.1155336>

Visual Identity Assets for Higher Education Institutions

Edric S. Torres

WCC ATC, WCC Colleges, Polytechnic University of the Philippines

Email : edrictorres1985@gmail.com

Abstract

Higher Education Institutions (HEIs) need to establish their institutional reputation through branding because they operate in a competitive market environment that requires effective institutional branding for recognition and trust from stakeholders. The research study seeks how branding elements, visual identity components, and internal stakeholder participation work together to create the WCC Education System branding process. Employees and faculty members work as co-creators while staff members function as brand ambassadors to demonstrate internal branding. The study investigates how stakeholders construct brand meaning through their interactions while showing the tension between academic values and corporate branding strategies which include commercialization and Westernization and the need to maintain local cultural identity. An interpretivist-constructivist research framework is used which applies Critical Theory to examine how social groups perceive and interpret branding practices. The findings reveal that authentic institutional branding development requires organizations to maintain branding consistency while their employees engage with the brand and their internal processes align through effective organizational governance. A Visual Identity Framework for WCC is created which combines branding strategy, governance, internal branding, stakeholder engagement, and reputation management to solve visual identity problems and improve institutional identity. The research study demonstrates that Philippine university branding operates as a social construction process which develops competitive advantage while building trust with stakeholders.

Keywords: Visual Identity Assets, Higher Education Institutions, Sense-making, Employee Engagement

1. Introduction

Higher Education Institutions (HEIs) compete against other educational institutions in a marketplace that require them to use branding as their primary method for achieving institutional development, recognition, and long-term viability. Universities, today, serve dual functions because these institutions must meet educational and research needs whilst building distinct institutional brands that help attract students, faculty, stakeholders and industry partners. Institution-based branding systems now use corporate branding methods as educational institutions need to protect their institutional reputation and maintain their competitive edge in both domestic and international markets.

Visual identity functions as the most important part of institutional branding because it defines how institutions market themselves to the public. Visual identity encompasses all visual design elements which include logos, typography, color palettes, imagery and communication materials to create a visual representation of an institution's identity and core values. The existing research shows that institutions build trust, recognition, and stakeholder loyalty through their use of a consistent visual identity. Researchers Dwitasari et al. (2024) and Ong et al. (2025) demonstrated that branding consistency establishes professional business operations which create a stable environment that builds stakeholder trust in the organization. Organizations that use inconsistent branding methods will experience difficulties because their audience will struggle to remember their brand and their institutional reputation will suffer.

The current academic studies demonstrate that internal branding at universities has become a significant area of research. Internal stakeholders who include faculty members and administrators and employees hold crucial roles in developing brand identity because they create direct contact with institutional processes and stakeholder interactions. Studies by Mampaey et al. (2020) and Dean et al. (2016) demonstrate that employees function as both brand ambassadors and institutional identity co-developers. The institution must implement efficient internal communication systems together with employee participation programs and human resource strategic management practices to achieve

institutional value implementation throughout all organizational departments.

Higher education institutions now consider branding to be essential for their operations; however, academic institutions still face multiple brand-related disputes and brand-related conflicts. Critics argue that universities should not adopt corporate branding strategies because these strategies contradict fundamental academic principles which include intellectual freedom and cultural diversity and academic independence. According to critical branding scholars, excessive marketization of education results in the transformation of educational institutions into commercial entities instead of public-service organizations. The postcolonial perspectives in the Philippine and Southeast Asian regions show that university branding practices tend to favor Western standards, which results in the rejection of local cultural elements and indigenous knowledge and national identity.

For conglomerates such as the World Citi Group (WCG), a family-owned business enterprise with an educational system that has a vision to be a center of excellence in business, education, leisure, construction, information technology, and healthcare, having a clear and consistent visual identity is not only a reflection of the education system's mission and values, but also a key factor in boosting its visibility and reputation. A strong visual identity fosters institutional credibility and reinforces trust among stakeholders.

The history of World Citi Education System is a continuing saga of transitions validating its stability and trajectories while proving its aggressive and innovative spirit. Rooted in its calling 'to serve and to care', it continues its purpose-driven pursuit of excellence. Over 53 years of service, World Citi Education System has established campuses in Antipolo (Rizal), Guimba (Nueva Ecija), Quezon City (NCR), Binalonan (Pangasinan), and North Manila (NCR). Due to the geographic differences, maintaining a unified visual identity across World Citi campuses is essential to ensuring brand consistency and institutional credibility.

The WCC Education System must deal with problems that arise when it tries to create a consistent visual identity which should be used throughout all its campuses and departments. The organization requires a comprehensive visual identity system because its current branding procedures create different visual elements and its stakeholders have different needs. Organizations need to develop their visual identity system because this process provides external recognition and helps organizations achieve internal operational harmony throughout their organization while enhancing their institutional status.

Objectives

The purpose of this research is to investigate the policies, practices, and context of use regarding the WCC Education System's visual identity while exploring how these assets intersect with and influence employee engagement. Guided by global marketization and the increasing competition in higher education, the study seeks to evaluate how branding policies are communicated and implemented across five campuses. It aims to measure the levels of awareness and compliance among faculty and staff concerning core brand elements such as logos, color palettes, and typography. Determine the extent to which these assets are associated with the psychological conditions of engagement, namely meaningfulness, safety, and availability. Furthermore, the research examines how human resources integrate visual identity into organizational functions like onboarding programs and internal communication manuals. The study intends to develop comprehensive Visual Identity Assets.

Framework to help higher education institutions (HEIs) standardize branding, foster institutional pride, and build long-lasting stakeholder trust in a growing and changing market.

The study did not determine its respondent / participants based on their level of job satisfaction or dissatisfaction. They were selected by their respective Campus Directors of WCC campuses. Also, aspects that have financial implications are not covered in this study. They may be pursued as undertaken by future researchers.

Statement of the Problem

The study aimed to investigate the policies, practices, and context of use related to WCC

Education System's (WCC) visual identity assets, and exploring the intersection of these assets towards employee engagement.

More specifically, the study sought to find out the following:

1. How are the current policies and practices governing the use of WCC's visual identity assets communicated and implemented across different campuses?
2. What is the extent of influence on the use of WCC's visual identity assets across various campuses in terms of:
 - A. Level of Awareness; and
 - B. Level of Compliance?
3. What is the extent of association of WCC's visual identity assets on Employee Engagement?
4. Is there a significant relationship between the extent of influence on the use and the extent of association of WCC's visual identity assets across various campuses?
5. How does HR incorporate visual identity assets into its functions, such as employee orientation, internal communication, and HR manuals, and how are violations of visual identity policies addressed from an HR perspective?
6. Based on the findings, what Visual Identity Assets Framework can be developed for Higher Education Institutions?

2. Methodology

Research Design

The primary design utilized was the Convergent Mixed Method Design, allowing for a better understanding of how WCC's visual identity affects employee engagement. The design makes use of both quantitative and qualitative data that were simultaneously collected and separately examined. The two sets of data are then compared to make sense of both. Additionally, both sets of data are equally integral to the study. This method enables the researcher to combine statistical patterns with individual views from participants allowing for a comprehensive picture (Creswell & Plano Clark, 2018).

Furthermore, the use of an Instrumental Case Study design was utilized as well in the study, aiming for a more general theoretical understanding of internal branding in HEIs (Stake, 2010). This is achieved through focusing on the unique case of WCC as means to understand the general issues of internal branding in HEIs. The contextual knowledge acquired from the WCC Education System serves as general knowledge which can be assumed for other similar HEIs.

Participants/Respondents

The study utilized purposive sampling in harvesting qualitative data. Executives of the WCC Education System were interviewed to elicit strategic perspectives on university visual identity, policymaking, communication and implementation challenges particularly with the tension between corporate and local identities across the institution's multiple campuses. Heads of administrative departments such as the dean, principal, registrars, etc. were also interviewed for their insights as to how visual identity assets were integrated into the institution's human resource functions. Lastly, alumni, parents and partners were interviewed for their insights as external stakeholders.

As for the quantitative data, a stratified random sampling method was used for the survey portion of the research. A sample size of 242 respondents was gathered across five different campuses as determined through Slovin's formula. The study ensured that proportional allocation was practiced for sufficient representation of all groups and departments.

All data and respondents were gathered from all five campuses of the WCC Education System namely: WCC Colleges Quezon City, WCC Colleges Antipolo, WCC Colleges Guimba, WCCATC North Manila, and WCC-ATC Binalonan. The multi-campus structure of WCC was beneficial in exploring the centralized brand identity of the institute and how it differs from local implementation to various institutional contexts. Additionally, the multi-campus structure and cross-campus approach enriched the

findings and broadened the applicability of the study.

Instrumentation

Executive Interview

Guide

- Interview guide designed for RQ1 to elicit strategic perspectives on visual identity policy development, communication and implementation challenges, particularly regarding tension between corporate and local identities across WCC's multi-campus structure.
- Designed particularly for executives to understand strategic intent behind branding efforts.

Employees' Interview Guide

- Interview guide designed for RQ5, aiming to explore employee experience and perceptions of how HR incorporated visual identity assets into its functions and how policy violations were addressed from an HR perspective.
- Employees were crucial in providing insights into the “theory-in-use” - the actual practices and experience from a grounded level. These experiences on a baser level may differ from the “espoused theory”.

Descriptive Survey

- Self-made survey questionnaire focused on answering RQ2 and RQ3
- First part was a 10-item survey questionnaire designed to gauge “Level of Awareness” among WCC Education System employees regarding the institution's visual identity. This aims to measure employee understanding of various facets of the institution's visual identity assets, associated policies, proper usage protocols, and their knowledge of where to access relevant resources and stay updated.
- Another 10-item questionnaire was administered designed to assess the “Level of Compliance” among WCC Education System employees. This questionnaire was more focused on behavioral adherence, inquiring about employees' practical application of the established visual identity guidelines in their work life, communications and interactions.
- The second part was a self-made 30-item questionnaire designed to iterate how WCC's Education System's visual identity could be leveraged to enhance psychological meaningfulness, psychological safety and psychological availability.
- Both instruments made use of a 5-point Likert scale.
- The validity of the survey questionnaire was established using the Expert's Assessment Checklist. The experts were composed of (1) Communication expert, (1) Industry Expert and (1) Psychometrician. Reliability was established using Cronbach Alpha in SPSS 29.

Data Collection

The researcher secured a permit from the office of the WCC Education System President to gather the data required. After the permit was secured, the instruments were administered to the 5 campuses with the assistance of campus directors. The campus directors were briefed for the proportional allocation and random selection of samples from each department. The collected data was then encoded, consolidated and analyzed.

3. Results and Discussion

A self-made survey questionnaire is used to assess the “level of awareness” among WCC employees regarding the institute's visual identity. Tables 1 and 2 show the level of their awareness and compliance.

Table 1 *Awareness*

Indicators	Mean	Interpretation
1. Awareness of WCC's Official Logo and its proper usage guidelines.	3.93	Aware
2. Awareness of specific guidelines in using WCC's official color palette in my work.	3.93	Aware
3. Awareness of WCC's official typography (fonts) and where/how to apply them.	3.83	Aware
4. Knowledge of where to access the most current and official WCC visual identity guidelines and assets (e.g., templates, image library).	3.73	Aware
5. Familiarity with WCC's preferred imagery style and guidelines for selecting/using visuals in communications.	3.62	Aware
6. Understanding of WCC's brand voice and messaging guidelines for written and verbal communications.	3.60	Aware
7. Awareness of any specific visual identity guidelines that apply to my department or any sub-brands being worked with (if applicable).	3.63	Aware
8. Receipt of regular updates or communications regarding WCC's visual identity guidelines or any brand refreshes.	3.55	Aware
9. Recall of receiving training or an orientation on WCC's visual identity guidelines, either during onboarding or through ongoing initiatives	3.48	Neutral
10. Understanding of how WCC's visual identity connects to its overall brand story, values, and mission	3.44	Neutral
Total	3.70	Aware

Table 1 shows the level of awareness among WCC employees in terms of the institute's visual identity as well as how these different assets are being used. Having the highest mean of 3.93 (**Aware**), the employees of the institution are both aware of WCC's official logo, the guidelines for its proper usage, as well as the specific guidelines in using the institute's official color palette in their works. Second to the highest having a mean of 3.83, which is also interpreted as **Aware**, employees have some understanding/idea of the official typography of the institute, how to use it, as well as a general grasp of how to use fonts correctly.

Based on the employees' response to the survey, they understand the connection of WCC's visual identity to its overall brand story, values, and mission. However, it has the lowest mean of 3.44 and is interpreted as **Neutral**. In general, the employee's level of awareness to WCC's visual identity has a mean of 3.70 and is interpreted as **Aware**.

Table 2 *Compliance*

Indicators	Mean	Interpretation
1. Consistent use of WCC's official logo and its approved variations on all relevant institutional documents and communications.	3.42	Neutral
2. Adherence to WCC's official color palette and typography in professional materials (e.g., presentations, reports, emails).	3.37	Neutral
3. Creation of new materials (digital or print) in reference to WCC's visual identity guidelines.	3.36	Neutral
4. Usage of all imagery and visuals in communication align with the WCC established imagery style guidelines.	3.34	Neutral
5. Consistent reflection of WCC's official brand voice and messaging guidelines in written and verbal communications.	3.38	Neutral
6. Application of WCC's visual identity guidelines consistently across various communication channels (e.g., social media, website, internal memos).	3.34	Neutral
7. Seek clarification or consult the official guidelines for uncertain specific visual identity.	3.38	Neutral
8. Adherence to WCC's visual identity guidelines for materials they produce is used for any external vendors or partners.	3.33	Neutral
9. Consistently adheres to WCC's visual identity guidelines in its communications as a team.	3.42	Neutral
10. Actively contribute in maintaining the consistent use of WCC's visual identity assets.	3.37	Neutral
Total	3.38	Neutral

Table 2 demonstrates the extent to which WCC Education System's visual identity influences their actual use across different campuses in terms of level of compliance. Having the highest mean of 3.42 which is interpreted as **Neutral**. This shows that employees across campuses are mostly compliant with using the official logo which makes WCC's visual identity recognizable. This also suggests that the core symbol of the institution is well-established. The second highest mean which also has 3.42, is also interpreted as **Neutral**. This suggests that teamwork and shared responsibility play an important role in maintaining visual identity compliance, although the level of consistency is still moderate.

The results support the study of Ward et al. (2018) which states logos are the most identifiable and easiest visual identity element to enforce, which is why these indicators scored the highest in compliance. However, the lower rankings and neutral interpretations for imagery use, multi-channel application, and external vendor compliance suggest that the visual identity system is not yet fully embedded in everyday practice. These indicators have a mean ranging from 3.33 and 3.34 which suggests a need for clearer enforcement, regular monitoring, and stronger guidance. Nonetheless, the overall mean of the survey for employee's compliance with WCC's visual identity is 3.38, interpreted as **Neutral**.

Table 3 *Meaningfulness*

Indicators	Mean	Interpretation
1. Seeing WCC's visual identity makes me feel that my work has value beyond completing tasks.	3.22	Neutral
2. When WCC's branding is present, I feel clearer on the direction of my work	3.21	Neutral
3. The use of WCC-branded items strengthens my belief that I am contributing to a worthwhile mission.	3.31	Neutral
4. The presence of WCC's visual identity in my workspace reminds me that my role has purpose.	3.18	Neutral
5. When I engage with WCC's visual branding, I feel my work is aligned with something bigger than myself.	3.13	Neutral
6. I feel more committed to my responsibilities when visual elements reflect WCC's mission and values.	3.07	Neutral
7. Branded materials from WCC reinforce my belief that the work I do matters.	3.01	Neutral
8. Seeing visual representations of WCC's goals motivates me to put more intention into my tasks.	3.03	Neutral
9. When I notice WCC's visual identity in my environment, I feel that my contributions are part of a meaningful goal.	3.12	Neutral
10. The use of consistent branding at WCC helps me see how my work fits into a larger purpose.	3.07	Neutral
Total	3.13	Neutral

Table 3 illustrates the extent of association of WCC Education System's visual identity assets on employee engagement in terms of meaningfulness across the different campuses. The highest-ranking indicator having a mean of 3.31 (**Neutral**). This indicates that tangible branding elements, such as branded materials, are the most effective in helping employees associate their work with a sense of purpose. Following this, the second highest ranking indicator that has a mean of 3.22 and also interpreted as **Neutral**, makes employees feel that their work is valued, and it also shows that visual identity somewhat helps employees view their work as meaningful beyond routine duties.

Consistent with **Weick's (1995)** sensemaking theory, employees derive purpose through daily interactions, narratives, and shared experiences rather than through static visual symbols alone. The lower-ranking indicators in this study align with this view, suggesting that visual cues are primarily surface-level and less effective at driving deep, personal engagement. With mean scores ranging from **3.01 to 3.03**, it is evident that WCC's visual identity assets serve a supportive but ultimately limited role in fostering a genuine sense of meaningfulness among the workforces.

Table 4 *Safety*

Indicators	Mean	Interpretation
1. WCC's visual identity fosters confidence in expressing my thoughts without fear of judgement	2.97	Neutral
2. The WCC identity creates a sense of safety that encourages honest input	2.96	Neutral
3. The visual elements used at WCC make me feel respected and included in the work environment.	3.00	Neutral
4. The professional presentation of WCC's branding reinforces my trust that my ideas are valued.	2.94	Neutral
5. WCC's visual identity communicates that different perspectives are welcome.	2.97	Neutral
6. WCC's visual identity affirms that I can contribute freely without harming my self-image.	2.93	Neutral
7. The environment shaped by WCC's branding makes open communication feel encouraged.	2.89	Neutral
8. WCC visual identity supports a culture where I feel safe speaking up in groups.	2.92	Neutral
9. WCC's design language helps create a workplace where I feel psychologically secure	2.93	Neutral
10. I feel more engaged in team settings because WCC's visual identity signals mutual respect.	2.90	Neutral
Total	2.94	Neutral

Table 4 presents the extent of association of WCC's visual identity assets on employee engagement in terms of safety across the different campuses. Overall, the results show that employees' perceptions fall largely within the Neutral range, with an overall weighted mean of 2.94, indicating that WCC Education System's visual identity moderately contributes to feelings of safety-related engagement

but does not yet strongly reinforce it. The highest-ranking indicator, having a mean of 3.00 is interpreted as **Neutral**, which indicates that employees feel respected and included in the work environment. Following this, the indicators number 1 and number 5 are both tied to have a mean of 2.97 which is also interpreted as **Neutral** which implies that WCC Education System's branding somewhat supports psychological safety and openness, but the impact is not yet strong or consistent.

Edmondson & Bransby (2023) argues that psychologically safe work environments encourage employees to speak candidly, share concerns, ask questions, and offer ideas because they perceive interpersonal risk to be low, a climate fostered by trust, supportive leadership, and mutual respect. The lowest ranking indicator that has a mean ranging from 2.89 to 2.90 indicates that visual identity has limited influence on group dynamics and engagement related to safety and it also shows that branding alone is least effective in promoting open communication. However, the consistently neutral ratings across all indicators suggest that visual identity by itself is not a strong driver of psychological safety, open communication, or confident participation.

Table 5 *Availability*

Indicators	Mean	Interpretation
1. The visual identity of WCC helps me stay mentally organized and focused on my task	3.15	Neutral
2. WCC identity reduces the effort I need to start or complete work	3.10	Neutral
3. The use of WCC visual identity improves my readiness to contribute productively.	3.08	Neutral
4. WCC's clear design and layout help me conserve energy for higher-priority work	3.08	Neutral
5. Visual identity of WCC reduces ambiguity and supports better decision-making	3.06	Neutral
6. The WCC branding of documents and platforms increases my mental clarity and workflow efficiency.	2.93	Neutral
7. WCC's visually coherent environment helps me manage time and responsibilities more effectively	3.11	Neutral
8. The organized presentation of branded content supports my emotional focus throughout the day	3.06	Neutral
9. WCC's visual materials provide structure that enhances my confidence and preparedness	3.03	Neutral
10. I am better able to stay engaged because the visual identity reduces distractions and confusion	2.89	Neutral
Total	3.05	Neutral

Table 5 illustrates the extent of association of WCC's visual identity assets on Employee Engagement in terms of Availability. The data yields an overall weighted mean of **3.05 (Neutral)**. This suggests that while the WCC Education System's visual identity moderately supports employee availability and readiness, its influence is neither strong nor consistent across campuses. The **Highest Impact (Rank 1 & 2):** Visual identity is most effective at supporting **mental organization, task focus, and time management** (Means: 3.15 and 3.11). **Moderate Impact (Rank 3–6.5):** Branding provides slight assistance in **reducing work-related mental effort, improving productivity readiness, conserve energy for higher-priority work, reduces ambiguity, better decision-making and supports emotional focus for the day** (Means: 3, 4.5, 4.5, 6.5, 6.5). **Lowest Impact (Rank 8–10):** Visual identity has the least influence on **confidence, preparedness, mental clarity, workflow efficiency, and reducing distractions** (Means: 3.03, 2.93, and 2.89). The Neutral findings indicate that visual assets serve as a **supplementary tool** rather than a primary driver of engagement.

According to **Weick's Sensemaking Theory** employees draw focus from routines and interactions more than symbolic imagery. While in **Edmondson's Psychological Conditions** it is said that availability is driven more by clear expectations and environmental support systems. **Dwitasari et al. (2024)** posit that visual identity only enhances engagement when backed by operational clarity and strong leadership. While visual coherence helps reduce minor cognitive friction, it cannot compensate for structural issues. For better development, visual identity must align more closely with actual workflows and decision-making processes. Refine branding to specifically target the reduction of distractions and the reinforcement of operational clarity. Recognize that cognitive concentration is more heavily influenced by job structure and workload design than by aesthetics alone.

4. Conclusion

Based on the data gathered and results of the study, the following significant findings were

revealed; first, the current policies and practices governing the use of WCC Education System's visual identity assets are communicated and implemented across different campuses. Second, the extent of influence on the use of WCC's visual identity assets across various campuses in terms of Level of Awareness and Level of Compliance. Third, the extent of association of WCC Education System's visual identity assets on Employee Engagement. Fourth, the significant relationship between the extent of influence on the use and the extent of association towards employee engagement of WCC Education System's visual identity assets across various campuses. Fifth, HR incorporates visual identity assets into its functions, such as employee orientation, internal communication, and HR manuals for how violations of visual identity policies are addressed from an HR perspective. Lastly, Visual Identity Assets Framework for WCC Colleges and WCC Aeronautical and Technological College.

Recommendations

Based on the findings and conclusions of the study on the Visual Identity Assets Framework at WCC Colleges and WCC Aeronautical and Technological College, the following recommendations are offered:

All academic personnel must undergo orientation and capacity-building activities as the priority with regular training sessions, workshops, and onboarding programs. A Visual Identity Council and choosing Brand Champions should be set up for each department as it helps with oversight, compliance monitoring, and peer responsibility. Students shall undergo a dedicated orientation on Visual Identity Assets Framework to ensure their understanding of its standards. To promote a culture of shared responsibility and institutional pride, recognition and incentive systems should be put in place, encouraging active engagement and strict adherence to visual identity guidelines.

It is also strongly recommended that WCC Colleges and WCC ATC make the Visual Identity Assets Framework official at all of their campuses; making clear, precise rules on branding standards, setting explicit roles and duties for departments, and coming up with ways to measure compliance. Standardized visual identity elements like logos, color palettes, typography, templates, and message guidelines should be utilized in all academic and administrative activities to make sure that everything is consistent, boost the institution's credibility, and help create a united brand image.

WCC Colleges and WCC ATC should set up a systematic way to keep an eye on and evaluate how well visual identity governance is working. This should involve regular checks of official documents, digital materials, and campus signs; systematic ways for staff, teachers, and students to give input; and regular reports to management and the VIC. The data that has been gathered should be used to plan both corrective and preventive actions. This will ensure that the company keeps getting better, meets operational needs, and follows branding rules.

These suggestions are in line with research that shows that strong governance, ongoing training, and formal monitoring are all important for making institutional norms part of everyday life ideas about cultural integration and long-term practices also show how important it is to make visual identity standards a key part of an organization's culture. If WCC Colleges and WCC ATC implement these suggestions, they may create a visual identity that is consistent, professional, and in line with their goals. This will improve the reputation of the institution, bring people together, and boost stakeholder confidence on all campuses.

References

- Aaker, D. A. (1997). *Building strong brands*. Free Press.
- Afinida, Inc. (2025). *Brand guidelines: Why consistency builds recognition*. Afinida Marketing. <https://afinidamkt.com/2025/12/22/brand-consistency-drives-recognition/>
- Aghaz, A., Sheikh, A., Salmasi, S. D., & Tarighian, A. (2024). How faculty members' organizational citizenship behaviours can be predicted by their personality traits: The moderating role of perceived university brand. *Higher Education Quarterly*. Advance online publication. <https://doi.org/10.1111/hequ.12554>
- Ahmad, T., & Zhang, D. J. (2015). The significance of branding for higher education institutions: A review and a case study. *Journal of Management and Strategy*, 6(4), 131–138. <https://doi.org/10.5430/jms.v6n4p131>

- Al-Abbasi, S., & Masri, H. (2020). Optimizing faculty talents through identifying entrepreneurial champions: An ELECTRE IV approach. *Management Decision*, 58(11), 2527–2541. <https://doi.org/10.1108/md-09-2019-1305>
- Albrecht, S. L., Furlong, S., & Leiter, M. P. (2023). The psychological conditions for employee engagement in organizational change. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1071924>
- Allesandri, S. W., Yang, S., & Kinsey, D. (2006). An integrative approach to university visual identity and reputation. *Corporate Reputation Review*, 9(4), 258–273. <https://doi.org/10.1057/palgrave.crr.1550033>
- Anitech Group. (2024). *HR services*. <https://anitechgroup.com/au/hr-services/>
- Arboleda, V. C. (2006). Mejorar la calidad de la educación en escuelas de escasos recursos: El caso de la Escuela Nueva en Colombia [Improving the quality of education in low-resource schools: The case of the New School in Colombia]. *Revista Colombiana de Educación*, (51), 110–135. <https://doi.org/10.17227/01203916.7689>
- Balmer, J. M., & Greyser, S. A. (2003). *Revealing the corporation: Perspectives on identity, image, reputation, corporate branding, and corporate-level marketing*. Routledge. <https://doi.org/10.4324/9780203422786>
- Banerjee, P., Saini, G. K., & Kalyanaram, G. (2018). The role of brands in recruitment: Mediating role of employer brand equity. *Asia Pacific Journal of Human Resources*, 58(2), 173–196. <https://doi.org/10.1111/1744-7941.12209>
- Banwait, K. (2017). *The student as customer: A study of the intensified marketisation of higher education in England* [Doctoral dissertation, University of Bedfordshire]. ProQuest Dissertations and Theses Global.
- Bejarano Auqui, J. F., Roman Huanay, M. F., Tacanahui Condori, F. N., & Reyna Mallqui, E. C. (2025). Impact of endomarketing strategies on employee engagement and job performance in SME sector companies in Latin American context. *IBIMA Business Review*. <https://doi.org/10.5171/2025.933761>
- Bharwani, S., & Butt, N. (2012). Challenges for the global hospitality industry: An HR perspective. *Worldwide Hospitality and Tourism Themes*, 4(2), 150–162. <https://doi.org/10.1108/17554211211217325>
- Birkigt, K., & Stadler, M. M. (Eds.). (1980). *Corporate identity: Grundlagen, Funktionen, Fallbeispiele* [Corporate identity: Foundations, functions, case studies]. Verlag Moderne Industrie.
- Bohman, J. (2019). Critical theory. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Winter 2019 ed.). Stanford University. <https://plato.stanford.edu/archives/win2019/entries/critical-theory/>
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. <https://doi.org/10.3316/QRJ0902027>
- Caylan, S. (2024). Role of human resource management on strategic management. In *Research anthology on strategic management and interpersonal communications in the digital era* (pp. 41–60). IGI Global. <https://doi.org/10.4018/979-8-3693-1155-4.ch003>
- Chapleo, C. (2015). Brands in higher education: Challenges and potential strategies. *International Studies of Management & Organization*, 45(2), 150–163. <https://doi.org/10.1080/00208825.2015.1006014>
- Chew, Y. C., & Zainal, M. (2024). A sustainable collaborative talent management through collaborative intelligence mindset theory: A systematic review. *SAGE Open*, 14(2). <https://doi.org/10.1177/21582440241261851>
- Clark, P., Chapleo, C., & Suomi, K. (2019). Branding higher education: An exploration of the role of internal branding on middle management in a university rebrand. *Tertiary Education and Management*, 26(2), 131–149. <https://doi.org/10.1007/s11233-019-09054-9>
- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Dean, D., Arroyo-Gamez, R. E., Punjaisri, K., & Pich, C. (2016). Internal brand co-creation: The experiential brand meaning cycle in higher education. *Journal of Business Research*, 69(8), 3041–3048. <https://doi.org/10.1016/j.jbusres.2016.01.019>

- Dutton, J. E., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. *Administrative Science Quarterly*, 39(2), 239–263. <https://doi.org/10.2307/2393235>
- Dwitasari, P., Zulaikha, E., Hanoum, S., Alamin, R. Y., & Lee, L. (2024). Internal perspectives on visual identities in higher education: A case study of top-ranked universities in Indonesia. *F1000Research*, 13, 1111. <https://doi.org/10.12688/f1000research.159232.1>
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350–383. <https://doi.org/10.2307/2666999>
- Edmondson, A.C., & Bransby, D.P. (2023). Psychological safety comes of age: Observed themes in an established literature. *Annual Review of Organizational Psychology and Organizational Behavior*, 10(1), 55–78. <https://doi.org/10.1146/aanurev-orgpsych-120920-055217>
- Edsall, C. (2021, July 15). *What is brand theory in marketing?* Brand Theory. <https://www.brand-theory.com/blog/what-is-brand-theory-in-marketing>
- Ezeafulukwe, C., Onyekwelu, S. C., Onyekwelu, N. P., Ike, C. U., Bello, B. G., & Asuzu, O. F. (2024). Best practices in human resources for inclusive employment: An in-depth review. *International Journal of Science and Research Archive*, 11(1), 1286–1293. <https://doi.org/10.30574/ijrsra.2024.11.1.0215>
- Foroudi, M. M., Melewar, T. C., Foroudi, P., & Kitchen, P. J. (2021). Integrating identity, strategy and communications for trust, loyalty and commitment. *European Journal of Marketing*, 55(3), 850–883. <https://doi.org/10.1108/ejm-08-2015-0616>
- Foroudi, P., Melewar, T., Tzempelikos, N., Ha, N. C., & Tourky, M. (2025). Integrating corporate identity, social responsibility, and reputation: A triadic framework for sustainable branding in hospitality & tourism. *International Journal of Hospitality Management*, 130, Article 104224. <https://doi.org/10.1016/j.ijhm.2025.104224>
- Girard, T., & Pinar, M. (2020). An empirical study of the dynamic relationships between the core and supporting brand equity dimensions in higher education. *Journal of Applied Research in Higher Education*, 13(2), 488–510. <https://doi.org/10.1108/jarhe-04-2020-0097>
- Guy-Evans, O. (2024, May 22). *Interpretivism paradigm & research philosophy*. Simply Psychology. <https://www.simplypsychology.org/interpretivism-paradigm.html>
- Hall, H. (2017). *The marketisation of higher education: Symptoms, controversies, trends* (Working Paper No. 36/2017). Institute of Economic Research. <https://www.econstor.eu/bitstream/10419/219859/1/ier-wp-2017-036.pdf>
- Hearn, A. (2015). The politics of branding in the new university of circulation. *International Studies of Management & Organization*, 45(2), 114–120. <https://doi.org/10.1080/00208825.2015.1006007>
- Heilmann, P., Saarenketo, S., & Liikkanen, K. (2013). Employer branding in power industry. *International Journal of Energy Sector Management*, 7(2), 283–302. <https://doi.org/10.1108/ijesm-03-2012-0003>
- Hulme, M., Meanwell, K., & Bryan, H. (2023). Between a rock and a hard place: Leading university teacher education in England. *Journal of Further and Higher Education*, 47(10), 1375–1388. <https://doi.org/10.1080/0309877x.2023.2248025>
- Itam, U., Misra, S., & Anjum, H. (2020). HRD indicators and branding practices: A viewpoint on the employer brand building process. *European Journal of Training and Development*, 44(6/7), 675–694. <https://doi.org/10.1108/ejtd-05-2019-0072>
- Jackson, S. E., Jiang, K., & Schuler, R. S. (2017). Strategic human resource management. In *Oxford bibliographies in management*. Oxford University Press. <https://doi.org/10.1093/obo/9780199846740-0034>
- Jiang, T., & Iles, P. (2011). Employer-brand equity, organizational attractiveness and talent management in the Zhejiang private sector, China. *Journal of Technology Management in China*, 6(1), 97–110. <https://doi.org/10.1108/17468771111105686>
- Girard, T., & Pinar, M. (2020). An empirical study of the dynamic relationships between the core and supporting brand equity dimensions in higher education. *Journal of Applied Research in Higher Education*, 13(2), 488–510. <https://doi.org/10.1108/jarhe-04-2020-0097>
- Guy-Evans, O. (2024, May 22). *Interpretivism paradigm & research philosophy*. Simply Psychology. <https://www.simplypsychology.org/interpretivism-paradigm.html>

- Hall, H. (2017). *The marketisation of higher education: Symptoms, controversies, trends* (Working Paper No. 36/2017). Institute of Economic Research. <https://www.econstor.eu/bitstream/10419/219859/1/ier-wp-2017-036.pdf>
- Hearn, A. (2015). The politics of branding in the new university of circulation. *International Studies of Management & Organization*, 45(2), 114–120. <https://doi.org/10.1080/00208825.2015.1006007>
- Heilmann, P., Saarenketo, S., & Liikkanen, K. (2013). Employer branding in power industry. *International Journal of Energy Sector Management*, 7(2), 283–302. <https://doi.org/10.1108/ijesm-03-2012-0003>
- Hulme, M., Meanwell, K., & Bryan, H. (2023). Between a rock and a hard place: Leading university teacher education in England. *Journal of Further and Higher Education*, 47(10), 1375–1388. <https://doi.org/10.1080/0309877x.2023.2248025>
- Itam, U., Misra, S., & Anjum, H. (2020). HRD indicators and branding practices: A viewpoint on the employer brand building process. *European Journal of Training and Development*, 44(6/7), 675–694. <https://doi.org/10.1108/ejtd-05-2019-0072>
- Jackson, S. E., Jiang, K., & Schuler, R. S. (2017). Strategic human resource management. In *Oxford bibliographies in management*. Oxford University Press. <https://doi.org/10.1093/obo/9780199846740-0034>
- Jiang, T., & Iles, P. (2011). Employer-brand equity, organizational attractiveness and talent management in the Zhejiang private sector, China. *Journal of Technology Management in China*, 6(1), 97–110. <https://doi.org/10.1108/17468771111105686>
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33(4), 692–724. <https://doi.org/10.5465/256287>
- Khdour, N. (2021). The role of human resource managers in the promotion of hotel sector as a brand in Jordanian hotel industry: A cross-sectional study. *Cogent Business & Management*, 8(1), Article 1875535. <https://doi.org/10.1080/23311975.2021.1875535>
- Koegler, C. (2018). Introduction. In *Critical branding: A new philosophy of the brand* (pp. 1–13). Routledge. <https://doi.org/10.4324/9781315144825-1>
- Konecnik, M., & Gartner, W. C. (2007). Customer-based brand equity for a destination. *Annals of Tourism Research*, 34(2), 400–421. <https://doi.org/10.1016/j.annals.2006.10.005>
- Kulkarni, S., & Longani, K. D. (2024). *The study of internal branding education for employees to enhance the brand value: An empirical study with a focus on engineering SMEs in Pune*. ResearchGate. <https://www.researchgate.net/publication/379226496>
- Lia, Y., & Wan, C. D. (2023). Chineseness in Southeast Asian higher education: Discourse. *Discourse: Studies in the Cultural Politics of Education*, 44(3), 462–475. <https://doi.org/10.1080/01596306.2023.2200080>
- Lombard, N. (2024, May 15). *7 employee engagement models to help improve engagement*. AIHR. <https://www.aihr.com/blog/employee-engagement-model/>
- Mampaey, J., Schtemberg, V., Schijns, J., Huisman, J., & Wæraas, A. (2020). Internal branding in higher education: Dialectical tensions in the discursive legitimation of a new brand. *Higher Education Research & Development*, 39(2), 230–243. <https://doi.org/10.1080/07294360.2019.1674252>
- McNamara, D. S., & McDaniel, M. A. (2004). Suppressing irrelevant information: Knowledge activation or inhibition? *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 30(2), 465–482. <https://doi.org/10.1037/0278-7393.30.2.465>
- Melewar, T. C., & Akel, R. (2005). The role of corporate identity in the higher education sector. *International Journal of Educational Management*, 19(3), 273–280. <https://doi.org/10.1108/09513540510591019>
- Melewar, T. C., & Jenkins, E. (2002). Defining the corporate identity construct. *Corporate Reputation Review*, 5(1), 76–90. <https://doi.org/10.1057/palgrave.crr.1540166>
- Melewar, T. C., Nguyen, B., Alwi, S. F. S., & Navare, J. (2017). Guest editors' introduction: Corporate branding, identity, and reputation in the higher education sector. *International Studies of Management & Organization*, 47(2), 107–109. <https://doi.org/10.1080/00208825.2017.1256159>
- Mkhize, N., & Nkomo, S. (2023). The multifaceted sensemaking theory: A systematic literature

- review and content analysis on sensemaking. *Humanities*, 11(3), Article 145. <https://doi.org/10.3390/h11030145>
- Mokher, C. G., & McLendon, M. K. (2021). The origin and growth of state policies that privatize public higher education. *The Journal of Higher Education*, 80(3), 278–305. <https://doi.org/10.1080/00221546.2009.11779015>
- Morphew, C. C., & Hartley, M. (2006). Mission statements: A thematic analysis of rhetoric across institutional type. *The Journal of Higher Education*, 77(3), 456–471. <https://doi.org/10.1353/jhe.2006.0025>
- Mumby, D. K. (2016). Organizing beyond organization: Branding, discourse, and communicative capitalism. *Organization*, 23(6), 884–907. <https://doi.org/10.1177/1350508416631164>
- Mutmainnah. (2024). Commodification of education in transactional leadership. *International Journal of Humanity, Education and Social Sciences (IJHESS)*, 3(2), 164–171. <https://ijhess.com/index.php/ijhess/article/view/1048>
- Mwangi, G., Latafat, C. A., Hammond, S. P., Kommers, S., Thoma, H., Berger, J. B., & Blanco-Ramirez, G. (2018). Criticality in international higher education research: A critical discourse analysis of higher education journals. *Higher Education*, 76(6), 1091–1107. <https://doi.org/10.1007/s10734-018-0259-9>
- Mwaura, R., Muchara, M., & Kangu, M. (2024). Influence of valuable resources in performance of SMEs in Nairobi County. *International Journal of Research in Business and Social Science*, 13(5), 175–186. <https://doi.org/10.20525/ijrbs.v13i5.3536>
- Nghi, N. Q., Thanh, L. K., & Nhu, N. H. (2021). Factors affecting Can Tho University's brand value: Approach from students. *World Journal of Advanced Research and Reviews*, 12(2), 241–249. <https://doi.org/10.30574/wjarr.2021.12.2.0583>
- Noro, C. A. S., Cruz, C. M. L., & Kleber, A. E. (2024). *Organizational communication in higher education institutions: An analysis of benefits and challenges in a systematic literature review*. Seven Publicações Acadêmicas. <https://doi.org/10.56238/sevened2024.002-011>
- North Carolina A&T State University. (2025). *Visual identity*. Aggie Hub. <https://hub.ncat.edu/administration/chancellor/university-relations/branding/visual-identity/index.php>
- Notermans, M. (2024, April 20). *7 higher education branding strategies with examples*. Think Orion. <https://thinkorion.com/blog/higher-education-branding-creating-a-unique-brand-identity>
- Ong, N. N., Mutwiri, I., & Jinaro, P. (2025). The influence of corporate visual identity on brand recognition and recall among public universities in Nairobi County, Kenya. *International Journal of Research in Interdisciplinary Studies*, 6(1), 45–58. <https://journal.ijris.com/index.php/ijris/article/view/215>
- O'Sullivan, H., Polkinghorne, M., Chapleo, C., & Cownie, F. (2024). Contemporary branding strategies for higher education. *Youth*, 4(3), 1146–1160. <https://doi.org/10.3390/youth4030085>
- Panda, S., Pandey, S. C., Bennett, A., & Tian, X. (2019). University brand image as competitive advantage: A two country study. *International Journal of Educational Management*, 33(2), 234–251. <https://doi.org/10.1108/IJEM-12-2017-0374>
- Park, J., & Kim, J. (2023). Exploring the relationships among internal branding, work engagement, and turnover intention in public sports organizations after the pandemic. *Sustainability*, 16(3), Article 1342. <https://doi.org/10.3390/su16031342>
- Perera, C. H., Thang, L., & Nayak, R. (2023). Brand engagement on social media and its impact on brand equity in higher education: Integrating the social identity perspective. *International Journal of Educational Management*, 37(6/7), 1335–1359. <https://doi.org/10.1108/ijem-05-2023-0260>
- Price, R., & Reus-Smit, C. (1998). Dangerous liaisons? Critical international theory and constructivism. *European Journal of International Relations*, 4(3), 259–294. <https://doi.org/10.1177/1354066198004003001>
- Quijano, Y. D. (2022). Postcolonial philosophy of education in the Philippines. In *Oxford research encyclopedia of education*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190264093.013.1575>

- Rabah, K. (2015). *Effects of competitive advantage on organizational effectiveness in higher education institutions: A case of Kabarak University* [Master's thesis, Kenyatta University]. Kenyatta University Institutional Repository. <https://ir-library.ku.ac.ke/handle/123456789/13014>
- Raj, A. B. (2018). Employee well-being through internal branding: An integrated approach for achieving employee-based brand outcomes. *Global Business Review*, 21(4), 1058–1076. <https://doi.org/10.1177/0972150918779161>
- Rana, T. (2024). The commodification of education: An academic dilemma. *Accounting, Auditing & Accountability Journal*, 37(1), 428–429. <https://doi.org/10.1108/AAAJ-01-2024-215>
- Ratri, D. P., Widiati, U., Astutik, I., & Jonathans, P. M. (2024). A systematic review on the integration of local culture into English language teaching in Southeast Asia: Current practices and impacts on learners' attitudes and engagement. *Pegem Journal of Education and Instruction*, 14(2), 37–44. <https://doi.org/10.47750/pegegog.14.02.05>
- Rebelo, S. M., Martins, T., Rebelo, A., Bicker, J., & Machado, P. (2022). *Using computational approaches in visual identity design: A visual identity for the design and multimedia courses of Faculty of Sciences and Technology of University of Coimbra*. arXiv. <https://doi.org/10.48550/arXiv.2209.03420>
- Saini, G. K., Lievens, F., & Srivastava, M. (2022). Employer and internal branding research: A bibliometric analysis of 25 years. *Journal of Product & Brand Management*, 32(4), 606–623. <https://doi.org/10.1108/JPBM-06-2021-3526>
- Schwandt, T. A. (1994). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 118–137). Sage Publications.
- Stake, R. E. (2010). *Qualitative Research: Studying How Things Work*. Guilford Press.
- Stewart, L. (2025). *What is symbolic interactionism theory?* ATLAS.ti. <https://atlasti.com/research-hub/symbolic-interactionism-theory>
- Studio Ostendo, Co. (2025). *Visual consistency in branding: The hidden power that builds trust*. Leo9 Studio. <https://leo9studio.com/blog/visual-consistency-in-branding-the-hidden-power-that-builds-trust/>
- Subbarayalu, A. V. (2021). Branding higher education institutions: Challenges and potential strategies. *International Journal of Education Economics and Development*, 13(1), 58–81. <https://doi.org/10.1504/ijeed.2022.119335>
- Sujchaphong, N., Nguyen, B., & Melewar, T. C. (2015). Internal branding in universities and the lessons learnt from the past: The significance of employee brand support and transformational leadership. *Journal of Marketing for Higher Education*, 25(2), 204–237. <https://doi.org/10.1080/08841241.2015.1040104>
- Sułkowski, Ł., Przytuła, S., & Kulikowski, K. (2025). *Human resource management in higher education institutions*. Routledge. <https://doi.org/10.4324/9781003458425>
- The Interaction Design Foundation. (2024). *What are brand guidelines?* <https://ixdf.org/literature/topics/brand-guidelines>
- Turner, J. C., Brown, R. J., & Tajfel, H. (1979). Social comparison and group interest in ingroup favouritism. *European Journal of Social Psychology*, 9(2), 187–204. <https://doi.org/10.1002/ejsp.2420090207>
- University of Minnesota. (2016). *Human resource management*. University of Minnesota Libraries Publishing. <https://open.lib.umn.edu/humanresourcemanagement/>
- Vallaster, C., & de Chernatony, L. (2006). Internal brand building and structuration: The role of leadership. *European Journal of Marketing*, 40(7/8), 761–784. <https://doi.org/10.1108/03090560610669982>
- Van Haaften, R. (n.d.). *Brand awareness*. Rovaha. <https://www.van-haaften.nl/branding/corporate-branding/114-brand-awareness>
- Ward, E., Yang, S., Romaniuk, J., & Beal, V. (2020). Building a unique brand identity: Measuring the relative ownership potential of brand identity element types. *Journal of Brand Management*, 27(4), 393–407. <https://doi.org/10.1057/s41262-020-00187-6>
- Weick, K. E. (1995). *Sensemaking in organizations*. Sage Publications.

- Yaping, X., Huong, N. T. T., Nam, N. H., Quyet, P. D., Khanh, C. T., & Anh, D. T. H. (2023). University brand: A systematic literature review. *Heliyon*, 9(6), Article e17056. <https://doi.org/10.1016/j.heliyon.2023.e17056>
- Zajda, J., & Jacob, W. J. (Eds.). (2022). *Discourses of globalisation and higher education reforms: Emerging paradigms*. Springer. <https://doi.org/10.1007/978-3-030-83136-3>

Localizing the Sustainable Development Goals: An Analysis of SDGs Implementation in the Municipality of Labrador, Pangasinan

Jeanica C. Joson*, Darwin M. Juguilon, Ma. Theresa H. Bianzon, Alvin O. Carillo, Ma. Emma J. Tuvera

Consultants: Dr. Raymundo D. Rovillos and Dr. Perla E. Legaspi of the Center for Pangasinan Studies, University of Luzon

*Email : josonjeanica@gmail.com

Abstract

Localizing the Sustainable Development Goals (SDGs) poses significant challenges for municipalities striving to translate global commitments into actionable local governance. This study analyzed the implementation of selected SDGs in the Municipality of Labrador, Pangasinan, from 2019 to 2024, addressing the issues of limited documentation and monitoring gaps in local SDG progress. The objectives were to identify enabling policies, analyze programs, projects and activities, assess outputs and outcomes, and compare accomplishments across two timeframes to provide evidence-based insights for future planning. A descriptive-qualitative design was employed, using documentary analysis of ordinances, executive orders, program reports, and accomplishment records submitted to the Provincial SDG Localization Survey. These documents were evaluated against the UN Global Indicator Framework, national policy standards, and sector-specific guidelines. Results reveal significant progress across multiple SDGs. SDG 1 advanced through child labor prevention and student employment programs, assisting marginalized youth. SDG 3 evolved into an institutionalized health governance system, while SDG 4 expanded educational assistance for disadvantaged learners. SDG 6 achieved governance gains through water quality monitoring, and SDG 8 broadened livelihood and skills training initiatives. Integrated progress under SDGs 11 and 13 strengthened disaster resilience and cultural heritage conservation, while SDG 12 advanced waste management policies. SDG 14 demonstrated ecological gains through coastal clean-ups and mangrove rehabilitation, and SDG 16 matured into rights-based governance with child welfare codes, emergency hotlines, and legal identity programs. The findings highlight Labrador's growing institutional maturity, stronger community engagement, and alignment with national and global SDG frameworks. These insights provide valuable guidance for policymakers, planners, and development partners in sustaining long-term local development.

Keywords: SDG localization; municipal governance; Labrador, Pangasinan; sustainable development; institutional strengthening

1. Introduction

Localizing the Sustainable Development Goals (SDGs) has grown to be among the most effective means to make sure that world commitments have an impact on the daily life of average people. Though designed on the international stage, the SDGs will only have an impact if they are implemented at the community level. This is why the United Nations stresses that meeting the 2030 Agenda is not solely the duty of national governments. Often bearing the burden for enacting these aims are local authorities, who are closest to the people. In fact, United Cities and Local Governments (IISD, 2019) observe that roughly 65% of all SDG objectives depend on local events; hence, cities, municipalities, and other subnational organizations become essential allies in defining development that matches the realities of the communities they serve.

Globally, countries have adopted diverse approaches to embed the SDGs into national and local governance. In Europe, municipalities integrate SDG indicators into urban planning and climate strategies (OECD, 2020); in Africa, local governments align community development plans with poverty reduction and food security goals (UNDP, 2021); in Latin America, participatory budgeting processes increasingly reference SDG priorities (ECLAC, 2020). These examples highlight a common thread: localization is the bridge between global aspirations and lived experiences.

The Philippines has deliberately incorporated the SDGs into its long-term development trajectory. National frameworks such as the Philippine Development Plan and the National Framework for Devolution (Executive Order No. 103, 2023, amending EO 138, 2021) provide structural support, while agencies like the National Economic and Development Authority (NEDA), Department of the Interior and Local Government (DILG), Commission on Audit (COA), and

Philippine Statistics Authority (PSA) ensure integration into planning, budgeting, and monitoring (NEDA, 2023). In line with international guidance from the International Organization of Supreme Audit Institutions (INTOSAI) and ASEAN Supreme Audit Institutions (ASEANSAI), these audits strengthen oversight and align local actions with global commitments (COA, 2018).

Pangasinan, on a provincial level, greatly supports the advancement of the Philippine SDG goals by means of its broad spectrum of development programs. Areas of direct support for several SDGs include 1 (No Poverty), 2 (Zero Hunger), 3 (Good Health and Well-Being), 4 (Quality Education), 8 (Decent Work and Economic Growth), 11 (Sustainable Cities and Communities), 13 (Climate Action), and 14 (Life Below Water) in agriculture, fisheries, coastal resource management, public health, education, tourism, and disaster resilience - the province has initiatives in these areas that directly support these goals. Pangasinan's strong alignment with national development policies is shown by regional initiatives including marine protection along the Lingayen Gulf, improvements in waste management, agricultural modernization, extended health services, and investments in disaster-resilient infrastructure (Provincial Government of Pangasinan, 2023). The performance of the province directly affects national indicators since it is large and populous. This makes Pangasinan a significant player in the national effort to reach the SDGs.

In line with this, the Province of Pangasinan has taken a bold step forward in championing the United Nations' 2030 Agenda for Sustainable Development. With its 17 Sustainable Development Goals (SDGs) serving as a universal call to action, the agenda envisions a world where peace, prosperity, and environmental integrity thrive side by side. Recognizing the importance of translating these global ambitions into local realities, Pangasinan has launched a pioneering initiative that places the province at the forefront of SDG localization in the Philippines.

Through a dynamic partnership with the Asian Center of Education, Research, and Training for Innovation (ACERT), spearheaded by the Center for Pangasinan Studies (CPS) and carried out in collaboration with consortium partner HEIs, including the **University of Luzon**, the Localization of Sustainable Development Goals (SDGs) in Pangasinan project was launched to monitor and map SDG implementation across the province. Often, the contributions of local government units (LGUs) to national and global development goals go unnoticed. But with this effort, Pangasinan seeks to illuminate the impact of community-based programs and ensure their alignment with broader national and international targets. This project aimed to gather ground-level data from all cities and municipalities, engage stakeholders, formulate a localized SDG agenda that will guide future development plans, and create a Provincial SDG Dashboard - an innovative, real-time platform that tracks, analyzes, and publicly reports the province's progress toward the SDGs.

In this paper, the Municipality of Labrador is the subject of study, which is one of the assigned municipalities/cities to the researchers from the University of Luzon for the said project. It consolidates, analyzes, and interprets the local implementation of the SDGs to generate an evidence-based assessment aligned with the objectives of the Localization of SDGs in Pangasinan project. It provides a comprehensive overview of the municipality's policy instruments, program outputs, and emerging development outcomes, framed within international and national SDG frameworks.

2. Objectives

The primary objective of this study is to systematically analyze the implementation of SDG-aligned programs in the Municipality of Labrador from 2019 to 2024, providing valuable guidance for policymakers, planners, and development partners in sustaining long-term local development.

Specifically, it aims to:

1. Identify the enabling policies that supported each SDG;
2. Analyze the range of programs, projects, and activities implemented under each goal;
3. Assess available output and outcome indicators based on municipal documentation; and
4. Compare 2019 and 2024 data to determine progress.

3. Materials and Methods

Research Design and Instrument

This study utilized a descriptive qualitative research design supported by systematic documentary analysis to examine the Municipality of Labrador's implementation of selected Sustainable Development Goals (SDGs). The primary data were gathered through the official SDG

Localization Survey Questionnaires administered across Pangasinan LGUs, specifically the Survey Questionnaire on SDG-Related Policies and the Survey Questionnaire on SDG-Related Programs and Initiatives. These instruments contain sections on municipal ordinances, executive orders, sectoral programs, performance indicators, outcomes, impacts, and inter-agency partnerships, forming the core dataset for this research.

Data Analysis

Documentary analysis was employed to interpret these administrative records. As Bowen (2009) notes, this method is effective for analyzing government documents, understanding institutional actions, and connecting administrative outputs with larger policy and governance frameworks. The study extracted relevant entries for each SDG and organized them into three analytical categories: (1) enabling policies, (2) programs/projects/activities (PPAs), and (3) output and outcome indicators. These were then interpreted using established global and national frameworks, including the UN SDG Global Indicator Framework, the Department of Health's water and sanitation standards, and the National DRRM Framework.

A comparative analysis was conducted for SDGs with available two-period data (2019 and 2024), allowing assessment of progress, expansion, or gaps across time. Consistent with the limitations of documentary analysis, the study did not include field validation, stakeholder interviews, or financial audits. Instead, it relied exclusively on officially submitted documents and supporting secondary sources to build an evidence-grounded assessment of Labrador's SDG localization performance.

Scope and Delimitation

The scope specifically covered SDGs 1, 3, 4, 6, 8, 11, 12, 13, 14, and 16, for the year 2019 to 2024. The analysis is limited to the official documents submitted by municipal offices, including program reports, accomplishment records, and policy issuances. As a result, the findings depend on the completeness and accuracy of the data provided by the local government, consistent with the broader challenges faced by LGUs in SDG monitoring, where data availability often varies across goals and departments (Stamos, 2024; United Nations, n.d.).

The study examines only the program outputs and outcome indicators available in the municipal records, excluding long-term impact assessments, which require extended multi-year tracking beyond the scope of this research (United Nations, 2025).

Financial analysis, including cost-benefit evaluations or assessments of resource efficiency, is also excluded as it requires financial auditing procedures not covered by the study's design.

4. Results

Localization of the SDGs in the Municipality of Labrador

a. SDG 1: No Poverty

Two significant local council resolutions served as the enabling policy mechanisms for SDG 1 initiatives in Labrador: A Local Council Resolution supporting the Child Labor Prevention and Elimination Program (CLPEP) and a Local Council Resolution authorizing the Special Program for the Employment of Students (SPES).

Table 1: SDG 1 Implementation (2024)

Program / Initiative	Objective	Activities & Output
*Child Labor Prevention and Elimination Program Monitoring (CLPEP)	*To gather and grants the wishes of child especially those identified as child laborers	*Project Angel Tree (Provision of hygiene kits and school supplies): 10 identified child laborers.
*Special Program for the Employment of Students (SPES)	*To provide temporary employment during school breaks to poor but deserving students and out-of-school youth	*60% counterpart for the provision of stipend; 25 students served.

Under the CLPEP, the municipality delivered assistance to 10 identified child laborers through the distribution of school supplies and hygiene kits as part of Project Angel Tree. The SPES initiative provided temporary employment to 25 students and out-of-school youth (OSY); the LGU

met its mandated 60% funding counterpart for the stipends, ensuring all participants received compensation.

b. SDG 3: Good Health and Well-Being

In 2019, SDG 3 implementation in Labrador was supported primarily by SB Resolution No. 007-2009, the Resolution Supporting the Continuous Implementation of Health Programs in the municipality. By 2024, the municipality had significantly expanded its health policy landscape with multiple ordinances, resolutions, and executive orders supporting SDG 3 including EO No. 14 (Local Health Board reconstitution), EO No. 29 (tobacco control compliance), EO No. 31 (health and safety protocols), EO No. 44 (Anti-AIDS/HIV Council reorganization), EO No. 46 (alcohol restrictions for minors), EO No. 47 (mental health promotion), SB Resolution No. 045-2024 (adoption of Provincial Tobacco Regulation Ordinance), SB Resolution No. 052-2024 (health promotion framework), SB Resolution No. 069-2024 (institutionalization of the national immunization program), and SB Resolution No. 080-2024 (MOU with DSWD for Supplemental Feeding Program).

Table 2: SDG 3 Implementation (2019)

Program / Initiative	Objective & Enabling Policy	Activities & Output
Maternal Neonatal Child Health and Nutrition	*To provide Prenatal Care; and to increase Knowledge, Attitude and Skills of pregnant mothers *Safe delivery of mothers *To determine and improve nutritional status of 0-59 months; and to improve nutritional status of under five children *To improve nutritional status of infants *Management of Sick Infants and Children	*Prenatal Checkup: 273 Pregnant women gave birth with at least 4 prenatal checkups *Micronutrient Supplementation with Iron and Folic Acid: 313 Pregnant Women who completed the dose of iron with folic acid *Buntis Congress: 100 Pregnant Women attended Buntis Congress *Zero Maternal Mortality Rate Year 2020-2022 *Facility Based Delivery: 61 Health Facility Based Deliveries *Post-Partum Care: 297 Post-Partum women completed 2 post-partum check ups *Breastfeeding Advocacy: 100 Pregnant and Lactating Women attended Breastfeeding advocacy *Zero Maternal Mortality Rate Year 2020-2022 *Operation Timbang Plus: 1,884 children measured *Deworming: 899 children dewormed *Complimentary Feeding Initiation: 365 children initiated for complementary feeding *E-Konsulta: Sick Children examined and treated *Decrease in stunting rate from 9.5% (2019) to 1.2% (2023) *Decrease in malnutrition rate from 3.0% (2019) to 1.9% (2023) *Zero Under Five Mortality Rate Year 2020-2022
Non-Communicable Disease Control Program	Early Detection and Treatment of NCD	*Risk Assessment using PHILPEN: 25 adults assessed ↑ in NCD screening from 1.27/1,000 population (2019) to 2.75/1,000 population (2023)
Supplemental Feeding Program	Ensure proper nutrition of children and reduction of malnutrition rate	*Distribution of Food Stuffs: 428 children served *Decreased malnutrition among children ages 3-4.11 y/o

Programs implemented in 2019 focused primarily on maternal, neonatal, and child health and nutrition. These included prenatal checkups, micronutrient supplementation, Operation Timbang Plus,

deworming, breastfeeding advocacy, complementary feeding, Buntis Congress, facility-based deliveries, postpartum care, and PHILPEN NCD risk assessment. The Supplemental Feeding Program (2019) also contributed to SDG 3, serving 428 children enrolled in child development centers and malnourished children through food distribution activities coordinated with DSWD.

By 2024, SDG 3 implementation included a more extensive set of maternal and child health, disease prevention, emergency medical, disaster response, and nutrition programs. The Supplemental Feeding Program in partnership with DSWD served through distribution of vitamins, supplements and food resulting in decreased malnutrition.

Programs from 2019 contributed to meaningful medium-term outcomes, including a decline in stunting from 9.5% (2019) to 1.2% (2023) and a reduction in malnutrition from 3.0% (2019) to 1.9% (2023). Maternal mortality remained at zero from 2020 to 2022, and under-five mortality remained at zero in subsequent years. In 2024, the significant increase in non-communicable disease (NCD) screening - from 25 adults (2019) to 1,883 adults (2024) - indicates improved early detection efforts. The introduction of emergency response systems, including 57 emergency cases, 157 patient transports, and 16 blood assistance cases, reflects stronger emergency care integration.

Table 3: SDG 3 Implementation (2024)

Program / Initiative	Objective	Activities & Output
Maternal Neonatal Child Health and Nutrition	*To provide Prenatal Care *To determine nutritional status of 0-59 months *To improve nutritional status of 0-59 months *To improve nutritional status of infants *To increase Knowledge, Attitude and Skills of pregnant mothers *Safe delivery of mothers *Management of Sick Infants and Children	*Prenatal Checkup: 260 Pregnant women gave birth with at least 4 prenatal checkups; *Micronutrient Supplementation with Iron and Folic Acid: 252 Pregnant Women who completed the dose of iron with folic acid; *Operation Timbang Plus: 2,115 children measured; *Deworming: 2,404 children dewormed; *Breastfeeding Advocacy: 170 Pregnant and Lactating Women attended Breastfeeding advocacy; 326 children exclusively breastfed till 6 months; *Buntis Congress: 100 Pregnant Women attended Buntis Congress; *Facility Based Delivery: 42 Health Facility Based Deliveries; *Post-Partum Care: 274 Post-Partum women completed 2 post-partum checkups; *E-Konsulta: Sick Children examined and treated.
Non-Communicable Disease Control Program	*Early Detection and Treatment of NCD	*Risk Assessment using PHILPEN: 1,883 adults assessed.
Emergency medical services	*Provide incident/ drowning/ vehicular accident response *Ensure safety patient transport for medical treatment	*Provide immediate first aid treatment: 57 Cases Responded; *Outmost care is provided to ensure wellness and safety: 157 Cases.
Disaster assistance	*Disaster assistance	*Search & rescue/ provided
Medical blood request	*Coordinate blood request assistance	*Initiate & coordinate technical assistance for the patients request of

		blood to respective agencies: 16 cases responded.
DRRM information & education campaign	*Coordinate to institutions DRRM IEC	*Conduct appropriate DRRM information & education campaign: 2 schools.
Supplemental Feeding Program (in partnership with the DSWD)	*To provide Supplementary Feeding Program to Children enrolled in Child Development Center among 3-4 years old	*Providing vitamins and supplements: 420 children served; Decreased malnutrition.
Supplemental Feeding Program	*Ensure proper nutrition of children and reduction of malnutrition rate	*Distribution of Food Stuffs: 150 children served; Decrease malnutrition among children ages 3-5 y/o.

Feeding programs in 2024 led to decreased malnutrition among 420 child development center or CDC-enrolled and disadvantaged children, as well as 150 malnourished children aged 3–5 years old who were not enrolled in DepEd.

c. SDG 4: Quality Education

In 2024, SDG 4 implementation in the Municipality of Labrador was supported by SB Resolution No. 01, Series of 2024, which provided educational and financial assistance to children and youth from low-income families through the Local Council for the Protection of Children (LCPC). Under this resolution, the LGU implemented an Educational Assistance Program that served 40 beneficiaries, all from low-income households. No education-related PPAs were recorded for 2019 in the available dataset, indicating that 2024 marked the beginning of more structured SDG 4 programming in the municipality.

Table 4: SDG 4 Implementation (2024)

Program / Initiative	Objective	Activities & Output
Educational Assistance to Disadvantaged Youth	*Increase and improve youth participation in formal and non-formal education.	*40 students provided financial assistance.

d. SDG 6: Clean Water and Sanitation

SDG 6 implementation in Labrador is supported by two key enabling instruments. First, SB Resolution No. 007-2009, enacted on February 23, 2009, authorized the continuous implementation of local health and sanitation programs; although originally aligned with SDG 3, this resolution provided the policy basis for environmental sanitation activities, including the issuance of sanitary permits to water refilling stations in 2019.

Table 5: SDG 6 Implementation (2019-2024)

Program / Initiative	Objective	Activities & Output
Environmental Sanitation	*To provide safe water supply	*Issuance of Sanitary Permits (2019): 9 water refilling stations given sanitary permit; ↑ Proportion of households using safety managed drinking services from 40.03% (2019) to 67.0% (2023); *Issuance of Sanitary Permits (2024): 15 water refilling stations given sanitary permit.

Second, Executive Order No. 09, Series of 2023 - “*An Order Establishing the Local Drinking Water Quality Monitoring Committee (LDWQMC)*” – took effect on February 27, 2023 and became the primary enabling policy by 2024 for issuing sanitary permits and implementing the Environmental Sanitation Program. In 2019, nine (9) water refilling stations received sanitary permits; by 2024, fifteen (15) stations had been issued permits.

e. SDG 8: Decent Work and Economic Growth

In 2019, the implementation of SDG 8 in the Municipality of Labrador was supported primarily through a TESDA - LGU Memorandum of Agreement. By 2024, policy support expanded with SB Resolution No. 01-2024, authorizing the Municipal Mayor to enter into a partnership with TESDA for technical skills development and thereby improving employability and access to training.

Table 7: SDG 8 Implementation (2019)

Program / Initiative	Objective	Activities & Output
TESDA Training or Scholarship Program for OSY/Disadvantaged Youth	To develop the Youth especially the OSY & other disadvantaged youth	*Referral to TESDA: 20 disadvantaged youth served.

In 2019 key intervention was the TESDA Training or Scholarship Program for out-of-school and disadvantaged youth which enabled 20 participants to acquire technical and vocational skills. By 2024, the municipality had broadened its employment and workforce-development programs to include Labor Market Information (LMI), local recruitment activities with on-the-spot hiring through DOLE partners, the Special Program for Employment of Students (SPES), TUPAD for displaced and underemployed workers, the Government Internship Program (GIP), and the DOLE Integrated Livelihood Program (DILP). The TESDA program benefited 65 disadvantaged youth, indirectly supporting SDG 8 by enhancing employability.

Table 8: SDG 8 Implementation (2024)

Program / Initiative	Objective	Activities & Output
Labor Market Information	Provides information, data analysis about work force, jobs, and over- all labor market.	Publish Social Media platforms.
Local Recruitment Activity	Recruitment/ hired candidates on the spot for local employment needs.	Publish Social Media platforms.
Special Program for Employment of Students	Provides temporary employment to students and Out-of-School Youth	Publish Social Media platforms.
Tulong Panghanapbuhay sa ating Disadvantaged/ Displaced Workers (TUPAD)	Short-term emergency employment program for displaced worker, underemployed and seasonal worker.	Publish Social Media platforms.
Government Internship Program (GIP)	Provides temporary work in government offices for youth	Publish Social Media platforms.
DOLE Integrated Livelihood Program (DILP)	Provides starter kits, skills training, and support to informal worker	Publish Social Media platforms.
Skills Training and Livelihood Program for Disadvantaged/ Underprivileged Youth	To develop the Youth especially the OSY & other disadvantaged youth	Referral to TESDA: 65 disadvantaged youth served;

f. SDGs 11 and 13 Integration: Sustainable Cities, Communities, and Climate Action

The Municipality of Labrador formalized several ordinances and executive orders in 2024 that advance both SDG 11 and SDG 13 objectives. A central cultural policy, Ordinance No. 088-2024, mandates the preservation, conservation, and promotion of the municipality's cultural and historical properties, directly contributing to SDG 11.4 (heritage protection). For resilience and environmental safety, the LGU enacted several executive orders, including EO No. 05; EO No. 30; EO No. 34; and EO No. 10, which supports SDG 11.6 and SDG 13. With these enabling policies, the LGU implemented a heritage site conservation drive, emergency fire response, public assistance during

large events, disaster assistance for pandemic, typhoon, storm surge, and DRRM trainings and seminars.

Table 9: SDG 11 and 13 Implementation (2024)

Program / Initiative	Objective	Activities & Output
Heritage Site Conservation Drive	To preserve and promote awareness of Labrador's local cultural properties and heritage sites.	Inventory of sites, heritage walks, community clean up, cultural mapping; Inventory report, heritage tours; Increased awareness of cultural value; Strengthened local identity and tourism economy.
Emergency fire response	Ensure proper safety protocols are initiated and assist BFP response.	Timely response to evacuate (victims) out of fire hazard area and mitigate any fire damage; 2 Cases Responded.
Public assistance during large gathering/ event	Public assistance during large gathering/ event.	Implement and ensure safety for the public and the IMT (responders) Search & rescue/ provide; 3 Events Responded.
Disaster Assistance	Pre-hazard: pandemic, typhoon & storm surge.	Search & rescue/ provide immediate first aid care/ evacuation management.
DRRM training and seminars	Coordinate to the public DRRM capability training.	DRRM conduct appropriate trainings and seminars; 4 trainings conducted.

The 2024 PPAs demonstrate substantial progress in building a resilient, culturally rooted, and climate-conscious community: the Heritage Conservation Drive completed cultural mapping and heritage inventories, enhancing community appreciation and cultural-tourism potential; emergency responses included two (2) fire incidents and safety support at three (3) major public events, indicating improved public safety and disaster readiness; disaster assistance ensured timely evacuation and care for during pandemics, typhoons, and storm surges; and DRRM trainings improved community disaster awareness, strengthened first-responder skills, and contributed to long-term local resilience.

g. SDG 12: Responsible Consumption and Production

Table 10: SDG 12 (2019-2024) Implementation

Program / Initiative	Objective	Activities & Output
Solid Waste Segregation Campaign	Promote proper waste and recycling practices	Conduct barangay seminar and awareness campaign; Distributed tarp/flyers; Increase in waste segregation compliance rate; Reduction in landfill waste volume by 50%.
Plastic/ Styrofoam Free Market Initiative	Reduce single use plastics in public markets	Provide incentives for reusable bags; Vendors use eco-friendly packaging; Reduction in single use plastics in market area; Significant decrease in plastic waste in surrounding market.

Two primary policy instruments support SDG 12 implementation in Labrador. First, Executive Order No. 27, Series of 2024, mandates the strict implementation of the “No Segregation, No Collection Policy.” Second, the Plastic and Styrofoam Regulation Ordinance (Ordinance No. 053-2017) provides legal basis for reducing single-use plastics in public markets. With these enabling policies, the LGU implemented a solid waste segregation campaign and Plastic and Styrofoam free market initiative.

h. SDG 14: Life Below Water

SDG 14 implementation in Labrador is supported by strong enabling policies at both local and national levels. Locally, Ordinance No. 77-2022 - “*An Ordinance Providing for the Development, Conservation, and Management of the Fisheries and Aquatic Resources in the Municipality of*

Labrador, Province of Pangasinan, and for Other Purposes”- serves as the legal framework for the Coastal Clean-up Program. At the national level, the Mangrove Restoration Project is guided by DENR Administrative Order No. 2000-57 (2000); DENR Administrative Order No. 3 (as mandated by Ministry of Natural Resources - MNR - Joint Administrative Order No. 3) (1982); Republic Act No. 11038 (Expanded National Integrated Protected Areas System Act of 2018); and the Pangasinan Area Specific Action Plan (2023).

Table 11: SDG 14 Implementation (2023-2024)

Program / Initiative	Objective	Activities & Output
Coastal Clean-up	Reduce marine debris and protect coastal ecosystems	Weekly shoreline clean-up with volunteers; Collected Kilos of marine waste; Decrease in plastic waste along coastline; Improved fish catch and healthier marine habitat.
Mangrove Restoration Project	Protect coastlines from erosion and support marine life	Plant mangrove in degraded coastal areas; 2,000 Pcs. of mangrove planted; Improved shoreline stability and habitat for fish; Greater climate resilience and increased fish yield.

The coastal clean-up yielded measurable reductions in plastic debris along the coastline, improving coastal water quality and benefiting local biodiversity and fisheries. The mangrove restoration planted 2,000 seedlings, producing ecological benefits such as improved shoreline stability, restored fish habitats, greater climate resilience, and increased fish yield, thereby strengthening the sustainability of coastal livelihoods.

i. SDG 16: Peace, Justice and Strong Institutions

In 2019, SDG 16 activities in Labrador were grounded in national laws (RA 8353, RA 7610, RA 9262, RA 9208, RA 7279) and local police guidelines, with the PNP leading visibility and prevention programs. By 2023–2024 the local policy framework was strengthened by Municipal Ordinance No. 078-2023 (Welfare Code for Children), SB Resolution No. 049-2022 (PSA MOA for BRAP), and executive orders establishing the CBMS Coordinating Board, updating the Municipal Development Council, and creating emergency hotlines, which supported expanded rights-based programming and data governance.

Table 12: SDG 16 Implementation (2019)

Program / Initiative	Objective	Activities & Output
Tactical Motorcycle Riding Unit (TMRU)	Enhance Crime Solution Efficiency	*Motorcycle Patrolling within municipality, Barangay visitation, School Visitation, Traffic Management, Police assistance/ Police presence; *80-100% sustained public awareness
Conduct of mobile/ foot patrol (Mobility)	Enhance crime solution efficiency	*Mobile patrolling/foot patrol, barangay, and school visitation; *80-100% sustained public awareness
Barangay/ School/ Establishment Visitation	To inform, educate and disseminate important programs, plans and activities concerning peace and order.	*Dialogue Pulong-pulong, lectures on said areas of concern; *80-100% sustained public awareness
Active Facebook Page/ Social Media Account	To inform, educate and disseminate important programs, plans and activities concerning peace and order.	*Regular posting of activities, programs and timely infographic materials concerning laws and ordinances; *80-100% sustained public awareness
Accomplishment on arrested wanted	To increase accomplishment on arrested wanted person	*Close coordination the community and strengthen intelligence

person		information; *55-65 % of the list on warrant of arrest has already been arrested.
Conduct of Intensified Anti-Rape Campaign and All-Out and Continuous VAWC Awareness Campaign and Community Engagement	To inform, educate, and raise public awareness on the Anti-Rape Campaign, and to promote the All-Out and Continuous VAWC Awareness Campaign and Community Engagement in order to protect the rights, welfare, and dignity of women and children	*Family Home Visit/ Counselling; Coordination with other Agencies (LGU, MSWDO/ CSWD, Barangay Officials); Oplan Sagip; Posting of Info graphics on social media; Formulation of Programs/ Seminars on responsible Parenthood; Dialogue with the group of men such as tricycle drivers and construction workers; and Distribution of flyers focusing on the awareness of youth, their parents and would-be suspects; *80-100% sustained public awareness
Barangay/ School/ Establishment Visitation /Active Facebook Page/ Social Media Account	To inform, educate and disseminate important programs, plans and activities and to uphold human dignity, ensuring every person can live a life worthy of a human being, and to guarantee basic conditions for integral personal development through universal principles of freedom, equality, and justice.	*Dialogue, Pulong-pulong, distribution of flyers and lectures on said areas of concern; *Regular posting of activities, programs and timely infographic materials concerning human rights; *80-100% sustained public awareness
Oplan "Tamang Bihis"	The strict adherence to the proper and professional appearance of PNP Uniformed Personnel	*Monthly Rank Inspection of Proper Uniform, On the spot inspection of Uniform; *80-100% sustained public awareness
Inspection and Proper Maintenance of all PNP Assets	To conduct physical inventory and maintenance of all PNP assets	*Annual Inspection, Monthly Inspection and Maintenance; *80-100% sustained public awareness
Conduct of Intensified Drive Against Squatting Syndicates and Professional Squatters	To inform, educate, and raise awareness on the Anti-Squatting Law (RA 7279)	*Conduct of Pro-active Measures in the Drive against Professional Squatters and Squatting Syndicates (PSSS) thru Focus Group Discussions and Coordination with LGU; *80-100% sustained public awareness
Digitization of Accounting of PNP Pensioner and Survivors	To account PNP Pensioners and their survivors to ensure continuous benefits by the PNP	*Quarterly Conduct of House Visitation; *80-100% sustained public awareness
Training of BCPC Officers Community Forum on the Roles & Functions of the BCPC Officers	Functional BCPC Officers	*Conduct Capacity Building; 55 individuals capacitated; To promote and protect children's rights.
Training of VAWC Desk Officers (10 Barangays)	Advocacy and Awareness on RA 9262	*Conduct Capacity Building; 55 individuals capacitated; To promote and protect children's rights.

In September 2024 the LGU distributed 5,306 IEC materials, the BRAP registered 29 individuals and issued free Certificates of Live Birth, and core policing and community engagement continued alongside improved accountability.

Reported outcomes include sustained public awareness (80–100% reach), improved arrest accomplishments for wanted individuals (from 55% to 65%), strengthened early reporting of gender-based violence, and enhanced frontline protection and service access.

Table 13: SDG 16 Implementation (2024)

Program / Initiative	Objective	Activities & Output
Tactical Motorcycle Riding Unit (TMRU)	Enhance Crime Solution Efficiency	*Motorcycle Patrolling within municipality, Barangay visitation, School Visitation Traffic Management, Police assistance/ Police presence; *80-100% sustained public awareness
Conduct of mobile/foot patrol (Mobility)	Enhance crime solution efficiency	*Mobile patrolling/foot patrol, barangay, and school visitation; *80-100% sustained public awareness
Barangay/ School/ Establishment Visitation	To inform, educate and disseminate important programs, plans and activities concerning peace and order.	*Dialogue Pulong-pulong, lectures on said areas of concern.; *80-100% sustained public awareness
Accomplishment on arrested wanted person	To increase accomplishment on arrested wanted person	*Close coordination the community and strengthen intelligence information; *55-65 % of the list on warrant of arrest has already been arrested.
Conduct of Intensified Anti-Rape Campaign and All-Out and Continuous VAWC Awareness Campaign and Community Engagement	To inform, educate, and raise public awareness on the Anti-Rape Campaign, and to promote the All-Out and Continuous VAWC Awareness Campaign and Community Engagement in order to protect the rights, welfare, and dignity of women and children	a. Family Home Visit/Counselling; b. Coordination with other Agencies (LGU, MSWD/CSWD, Barangay Officials); c. Oplan Sagip; d. Posting of Info graphics on social media; e. Formulation of Programs/Seminars on responsible Parenthood; f. Dialogue with the group of men such as tricycle drivers and construction workers; and g. Distribution of flyers focusing on the awareness of youth, their parents and would-be suspects.; 80-100% sustained public awareness
Barangay/ School/ Establishment Visitation/ Active Facebook Page/ Social Media Account	To inform, educate and disseminate important programs, plans and activities and to uphold human dignity	*Dialogue, Pulong-pulong, distribution of flyers and lectures on said areas of concern.; *Regular posting of activities, programs and timely infographic materials concerning human rights.; *80-100% sustained public awareness
Oplan "Tamang Bihis"	The strict adherence to the proper and professional appearance of PNP Uniformed Personnel	*Monthly Rank Inspection of Proper Uniform, On the spot inspection of Uniform; *80-100% sustained public awareness
Inspection and Proper Maintenance of all PNP Assets	To conduct physical inventory and maintenance of all PNP assets	*Annual Inspection, Monthly Inspection and Maintenance; *80-100% sustained public awareness
Conduct of Intensified Drive Against Squatting Syndicates and Professional Squatters	To inform, educate, and raise awareness on the Anti-Squatting Law (RA 7279)	*Conduct of Pro-active Measures in the Drive against Professional Squatters and Squatting Syndicates (PSSS) thru Focus Group Discussions and Coordination with LGU; *80-100% sustained public awareness

Digitization of Accounting of PNP Pensioner and Survivors	To account PNP Pensioners and their survivors to ensure continuous benefits by the PNP	*Quarterly Conduct of House Visitation; *80-100% percent of the population of Labrador were aware of important programs, plans and activities concerning peace and order.
Birth Registration Assistance Project (BRAP)	To provide free delayed registration of Birth Certificate	*Free Delayed Registration, Mobile Registration; *A total of 29 Individuals were registered and issued COLB.
Advocacy on RA 8353, RA 7610, RA 9262, RA 9208, RA 9344 and other laws concerning children	Promote and protect women and children's rights	*Distribution of IEC materials and advocacy campaign; *5,306 IEC Materials distributed.

5. Discussion

Localization of the SDGs in the Municipality of Labrador

a. SDG 1: No Poverty

The Local Council Resolutions establishing the Child Labor Prevention and Elimination Program (CLPEP) and authorizing the Special Program for the Employment of Students (SPES) institutionalized Labrador's anti-poverty response by creating formal mandates and budgetary commitments, including the LGU's 60% stipend share. These policies enabled targeted interventions in 2024. The Project Angel Tree provided school supplies and hygiene kits to 10 identified child laborers, while SPES offered temporary employment and stipends to 25 students and OSY, addressing immediate material needs and short-term income gaps. The outputs demonstrate meaningful operationalization of SDG 1 priorities.

b. SDG 3: Good Health and Well-Being

The SB Resolution No. 007-2009 provided the initial policy basis for Labrador's maternal and child health programs in 2019. By 2024 the LGU significantly expanded its regulatory and institutional support for SDG 3 through multiple ordinances, resolutions, and executive orders, shifting implementation from program-driven activities to a governance-driven health system. Guided by the UHC Act (DOH, 2019), local ordinances and executive orders translated national UHC priorities into municipal practice, supporting a shift toward preventive, integrated, and governance-driven health services. Between 2019 and 2024 the municipality recorded measurable improvements in maternal and child health and nutrition, increased NCD screening coverage, and strengthened emergency and disaster health responses. These changes indicate broader service coverage, better integration of nutrition and emergency care, and closer alignment with national UHC priorities.

c. SDG 4: Quality Education

The SB Resolution No. 01, Series of 2024, established the municipal policy foundation for extending support to disadvantaged learners, marking the first structured, policy-backed education initiative in Labrador since 2019. The 2024 program reduced financial barriers to schooling and benefited 40 learners, enabling access to formal and non-formal education for students from low-income households. Although long-term outcomes such as academic performance, completion rates, and learning gains, are not yet available, the immediate effect on educational continuity is positive.

d. SDG 6: Clean Water and Sanitation

The SB Resolution No. 007-2009 provided the initial policy basis for Labrador's environmental sanitation programs, including the issuance of sanitary permits to water refilling stations. From 2019 to 2024 the LGU strengthened water governance through Executive Order No. 09 (s. 2023), which established a Local Drinking Water Quality Monitoring Committee to oversee surveillance, inspections, and compliance with national standards. Consistent implementation of the Environmental Sanitation Program coincided with measurable improvements: the proportion of households using safely managed drinking water rose from 40.03% (2019) to 67.0% (2023), and sanitary-permitted refilling stations increased from 9 to 15, indicating expanded access to regulated

water sources and enhanced regulatory capacity. These outcomes reflect a shift from general sanitation administration to structured, committee-led water quality governance and align with national mandates (Presidential Decree No. 856; DOH Administrative Order No. 2017-0010).

e. SDG 8: Decent Work and Economic Growth

The Municipality of Labrador's SDG 8 implementation from 2019 to 2024 demonstrates substantial progress toward promoting decent work and economic growth. In 2019, SDG 8 efforts were limited to a single TESDA referral program serving 20 disadvantaged youth. Although impactful at the individual level, program reach and policy support were limited. By 2024, however, the LGU had expanded its SDG 8 efforts into a multi-layered employment support system involving TESDA skills training, DOLE livelihood programs, youth employment initiatives, government internships, and local recruitment facilitation. Policy support also strengthened, with SB Resolution No. 01-2024 enabling continued technical training partnerships. The increase from 20 trained individuals in 2019 to 65 in 2024, along with the introduction of several DOLE programs and educational assistance for 40 youth, demonstrates improved institutional capacity and a more comprehensive approach to decent work promotion. In summary, the municipality's evolving implementation of SDG 8 reflects a shift from basic training services toward an integrated employment, livelihood, and skills development strategy aligned with national and international decent work frameworks.

f. SDGs 11 and 13 Integration: Sustainable Cities, Communities, and Climate Action

The LGU's 2024 implementation of SDGs 11 and 13 reflects a coherent and integrated approach to sustainable and climate-resilient community development. Heritage conservation, public safety, climate hazard contingency planning, and DRRM capacity-building are effectively combined through a suite of enabling ordinances and executive orders. The PPAs demonstrate that the LGU is not only investing in cultural identity but also institutionalizing systems that protect life, property, and ecosystems from climate-driven disasters. This integrated strategy shows the LGU's growing alignment with global and national frameworks that call for climate-resilient settlements and empowered local capacities.

g. SDG 12: Responsible Consumption and Production

The LGU's implementation of SDG 12 demonstrates a structured and progressive approach toward promoting responsible consumption and sustainable waste management. The combination of Executive Order No. 27 (s. 2024) and Ordinance No. 053-2017 provides a solid regulatory foundation that guides both household-level and market-level interventions. Program implementation reflects a balance between regulatory enforcement and community-based capacity building, as seen in barangay seminars, awareness campaigns, incentives for reusable packaging, and collaborative efforts with local councils and NGOs. The Solid Waste Segregation Campaign significantly improved household compliance with segregation practices, contributing to a projected 50% reduction in landfill waste. Similarly, the long-standing Plastic/Styrofoam Free Market Initiative continues to reduce single-use plastics and promote environmentally conscious purchasing behaviors. These outcomes collectively support SDG 12 targets by reducing environmental impact, fostering sustainable consumption patterns, and cultivating long-term behavioral change among residents.

h. SDG 14: Life Below Water

The LGU's SDG 14 implementation a holistic approach to marine and coastal sustainability. Through Ordinance No. 77-2022 and various national environmental regulations, the municipality established a strong policy foundation that supports ocean protection and sustainable use of aquatic resources. Program implementation demonstrates significant environmental gains: the Coastal Clean-up Program delivers consistent waste reduction and improved shoreline cleanliness, while the Mangrove Restoration Project strengthens ecological resilience and enhances fishery productivity. The involvement of BFAR, DENR, barangay officials, NGOs, and fisherfolk underscores the municipality's emphasis on community participation and multi-stakeholder collaboration. Collectively, these initiatives show that Labrador is making meaningful progress toward SDG 14 by reducing marine pollution, protecting coastal ecosystems, restoring mangrove habitats, and supporting the long-term viability of local fisheries.

i. SDG 16: Peace, Justice, and Strong Institutions

The Municipality of Labrador's SDG 16 implementation in 2019 and 2024 reflects a significant evolution from operational policing and foundational advocacy efforts toward a more institutionalized, inclusive, and rights-based governance system. In 2019, implementation focused on

visibility patrols, crime prevention, legal literacy, and coordination with community actors - laying the foundation for public trust and safety. These efforts produced strong awareness levels, effective VAWC and anti-rape advocacy, and strengthened community-police engagement. By 2024, SDG 16 implementation matured considerably. The introduction of the Welfare Code for Children, emergency hotline systems, the CBMS Coordinating Board, and the PSA–LGU BRAP marked a shift toward systemic institutional strengthening. Programs expanded to address deeper structural issues such as legal identity gaps, child welfare governance, trafficking prevention, and inclusive data systems. The broader reach of IEC campaigns and the expansion of rights-based programs indicate heightened municipal commitment to justice, safety, and institutional transparency. Taken together, the PPAs from both years collectively demonstrate that Labrador is progressing steadily toward SDG 16 through multi-sector partnerships, enhanced law enforcement efficiency, strengthened protection services, and improved institutional responsiveness.

6. Conclusion

The results of the study indicate that the Municipality of Labrador has made significant steps in localizing the SDGs, supported by strong policy frameworks, inter-agency collaboration, and sustained program delivery. The years 2019 to 2024 show a steady shift toward more institutionalized and comprehensive approaches across poverty reduction, health care, education, environmental governance, DRRM, livelihood development, and good governance. A consistent pattern throughout the findings is that local programs tend to be most effective when supported by enabling policies, organized committees, and active coordination among departments and partner agencies. The municipality's health, DRRM, employment, and environmental initiatives illustrate how localized actions can meaningfully align with national development directives and global SDG targets.

However, the study also highlights areas that require strengthening. Data limitations, particularly for 2019 and for SDGs without documented local programs, reflect challenges that many local governments face in establishing comprehensive and systematic monitoring systems. Several SDGs (2, 5, 7, 9, 10, 15, and 17) were excluded due to the absence of local data, as the analysis is based solely on the submitted and available information from the LGU. Similarly, long-term impact measurements remain beyond reach, as such indicators require continuous multi-year tracking.

Despite these limitations, the overall direction of SDG localization in Labrador is positive and demonstrates growing institutional maturity, stronger community engagement, and clearer alignment with the province's and nation's sustainable development agenda. To sustain the progress, practical recommendations are directed toward the municipal government, barangay councils, the provincial government of Pangasinan, national agencies, and community organizations. These include strengthening monitoring systems, expanding social protection and environmental programs, enhancing disaster preparedness, and documenting SDGs not yet covered to ensure comprehensive, province-aligned reporting, which should also be the subject of further research and study.

References

- COA. (2018). *Performance Audit of preparedness for implementation of sustainable development goals*.
https://www.intosai.org/fileadmin/downloads/focus_areas/SDG_atlas_reports/Philippines/Philippines_2019_E_prep_FuRep_perform.pdf
- Daily Report for 12 November 2019. (n.d.). IISD.
- Department of Health. (2019). Implementing rules and regulations of Republic Act No. 11223: Universal Health Care Act. Department of Health.
- Economic Commission for Latin America and the Caribbean (ECLAC). (2020). Participatory budgeting and SDG localization in Latin America. Santiago: United Nations ECLAC.
- Executive Order No. 138, s. 2021. (2021). Full devolution of certain functions of the executive branch to local governments. Official Gazette. <https://www.officialgazette.gov.ph>
- Ministry of Natural Resources (MNR). (1982). *Implementing guidelines on the granting of preferential treatment to small municipal fisherfolk* (Joint MNR Administrative Order No. 3, Series of 1982). Republic of the Philippines.
- OECD. (2020). A territorial approach to the Sustainable Development Goals: Synthesis report. Paris: OECD Publishing. <https://doi.org/10.1787/e86fa715-en> (doi.org in Bing)

- Provincial Government of Pangasinan. (2023). *Development agenda and key development thrusts*. Official Website of the Province of Pangasinan. <https://www.pangasinan.gov.ph/the-province/development-agenda/>
- Stamos, I. (2024). What Does SDG Monitoring Practice Tell Us? An Analysis of Localized SDG Monitoring Approaches (peer-reviewed publication). <https://www.mdpi.com/2071-1050/16/23/10649>
- United Nations Development Programme (UNDP). (2021). *Localizing the SDGs in Africa: Lessons learned and best practices*. New York: UNDP.
- United Nations. (2025). *The Sustainable Development Goals Report 2025*. <https://unstats.un.org/sdgs/report/2025/The-Sustainable-Development-Goals-Report-2025.pdf>

Mental Health and Service Quality of Student Peer Counselors in an Autonomous Higher Education Institution

Paulita G. Boado^{1*}, Imelda E. Cuartel¹, Glory Ann B. Feliciano¹, Margie D. Viado²,
Carmelo John E. Vidal¹

¹Graduate School, University of Luzon, Dagupan City, Philippines

²College of Liberal Arts, University of Luzon, Dagupan City, Philippines

*Email : margieviado@gmail.com

Abstract

Universities and colleges serve as important avenues for the holistic development of students. This underscores the need for a robust and accessible counseling program, including the availability of a peer counseling program facilitated by trained student peer counselors. Peer counseling addresses challenges such as limited manpower and resources, which are evident in the Philippine setting. It also serves as a proactive and responsive approach to meeting the mental health needs of students within the academic community. This study critically assessed the mental health index of the peer counselors facilitated by the Youth Peer Organization under the auspices of the guidance office of the University of Luzon, an autonomous institution of higher learning in relation to their quality of services as evaluated by their student clients. The study utilized the descriptive-correlational method of research. It includes 50 student peer counselors as participants of the study. Results revealed the need for targeted support programs and resources to improve and strengthen the mental well-being of student peer counselors, thereby enhancing their ability to provide effective counseling services while safeguarding their own mental health. Further, student-client were generally very satisfied with the peer counseling session facilitated by the student peer counselors wherein student peer counselors proactively approach and interact with the students. It can be inferred that student peer counselors were able to facilitate a program with a very satisfactory rating as they have experienced mental health concerns similar to the student themselves, emerging as vital solution to today's student generation mental health issues.

Keywords: Mental Health, Peer Counseling; Service Quality; Student Peer Counselors; Psychological Well-Being

1. Introduction

Colleges and universities are among the primary institutions that foster the holistic development of students. Mental health issues can lead to low self-esteem and diminished motivation to learn among students (Markoulakis & Kirsh, 2013). Students with poor mental health are more likely to have academic performance and are at a greater risk of dropping out of school (Eisenberg, et. al. 2009). The involvement of guidance counselors has been recognized as essential in addressing students' mental health concerns (Jones, 2021). Counseling plays a crucial role in providing support and psychosocial services in schools. However, in many schools, particularly in remote areas, the implementation of counseling services faces various challenges, resulting in suboptimal service delivery (Fitriyah et. al, 2023).

Challenges such as limited manpower and resources are evident in the Philippines. As of December 31, 2024, the Professional Regulation Commission (PRC) reported a total of 5,004 registered Guidance Counselors nationwide (Professional Regulation Commission [PRC], 2025). This shortage of qualified personnel increases the likelihood of burnout and compassion fatigue among guidance counselors, which may adversely affect their overall well-being and professional effectiveness (Jones, 2021).

Counselors typically experience mental and physical exhaustion due to the multifaceted demands of school counseling (Williams, 2021). As such, most ethical codes specifically emphasize the importance of counselors practicing self-care to maintain optimal mental health. School counselors are expected to regularly assess and monitor their physical and psychological well-being to sustain professional effectiveness (Williams, 2021). The mandate of self-care in counseling profession organizations reflects the principle that counselors can work effectively with their clients only when they are psychologically, mentally, and spiritually well.

The scarcity of guidance counselors, coupled with the misconception among students that the Guidance Office serves primarily as a disciplinary office, has contributed to students' reluctance to seek counseling services. Moreover, stigma associated with mental health and help-seeking further discourages students from seeking professional support for their mental health concerns (Martinez et al., 2020). These challenges highlight the need for alternative support systems, such as peer counseling programs, to improve the accessibility and acceptability of mental health services within educational institutions.

Given the increasing number of student mental health concerns, as reflected in the growing number of referrals, the University of Luzon Guidance Center remains committed to expanding its counseling and mental health services. The Center continues to train and equip more student peer counselors to serve as partners in implementing activities and interventions that promote mental health awareness within the institution. Thus, this study will be instrumental in assessing the mental health and service quality of student peer counselors, which are crucial to the delivery of a robust and accessible peer counseling program that supports students' academic persistence and holistic well-being.

Objectives of the study

This study critically assessed the mental health index of the peer counselors of the Disconnect to Reconnect Program facilitated by the Youth Peer Organization under the auspices of the Guidance Office of the University of Luzon, an autonomous higher education institution. It also examined the relationship between the student peer counselors' mental health and the quality of counseling services they provided, as evaluated by their student clients. Results of the study served as a basis for improving the said program and proposing complementary programs to enhance the overall performance of the student peer counselors in step with the university's guidance program.

Specifically, the study was guided by the following objectives:

- To determine the mental health index of the student peer counselors using the Mental Health Inventory-38
- To assess the quality of services rendered by student peer counselors as evaluated by their student clients.
- To determine the extent of significance of relationship that exists between the mental health index of the student peer counselors and the quality of services they render to their student clients.

2. Materials and Methods

Research Method Used

The descriptive-correlational method was utilized in this study. The descriptive-correlational research method allowed the researcher to describe the variables and determine the extent of the relationships among them. In this study, the mental health index of the student peer counselors and the quality of services they rendered to their student clients were described, and the relationship between these variables was assessed.

Respondents of the Study

Eligible respondents for this study were 50 student peer counselors and 50 student clients. The 50 student peer counselors met the following inclusion criteria: (a) active and voluntary members of the Youth Peer Organization under auspices of the Guidance Office of the University of Luzon; (b) completion of peer counseling training, as verified by the designated guidance personnel; (c) enrollment in or completion of coursework in Positive Psychology and/or Introduction to Counseling; and (d) facilitation of peer counseling sessions to first year college students.

Instrumentation

To assess the mental health of the student peer counselors, the Mental Health Inventory (MHI-38) was utilized. The MHI-38 is a standardized instrument designed to measure both positive

mental states (psychological well-being) and negative mental states (psychological distress). It consists of thirty-eight (38) items that assess various dimensions of mental health experienced over the preceding four weeks, including anxiety, depression, emotional control, general positive affect, emotional ties, and life satisfaction.

The MHI-38 was developed without clinical cutoff scores. Instead, it assesses psychological well-being and psychological distress as complementary dimensions of mental health. Higher scores indicate a higher level of the construct being measured. Fourteen (14) items assess the positive aspects of mental health, such as happiness and life satisfaction (e.g., “How often have you been happy or satisfied with your personal life during the past month?”), while twenty-four (24) items assess the negative aspects of mental health, such as anxiety and emotional distress (e.g., “How often have you been nervous or irritable when faced with unexpected or exciting situations during the past month?”).

The instrument demonstrated excellent reliability, with a Cronbach’s alpha coefficient of 0.96 for the overall scale, 0.94 for the Psychological Well-Being subscale, and 0.96 for the Psychological Distress subscale. All items, except Items 9 and 28, use a six-point response scale, while Items 9 and 28 utilize a five-point response scale.

To measure the service quality rendered by student peer counselors to their student clients, a researcher-made questionnaire was developed. The instrument consists of fifteen (15) Likert-scale items designed to assess the counselors’ micro-counseling skills and adherence to ethical counseling standards. The micro-counseling skills evaluated include active listening, nonverbal communication, effective use of silence, empathy, and appropriate responding techniques such, as reflection, questioning, summarizing, and paraphrasing.

Prior to its administration, the researcher-made questionnaire underwent content validation. The instrument was evaluated by a panel of three experts consisting of a licensed psychometrician and two experienced guidance practitioners to establish its content validity and ensure that it adequately measured the quality of services rendered by the student peer counselors.

Data Gathering Procedure

Prior to data collection, informed consent was obtained from all active student peer counselors who voluntarily agreed to participate in the study. Upon obtaining their consent, the Mental Health Inventory–38 (MHI-38) was administered to assess their mental health status. Clear instructions for completing the inventory were provided to ensure accurate and reliable responses.

Approval to conduct peer counseling sessions involving first-year college students was obtained from the deans of the University's ten colleges. Following the approval, the student peer counselors facilitated peer counseling sessions with their assigned student clients.

After each peer counseling session, the student clients were requested to complete a survey questionnaire designed to evaluate the quality of services rendered by the student peer counselors. The questionnaire assessed various dimensions of service quality, including the student peer counselors' micro-counseling skills and adherence to ethical counseling standards.

Throughout the data collection process, ethical principles were strictly observed. All participants were adequately informed of the nature, purpose, and procedures of the study, and their voluntary informed consent was obtained prior to their participation. The respondents were assured that all information collected would be treated with the utmost confidentiality and used solely for research purposes. To protect the participants' privacy, no personally identifiable information was collected or included in the study.

Statistical Treatment of Data

The following statistical tools were employed to analyze and interpret the data gathered in this study.

To determine the mental health index of the student peer counselors, the responses obtained from the Mental Health Inventory–38 (MHI-38) were tallied, tabulated, and analyzed using frequencies and percentages.

To determine the level of service quality rendered by the student peer counselors, as evaluated by their student clients, the weighted mean was used. The computed mean scores were interpreted using the following rating scale:

Rating Scale	Statistical Limits	Descriptive Equivalents (DE)
4	3.26-4.00	Very Satisfactory (VS)
3	2.51-3.25	Satisfactory (S)
2	1.76-2.50	Unsatisfactory (US)
1	1.00-1.75	Very Unsatisfactory (VU)

3. Results and Discussions

Mental Health Index among the Student Peer Counselors

This part details the mental health index among the student peer counselors and the two (2) global scales of Mental Health Inventory particularly psychological distress and psychological well-being.

Table 1 Mental Health Index (MHI) of Student Peer Counselors n=50

	Low	Moderate	High	Overall
Psychological Distress	62	38	0	100
Psychological Well-Being	18	57	25	100
Mental Health Index	12	82	6	100

Table 1 lists the mental health index (MHI) of student peer counselors. MHI scores yield that majority of the student peer counselors (82%) exhibit moderate level of mental health. This suggests a baseline of mental well-being that supports their ability to perform their roles as student peer counselors, but is not indicative of exceptional resilience nor optimal psychological health. Conversely, a notable finding is that 12% of student peer counselors demonstrate a low level of mental health. This subgroup may require additional support and interventions to enhance their psychological well-being, and ensure they can effectively perform their counseling duties without personal detriment. Finally, a smaller group comprising 6% of student peer counselors have high mental health index. These individuals represent an example of optimal psychological well-being as student peer counselors, potentially serving as models for resilience and effective self-care practices that could be shared across the academic community.

The well-being of mental health providers is essential to their ability to perform their professional responsibilities effectively (Rupert & Dorociak, 2019). Although mental health providers are responsible for promoting psychological well-being, they are also vulnerable to stress, burnout, and other mental health concerns. Consistent with this, the findings suggest that student peer counselors are not exempt from experiencing mental health challenges despite their role in providing peer support.

As positive mental health is associated with emotional, psychological, and social well-being (Lamers, 2012), the mental health of service providers should not be overlooked, as it may directly influence the quality of the services they deliver. As shown in the study of (Harnois and Gabriel, 2000), mental health issues can have an impact on workers' physical health and psychological health including level of motivation, physical and mental energy, and ability to develop and maintain a relationship in personal and professional life. This also applies to student peer counselors, where providing mental health services requires counselors to be in a good state to provide holistic care (Posluns & Gall, 2020).

Service Quality Rendered by Student Peer Counselors

The quality of service rendered by the student peer counselors pertains to the evaluation given by their student-client after the one-time session of peer counseling conducted. Fifteen (15) indicators were included to measure the level of satisfaction of the student-client for the peer counseling session facilitated by the student peer counselor.

Table 2 Service Quality Rendered by Student Peer Counselors as Evaluated by their Student-Client n=50

	M	DE	RANK

1. My peer counselor made me feel comfortable and is easy to talk to.	3.80	VS	1
2. I learned skills to help me manage future problems.	3.38	VS	14
3. Peer Counseling has helped me stay in school.	3.36	VS	15
4. I would recommend counseling to my friends.	3.72	VS	5
5. I received appropriate information about confidentiality and my rights and responsibilities.	3.62	VS	9
6. I am glad I participated in the peer counseling session and would come again if needed.	3.78	VS	3
7. I regard the peer counseling as a necessary part of the college.	3.66	VS	7
8. I felt accepted and respected by my peer counselor.	3.76	VS	4
9. The peer counselor understood the concerns I brought to counselling	3.66	VS	7
10. The peer counselor helped me to be comfortable enough to express what I was thinking and/or feeling most of the time.	3.68	VS	6
11. The peer counselor helped me to clarify the nature of my concerns.	3.46	VS	13
12. I was encouraged by the peer counselor to make my own decisions.	3.52	VS	10
13. The peer counselor seemed well trained and skilled in helping me.	3.48	VS	11
14. Due to the peer counseling, I am better prepared now to work through future problems on my own.	3.48	VS	11
15. Overall, I feel satisfied with the quality of the peer counseling.	3.80	VS	1
Overall Mean	3.61	VS	

Legend Scale	Statistical Limits	Descriptive Equivalent	
4	3.26-4.00	Very Satisfactory	VS
3	2.51-3.25	Satisfactory	S
2	1.76-2.50	Unsatisfactory	U
1	1.00-1.75	Very Unsatisfactory	VU

Table 2 presents the quality of services rendered by the student peer counselors as evaluated by their student clients. The results reveal an overall mean score of 3.61, which corresponds to a very satisfactory rating. This indicates that the student clients generally

perceived the services provided by the student peer counselors to be highly satisfactory and effective in addressing their concerns.

Among the indicators, “My peer counselor made me feel comfortable and is easy to talk to” and “Overall, I feel satisfied with the quality of the peer counseling” both obtained the highest mean score of 3.80, ranking first and receiving a very satisfactory rating. These findings suggest that the peer counselors were successful in establishing a supportive, approachable, and trusting environment, which contributed significantly to the clients’ overall satisfaction with the counseling experience. The results are consistent with the findings of Astiti (2019), who emphasized that peer counseling plays a vital role in adolescent development because young people often feel more comfortable discussing personal issues with peers than with parents, teachers, or other authority figures. This preference is largely attributed to shared experiences, similar perspectives, and the belief that peers are less likely to judge or criticize them. Consequently, peer relationships can facilitate openness, trust, and meaningful communication during the counseling process.

The statement “I learned skills to help me manage future problems” obtained a weighted mean of 3.38, which is interpreted as very satisfactory. This finding indicates that the student clients perceived the peer counseling sessions as beneficial in developing coping skills and problem-solving strategies that can be applied to future challenges. The result suggests that peer counseling extends beyond addressing immediate concerns and contributes to the development of personal competencies that enhance resilience and self-efficacy. This finding is supported by the systematic review conducted by Pointon-Haas et al. (2023), which found that peer support interventions in higher education contribute positively to students’ mental health, well-being, and sense of connectedness. Similarly, Simmons et al. (2023) reported that peer support can enhance young people's ability to cope with

anxiety, depression, and other psychosocial challenges by fostering mutual understanding, emotional validation, and the exchange of practical strategies for managing difficulties. Their review emphasized that shared lived experiences enable peers to provide relevant guidance and encouragement, which can strengthen individuals' confidence in handling future problems.

Both statements, "The peer counselor helped me clarify the nature of my concerns" and "The peer counselor understood the concerns I brought to counseling" received very satisfactory ratings, with weighted means of 3.46 and 3.66, respectively. These findings indicate that the student clients perceived the peer counselors as effective in helping them gain a clearer understanding of their concerns and in demonstrating genuine understanding of the issues they presented during the counseling sessions. The results suggest that the peer counselors were able to establish meaningful helping relationships characterized by active listening, empathy, and effective communication. These findings are supported by Seery et al. (2021), who emphasized the value of peer-based support programs in higher education. Their study found that peer mentoring fosters meaningful relationships built on trust, shared experiences, and mutual understanding, enabling students to openly discuss their concerns and challenges. Such interactions create a supportive environment in which students feel heard, understood, and empowered to reflect on their experiences and identify appropriate solutions to their concerns.

Furthermore, Seery et al. (2021) highlighted the importance of viewing students as partners within higher education institutions, recognizing that students can play an active and meaningful role in supporting the academic, personal, and emotional development of their peers.

All fifteen indicators received very satisfactory ratings, indicating that the services rendered by the student peer counselors were consistently evaluated positively by the student clients. The overall mean score of 3.61 indicates that the student clients were highly satisfied with the quality of the peer counseling sessions facilitated by the student peer counselors. This finding suggests that the peer counselors were effective in providing support, fostering positive counselor-client relationships, and addressing the concerns of their fellow students.

Table 3 Extent of the Significance of Relationships Between Student Peer Counselors Mental Health Index and Quality Service n=50

	r	Sig.	Decision
Psychological Distress	-.030	.838	Accept <i>H₀</i>
Psychological Well-Being	.011	.941	Accept <i>H₀</i>
Mental Health Index	-.022	.881	Accept <i>H₀</i>

Table 3 presents the extent of significant relationship that exist between the mental health index of student peer counselors and the quality of services they rendered as evaluated by their student clients.

The findings revealed that there was no statistically significant relationship between the psychological distress of student peer counselors and the quality of services they provided ($r = -.030$, $p = .838$). This indicates that the level of psychological distress experienced by the student peer counselors was not significantly associated with the quality of services they rendered to their clients. Similarly, no statistically significant relationship was found between psychological well-being and quality of service ($r = .011$, $p = .941$). Likewise, no statistically significant relationship exist between the mental health index and the quality of services rendered ($r = -.022$, $p = .881$). The negligible negative correlation indicates that the mental health index of the student peer counselors was not a determining factor in the quality of peer counseling services they provided.

The negligible relationship between student peer counselors' mental health index and their service quality may be explained by studies suggesting that service quality is influenced by multiple factors beyond the mental health status of the student peer counselors. In particular, studies have shown that structured preparation and adequate training of peer supporters are critical in ensuring service effectiveness and consistency (Seery et al., 2021). Likewise, peer support programs in higher education emphasize the importance of relational qualities such as trust, empathy, and shared lived experience in facilitating meaningful student engagement and support (Pointon-Haas et al., 2023). Furthermore, systematic evidence suggests that effective peer mentoring is strongly associated with

relational competence and communication skills, as well as ongoing supervision and program structure that guide peer counselors in delivering appropriate support (Simmons et al., 2023; Gehreke et al., 2024). These findings collectively suggest that the effectiveness of peer counseling is shaped more by training, relational capacity, and program design than by the peer counselors' own mental health status.

4. Conclusion

Within the scope of this study, the following conclusions were drawn:

This study investigated the relationship between the mental health index of student peer counselors and the quality of the services they rendered, highlighting the importance of strengthening the institution's peer counseling program.

With these findings, it can be concluded that there is a need for specific support programs and resources intended at improving and strengthening the mental well-being of student peer counselors, thereby increasing their ability to provide effective counseling services while also safeguarding their own mental health.

Student-client were generally very satisfied with the provisions of peer counseling session wherein student peer counselors proactively approach and interact with the students. This can be a good avenue for the students to learn more about the different guidance and counseling services available, eradicate the misconceptions about Guidance Services and lessen stigma among students.

Therefore, the very satisfactory level of service may be attributed to other contributing factors such as students' greater comfort in disclosing personal concerns to individuals of a similar age group, as well as the personal characteristics and interpersonal qualities of the student peer counselors. In this regard, the implementation of a structured training series for student peer counselors is recommended to further enhance their competencies and to strengthen their role as an extension arm of the Guidance Center in delivering programs and interventions that promote mental health awareness within the institution.

In addition, the proposed school-based mental health program may be integrated into the university's existing mental health promotion and prevention policies and practices. This initiative may be strengthened through collaborative partnerships with relevant stakeholders within and outside the institution to ensure a more comprehensive, sustainable, and responsive mental health support system for students.

Recommendations for Further Studies

The continuous implementation of mental health support programs for both new and existing student peer counselors is recommended. These programs aim to enhance their mental well-being, particularly among those experiencing lower levels of mental health. Such initiatives may include group and individual counseling sessions, regular mental health check-ins (e.g., "Kumustahan" or "ZOOMustahan"), and the promotion of a supportive environment to enable student peer counselors to effectively manage their own mental health while supporting others.

Further research is recommended to explore additional factors influencing service quality. Qualitative studies may be conducted to gain an in-depth understanding of student clients' expectations and the interpersonal dynamics within counseling sessions, thereby providing valuable insights for improving service quality. Moreover, future studies may examine other variables, such as compassion fatigue and self-compassion, as determinants of peer counseling effectiveness.

References

- Astiti, S. P. (2019). Efektivitas Konseling Sebaya (Peer Counseling) dalam Menuntaskan Masalah Siswa. *IJIP: Indonesian Journal of Islamic Psychology*, 1(2), 243–263. <https://doi.org/10.18326/ijip.v1i2.243-263>
- Gehreke, L., Schilling, H., & Kauffeld, S. (2024). Effectiveness of peer mentoring in the study entry phase: A systematic review. *Review of Education*, 12, e3462. <https://doi.org/10.1002/rev3.3462>
- Eisenberg, Daniel & Golberstein, Ezra & Hunt, Justin. (2009). Mental Health and Academic Success in College. *The B.E. Journal of Economic Analysis & Policy*. 9. 40-40. 10.2202/1935-1682.2191.
- Fitriyah, L., Nadifah, N., Aini, N., Putri, N. F. H., & Damayanti, A. D. (2023). Enhancing counseling services in secondary schools through the implementation of training modules and counseling materials for peer counselors. *Bulletin of Community Engagement*, 3(2), 175–192. <https://doi.org/10.51278/bce.v3i2.827>
- Harnois, G., & Gabriel, P. (2000). Mental health and work: Impact, issues and good practices. World Health Organization and International Labour Organization. <http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1223&context=gladnetcollect>
- Jones, A.R. (2021). I matter: Understanding the self-care practices of school counselors during the COVID-19 pandemic and how internal and external factors create barriers. Graduate Theses and Dissertations, University of Arkansas. Proquest, 28418921.
- Pointon-Haas, J., Waqar, L., Upsher, R., Foster, J., Byrom, N., & Oates, J. (2023). A systematic review of peer support interventions for student mental health and well-being in higher education. *BJPsych Open*, 10(1), e12. <https://doi.org/10.1192/bjo.2023.603>
- Professional Regulation Commission. (2025). 2024 annual report. <https://www.prc.gov.ph/sites/default/files/2024%20PRC%20Annual%20Report%20%281%29.pdf>
- Lamers, S. M. A. (2012). Positive mental health: Measurement, relevance and implications (Doctoral dissertation, University of Twente). University of Twente. <https://doi.org/10.3990/1.9789036533706>
- Posluns, K., Gall, T.L. Dear Mental Health Practitioners, Take Care of Yourselves: a Literature Review on Self-Care. *Int J Adv Counselling* 42, 1–20 (2020). <https://doi.org/10.1007/s10447-019-09382-w>
- Markoulakis, Roula & Kirsh, Bonnie. (2013). Difficulties for University Students with Mental Health Problems: A Critical Interpretive Synthesis. *The Review of Higher Education*. 37. 77-100. 10.1353/rhe.2013.0073.
- Martinez, A. B., Co, M., Lau, J., & Brown, J. S. L. (2020). Filipino help-seeking for mental health problems and associated barriers and facilitators: A systematic review. *Social Psychiatry and Psychiatric Epidemiology*, 55(11), 1397–1413. <https://doi.org/10.1007/s00127-020-01937-2>
- Rupert, P. A., P. A., & Dorociak, K. E. (2019). Self-care, stress, and well-being among practicing psychologists. *Professional Psychology: Research and Practice*, 50(5), 343–350. <https://doi.org/10.1037/pro0000251>
- Seery, C., Andres, A., Moore-Cherry, N., & O'Sullivan, S. (2021). Students as partners in peer mentoring: Expectations, experiences and emotions. *Innovative Higher Education*, 46(6), 663–681. <https://doi.org/10.1007/s10755-021-09556-8>
- Simmons, M. B., Cartner, S., MacDonald, R., Whitson, S., Bailey, A., & Brown, E. (2023). The effectiveness of peer support from a person with lived experience of mental health challenges for young people with anxiety and depression: A systematic review. *BMC Psychiatry*, 23(194). <https://doi.org/10.1186/s12888-023-04578-2>
- Williams, C. (2021). To Help Others, We Must Care for Ourselves: The Importance of Self-Care for Peer Support Workers in Substance Use Recovery. *Journal of Addiction & Addictive Disorders* 8(2): 071. <https://doi.org/10.24966/AAD-7276/100071>

Perceptions, Motivations, and Academic Performance Among First-Year Dental Students: Evidence from a Philippine Medical University

Alvin M. Laxamana

University of Perpetual Help-Laguna

Email : laxamana.alvin@uphsl.edu.ph

Abstract

Students' perception of their chosen profession and their motivation are recognized as important factors that influence learning engagement and professional development. However, evidence regarding their relationship with academic performance among dental students remains inconclusive. This study examined the perception of the dental profession, motivation to pursue dentistry, and academic performance among first-year dental students. Specifically, it determined the relationship between perception and motivation, as well as their association with academic performance. A descriptive-correlational design was employed involving 69 first-year dental students enrolled at the University of Perpetual Help System Laguna during Academic Year 2017–2018. Data were collected using a researcher-developed questionnaire that underwent face and content validation by experts in dentistry, educational research, and statistics. Students' academic performance was measured using their General Weighted Average (GWA). Descriptive statistics and Pearson product-moment correlation were used to analyze the data at a 0.05 level of significance. Students demonstrated a very positive perception of the dental profession ($M = 3.76$) and a very high level of motivation ($M = 3.76$). A significant positive relationship was found between perception and motivation ($r = .341, p = .004$). However, no significant relationships were observed between perception and academic performance ($p = .944$) or between motivation and academic performance ($p = .149$). Positive perceptions of the dental profession were associated with higher motivation among first-year dental students but did not significantly influence academic performance. These findings suggest that academic achievement is influenced by multiple factors beyond students' perceptions and motivation. Future studies involving multiple institutions and standardized instruments are recommended to further investigate these relationships.

Keywords: perception, motivation, dentistry, academic performance, students

1. Introduction

Dentistry is a respected healthcare profession that combines scientific knowledge, technical competence, and patient-centered care. Students choose dentistry for various reasons, including professional autonomy, financial security, altruism, and opportunities for career development (Hannigan et al., 2024). Positive perception of the profession has been shown to influence students' motivation, professional identity, and engagement in learning (Ryan & Deci, 2020; Katebi et al., 2024). However, evidence regarding the relationship between motivation and academic performance remains inconsistent, suggesting that academic success is influenced by multiple factors beyond motivation alone (Almalki, 2019; Katebi et al., 2024). Guided by Victor Vroom's Expectancy Theory (1964), this study examined the relationships among first-year dental students' perception of the dental profession, motivation to pursue dentistry, and academic performance.

Objectives of the Study

This study aimed to determine the relationship between students' perception of the dental profession, their level of motivation to pursue dentistry, and their academic performance among first year dental proper students. Specifically, it sought to assess the level of students' perception of the dental profession and evaluate their level of motivation in pursuing dentistry. It also aimed to determine the academic performance of the students based on their General Weighted Average (GWA). Furthermore, the study intended to examine the relationships between perception and motivation, perception and academic performance, and motivation and academic performance.

Statement of the Problem

This study aimed to examine the relationship between students' perception of the dental profession, their level of motivation to pursue dentistry, and their academic performance among first year dental proper students at the University of Perpetual Help System Laguna.

Specifically, the study sought to answer the following questions:

1. What is the level of students' perception of the dental profession?
2. What is the level of students' motivation in pursuing dentistry?
3. What is the academic performance of the students based on their General Weighted Average (GWA)?
4. Is there a significant relationship between students' perception of the dental profession and their level of motivation to pursue dentistry?
5. Is there a significant relationship between students' perception of the dental profession and their academic performance?
6. Is there a significant relationship between students' level of motivation and their academic performance?

2. Methodology

Research Design

This study employed a descriptive-correlational research design to examine the relationships among students' perception of the dental profession, their level of motivation to pursue dentistry, and their academic performance. The descriptive component was used to determine the levels of perception, motivation, and academic performance, while the correlational component was utilized to identify significant relationships among these variables.

Population and Sample of the Study

The respondents of the study consisted of 69 first year dental proper students enrolled in the College of Dentistry at the University of Perpetual Help System Laguna during the Academic Year 2017–2018. A complete enumeration sampling technique was used, wherein all students in the target population were included in the study.

Research Instrument

Data were collected using a researcher-developed, non-standardized questionnaire designed to assess students' perception of the dental profession and their motivation to pursue dentistry. The instrument consisted of two sections: (1) items measuring students' perception of the dental profession and (2) items measuring their level of motivation to pursue dentistry. Responses were recorded using a four-point Likert scale, with higher scores indicating more positive perceptions and higher levels of motivation. Prior to data collection, the questionnaire underwent face and content validation by a panel of experts in dentistry, educational research, and statistics to evaluate the relevance, clarity, and appropriateness of the items. The experts' recommendations were incorporated into the final version of the instrument before its administration. Academic performance was measured using the respondents' General Weighted Average (GWA) obtained from their official academic records for the specified academic year.

Data Gathering Procedure

The researcher personally administered the questionnaire to the respondents. Prior to distribution, permission was secured from the College of Dentistry to access the list of first year dental proper students. The purpose of the study was explained to the respondents, and clear instructions were provided on how to answer the questionnaire. Confidentiality and anonymity of responses were assured. After completion, the questionnaires were collected, checked for completeness, and prepared for data analysis.

Data Analysis

The collected data were encoded, tabulated, and analyzed using appropriate statistical tools. The weighted mean was used to determine the level of perception and motivation of the respondents. Frequency and percentage were used to describe the academic performance based on GWA. To examine the relationships among variables, Pearson product-moment correlation (Pearson r) was employed. A significance level of 0.05 was used to determine whether the relationships among variables were statistically significant.

3. Results

This section presents the findings of the study in relation to the research objectives. Descriptive statistics were used to summarize perception, motivation, and academic performance, while Pearson correlation analysis was used to determine relationships among variables.

Perception of Dental Profession

Table 1 presents the respondents' perception of the dental profession. The overall weighted mean of 3.76 indicates that students have a very positive perception of dentistry. The highest-rated indicator was the perception that dentistry provides an opportunity to serve people who need oral health care ($M = 3.90$), followed by viewing dentistry as a noble profession ($M = 3.83$). On the other hand, the lowest-rated indicator was the perception of gaining fame through professional involvement ($M = 3.52$), although it still fell within the "very positive" range. These findings suggest that students primarily value the service-oriented and professional aspects of dentistry.

Table 1. Respondents' Perception of Dental Profession

Indicator	Description	Weighted Mean	Interpretation	Rank
1	Noble profession (earning "DR")	3.83	Very Positive	2
2	Expensive course	3.74	Very Positive	8
3	Opportunity to serve people	3.90	Very Positive	1
4	Fame through activities	3.52	Very Positive	10
5	Lucrative profession	3.78	Very Positive	4.5
6	Requires long education	3.75	Very Positive	6.5
7	Self-employed career	3.78	Very Positive	4.5
8	Requires big capital	3.75	Very Positive	6.5
9	Many job opportunities	3.80	Very Positive	3
10	Opportunity to work abroad	3.71	Very Positive	9
Average		3.76	Very Positive	

Level of Motivation in Pursuing Dentistry

As shown in Table 2, the respondents demonstrated a very high level of motivation, with an overall weighted mean of **3.76**. The highest-rated motivations included having career flexibility ($M = 3.94$) and the ability to provide job opportunities ($M = 3.94$). Meanwhile, the lowest-rated motivation was serving the underprivileged sector ($M = 3.48$), although it was still interpreted as "high." This indicates that students are strongly motivated by career opportunities, autonomy, and professional growth.

Table 2. Respondents' Level of Motivation in Pursuing Dentistry

Indicator	Description	Weighted Mean	Interpretation	Rank
1	Earn the title "DR"	3.83	Very High	4
2	Fulfill parents' dream	3.72	Very High	8
3	Serve the community	3.48	High	10
4	Financial success	3.51	Very High	9
5	Own clinic	3.83	Very High	4
6	Personal dream	3.80	Very High	6
7	Flexible time	3.77	Very High	7
8	Be own boss	3.83	Very High	4
9	Provide jobs	3.94	Very High	1.5
10	Career flexibility	3.94	Very High	1.5
Average		3.76	Very High	

Academic Performance

Table 3 presents the academic performance of the respondents based on their GWA. The results show that the largest proportion of students (36.23%) had a GWA of 2.75–3.00, which corresponds to a "Passed" classification. A considerable number of students (26.09%) fell within the "Fair" category (2.50–2.74), while only a small percentage achieved "Excellent" or "Outstanding" performance. These findings indicate that most students demonstrated moderate academic performance.

Table 3. Respondents' Academic Performance (GWA)

GWA Range	Description	Frequency	Percentage
1.25–1.49	Excellent	1	1.45%
1.50–1.99	Outstanding	2	2.90%
2.00–2.24	Very Satisfactory	2	2.90%
2.25–2.49	Satisfactory	8	11.59%
2.50–2.74	Fair	18	26.09%
2.75–3.00	Passed	25	36.23%
>3.00	Needs Improvement	13	18.84%
Total		69	100%

Relationship between Perception and Motivation

Table 4 shows the relationship between students' perception of the dental profession and their level of motivation. The results reveal a **significant positive relationship** ($r = 0.341$, $p = 0.004$). This indicates that students with a more positive perception of dentistry tend to have higher levels of motivation to pursue the profession.

Table 4. Relationship between Perception and Motivation

Variables	Pearson r	Interpretation	p-value	Significance
Perception vs Motivation	0.341	Low Correlation	0.004	Significant

Relationship between Perception and Academic Performance

As shown in Table 5, there was **no significant relationship** between perception and academic performance ($r = 0.009$, $p = 0.944$). This suggests that students' perception of the dental profession does not influence their academic outcomes.

Table 5. Relationship between Perception and Academic Performance

Variables	Pearson r	Interpretation	p-value	Significance
Perception vs Academic Performance	0.009	Negligible	0.944	Not Significant

Relationship between Motivation and Academic Performance

Table 6 presents the relationship between motivation and academic performance. The results indicate no significant relationship ($r = -0.176$, $p = 0.149$). This implies that students' motivation to pursue dentistry does not necessarily translate into higher academic performance.

Table 6. Relationship between Motivation and Academic Performance

Variables	Pearson r	Interpretation	p-value	Significance
Motivation vs Academic Performance	-0.176	Low Correlation	0.149	Not Significant

4. Discussion

The present study found that first-year dental students had a very positive perception of the dental profession and a very high level of motivation to pursue dentistry. These findings are consistent with Harrington et al. (2024), who reported that dental students are primarily motivated by professional autonomy, career opportunities, and the desire to contribute to society. Likewise, Ryan and Deci (2020) emphasized that positive perceptions of one's chosen profession enhance intrinsic motivation and engagement in learning.

A significant positive relationship was observed between students' perception of the dental profession and their motivation to pursue dentistry. This finding supports Vroom's Expectancy Theory (1964), which proposes that individuals are more motivated when they believe their efforts will lead to valued outcomes. It also corroborates the findings of Katebi et al. (2024), who reported that a positive professional identity and supportive educational experiences contribute to higher academic motivation among dental students.

However, no significant relationship was found between perception or motivation and academic performance. This finding is consistent with Katebi et al. (2024), who suggested that academic performance is influenced by multiple factors beyond motivation, including learning strategies and the educational environment. In contrast, Almalki (2019) reported a positive association between motivation and academic achievement, suggesting that differences in study population, educational context, and research methodology may explain the variation in findings. These findings should be interpreted in light of the study's limitations, including its single-institution setting, the inclusion of only first-year dental students, and the use of a researcher-developed questionnaire. Future research should include multiple dental schools, larger and more diverse samples, and standardized instruments with established reliability and validity to further examine the relationships among perception, motivation, and academic performance.

References

- Almalki, S. A. (2019). Influence of motivation on academic performance among dental college students. *Open Access Macedonian Journal of Medical Sciences*, 7(8), 1374–1381. doi:10.3889/oamjms.2019.319
- Harrington, M., Hallissey, J., Ray, N., O'Dowling Keane, S., & Hannigan, A. (2024). *Motivational factors for choosing dentistry as a career: A survey of undergraduate dental students in Ireland*. *Journal of the Irish Dental Association*. <https://doi.org/10.58541/001c.94409>
- Katebi, K., Ghaffarifar, S., Dehghani, G., & Poorabbas, A. (2024). Exploring the experiences of dentistry students regarding academic motivation: A content analysis study. *BMC Medical Education*, 24, Article 245. <https://doi.org/10.1186/s12909-024-05237-0>
- Lunenburg, F. C. (2011). Expectancy theory of motivation: Motivating by altering expectations. *International Journal of Management, Business, and Administration*, 15(1), 1–6.
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Vroom, V. H. (1964). *Work and motivation*. New York, NY: Wiley.

Difficulties Faced by Electoral Boards in the Barangay Elections

Julius P. Antenero^{1*}, Yasmin Pascual-Dormido²

¹Computer Maintenance Technologist I, Commission on Elections, Philippines

²Professor, STI West Negros University, Philippines

*Email : antenerojulius6075@gmail.com

Abstract

Electoral Boards play a crucial role in the conduct of elections, yet they face significant challenges that can affect their performance and mental well-being. This study assessed the difficulties experienced by Electoral Boards during the 2023 barangay elections in a component city in Central Philippines. Using a descriptive research design, data were collected from 240 Electoral Board from 19 barangays through stratified random sampling. Results showed that most respondents were 41 years and above, with bachelor's degrees, and served four or more barangay elections. Overall, Electoral Boards experienced a moderate level of difficulties during pre-election, election day and post-election, but specific phases posed heightened challenges. The most difficult pre-election activity was balancing duties with personal or professional responsibilities. On election day, enforcing voting rules amid crowding and managing watchers recorded the highest level of difficulty. In the post-election phase, preparing minutes and statistical reports identified as the most difficult task. No significant differences found in the level of difficulties when Electoral Boards group according to age, educational attainment and experience. The study recommends precinct decongestion, additional personnel and reassignment of administrative reporting to COMELEC to enhance electoral processes.

Keywords: Barangay; difficulties; electoral boards

1. Introduction

Elections are a vital element of democracy, allowing citizens to exercise their right to vote and choose their leaders (Indian Polity, 2023). In the United States, elections are determined by the Electoral College, where each state is allotted electors based on its congressional representation, totaling 538 nationwide, with a minimum of 270 needed to win (Martinez, 2024). In the Philippines, the Commission on Elections oversees various types of elections—national, local, and barangay—which are all decided through a popular vote system, where the candidate with the most votes wins. The success of these elections heavily depends on dedicated individuals who help manage and ensure the electoral process runs smoothly (Clark et al., 2021).

Traditionally, public school teachers served as Electoral Boards because of their accountability, competence, neutrality and familiarization in local communities. However, several reports highlighted the challenges and difficulties faced by public school teachers in line with their election duties. Cabrera (2023) reported that public school teachers in Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) faced high risk of hostility due to threats from rebels associated to candidates causing them high level of stress, anxiety and fear especially by losing parties.

During the 2023 Barangay and Sangguniang Kabataan Elections, Electoral Boards played a crucial role in ensuring the electoral process was successful, guided by COMELEC Resolutions 10924 and 10727. They were trained on election procedures and were responsible for tasks before, during, and after the election, including managing voter lines, verifying identities, issuing ballots, maintaining order, counting votes, and submitting election results. Despite their essential function, Electoral Boards often encountered challenges such as ballot shortages, missing ballot boxes, voter list discrepancies, and incidents of voter fraud, such as ballot-box stuffing, all of which undermined the integrity and smooth conduct of elections (Facts and Details, 2015).

The researcher's motivation to conduct this study stemmed from his extensive experience in the Commission on Elections, where he was exposed to the difficulties electoral boards face during barangay elections. In his work environment, he observed gaps in the electoral process, including training, logistics, and security challenges. These experiences heightened his awareness of the importance of understanding the difficulties electoral boards face during barangay elections. The

findings of this study aimed to formulate an action plan to enhance electoral policies and develop a post-assessment program that would contribute to an overall improvement of the electoral process.

1. 1 Theoretical Framework

The study was anchored by the Job Demand-Resources (JDR) theory authored by Arnold B. Bakker and Evangelia Demerouti in 2001 which emphasizes that employee performance and well-being are influenced by job demands and job resources. Job Demands refer to tasks that require high energy and effort, like counting votes, appreciation of ballots, and managing long lines of voters. High job demand may lead to stress and emotional burnout if not accompanied by job resources. In contrast, job resources refer to the factors that can mitigate or lessen job demands, such as social support, personal development, training, and capacity building. Job Demand-Resources Theory emphasizes that sufficient job resources may buffer the unfavorable impact of job demand.

In the context of barangay elections, Electoral Boards were exposed to high various job demands during pre-election, election day and post-election phases. These includes election preparations, trainings, counting of votes and administrative reporting. The intensity of these activities may contribute to stress, fatigue, challenges and difficulties when resources such as manpower, trainings and assistance are insufficient.

Guided by this theory, this study examined the difficulties faced by Electoral Boards during the conduct of barangay elections. This framework assumes that difficulties faced by Electoral Boards arise from electoral work and unavailability of resources. Strengthening electoral support mechanisms and providing adequate resources may reduce challenges and difficulties of Electoral Boards during barangay elections.

1. 2 Conceptual Framework

The study determined the level of difficulties faced by the electoral Boards in a component city in Central Philippines during the 2023 Barangay and Sangguniang Kabataan elections. Specifically, it focus on three phases: pre-election, election-day and post-election activities.

Cambridge Dictionary defines Difficulty as "something that is hard to do or to understand." In this study, the difficulties are the struggles and hardships encountered by Electoral Boards in performing their mandated duties throughout the entire electoral process.

Electoral Board refer to the Board of Election Inspectors composed of the Chairman, Poll Clerk, and Third member authorized by COMELEC to vote and count election results (COMELEC Resolution 10924).

Pre-election activities include tasks related to preparations, trainings, checking and verification of documents. Election-day activities cover voter management, ballot distribution, maintenance of peace and order with the polling places. Post-election activities involve counting and appreciation of ballots, preparations of documents and administrative reporting following the close of voting.

The study also examines whether there are differences in the level of difficulties faced by Electoral Boards when grouped according to age, highest educational attainment and experience. The level of difficulties was measured using of a 5-point Likert scale ranging from Very Low Level to Very High Level, with higher scores showing greater difficulties encountered during barangay elections.

2. Objectives

The study aimed to measure the level of difficulties electoral boards faced in the 2023 Barangay Elections in a component city in Central Philippines, as a basis for an action plan. More specifically, it aimed to determine: 1) the profile of the respondents in terms of age, number of elections served, and highest educational attainment; 2) the level of difficulties faced by electoral boards according to pre-election activities, election day, and post-election activities; and 3) significant difference in the level of difficulties faced by Electoral Boards when grouped and compared according to the variables.

3. Methodology

This section presents a discussion of the research methodology used, the study's subjects and respondents, the research instruments, the validity and reliability of the instruments, the data-gathering procedure, and the statistical tools and procedures for data analysis.

3.1 Research Design

The study employed a descriptive research design to measure the difficulties faced by Electoral Boards during the 2023 Barangay and Sangguniang Kabataan Elections in a component city in central Philippines. Data was collected using Google Forms with a Likert scale, and the sample size was determined using Cochran's formula, ensuring representation from various barangays through stratified random sampling. This approach enabled a systematic analysis of the relationship between the dependent and independent variables. Singh (2023) emphasized that descriptive research is effective for measuring characteristics, behaviors, and perceptions, while Hassan (2024) noted its limitation in predicting outcomes or establishing causality, though it remains useful for generating hypotheses and identifying trends.

3.2 Study Respondents

The study focused on public school teachers who served on electoral boards during the 2023 barangay elections in a component city in Central Philippines, with each precinct consisting of a Chairman, a Poll Clerk, and a Third Member. These electoral boards faced challenges during pre-election, election-day, and post-election activities, which significantly impacted their performance. Stratified random sampling was employed to ensure proper representation of subgroups, as described by Poojary (2024), and the sample size was determined using Cochran's formula, with a 95% confidence level and 5% margin of error. A proportional allocation formula was applied to select 240 respondents from a population of 633.

3.3 Instruments

To assess the difficulties electoral boards faced during the 2023 Barangay and Sangguniang Kabataan Elections in a component city in Central Philippines, data were collected using a researcher-made survey questionnaire, which underwent validity and reliability testing. The questionnaire consisted of two parts: Part I gathered demographic information, such as age, educational attainment, and the number of elections served, while Part II focused on identifying challenges across pre-election, election-day, and post-election activities, with 10 items in each category, totaling 30 items. Respondents rated each item on a scale from 1 (Almost Never) to 5 (Always), to indicate the frequency of difficulties encountered. It was subjected to validity (4.78-excellent) and reliability (0.991-excellent). All of them were interpreted as worthy and good, respectively.

3.4 Data Gathering Procedure

After establishing the validity and reliability of the research instrument, the researcher writes a letter to the officer in charge asking permission to conduct the study. Upon approval, the researcher coordinates with the respondents, explains the purpose of the study, and provides instructions on completing the questionnaire objectively and honestly. Thereafter, the Google Form link was distributed to the respondents. As part of the protocol, they will be assured of the confidentiality of the data.

3.5 Data Analysis and Statistical Treatment

Objective No. 1, a descriptive-analytical scheme, and Frequency Count and Percentage distribution were used to determine the profile of the respondents in terms of age, highest educational attainment, and the number of elections served.

Objective No. 2 used a descriptive-analytical approach and the mean to determine the level of difficulty electoral boards faced across pre-election, election day, and post-election activities during the 2023 Barangay Elections.

Objective No. 3 used a comparative-analytical scheme and the Mann-Whitney U Test to determine significant differences in the level of difficulty faced by Electoral Boards, grouped and compared according to the aforementioned variables.

4. Results and Discussion

This section presents, analyzes, and interprets the data gathered in accordance with its predetermined objectives.

Table 1 Profile of the Respondents

Variables	Categories	Frequency	Percentage
Age	Younger (below 41 years old)	111	46.20
	Older (41 years old and above)	129	53.80
	Total	240	100
Highest Educational Attainment	Lower (Bachelor's Degree)	143	59.60
	Higher (Master's and Doctoral)	97	40.40
	Total	240	100
Number of Barangay Elections Served	Few (below 4 elections)	117	48.80
	Many (4 elections and above)	123	51.20
	Total	240	100

Table 1 presents the profile of respondents, including age, sex, civil status, number of elections served, and highest educational attainment. Two Hundred Forty electoral boards in nineteen barangays of a highly urbanized city in Central Philippines were surveyed.

The table shows that of 240 respondents, the majority, or 53.80 percent, aged 41 years and above, were the 129 electoral boards in the older category. The remaining 111 respondents were 41 years old or younger and comprised the younger category, accounting for 46.20 percent of the population. This implies that older election workers are more likely to engage in the democratic process than younger ones, which aligns with Burden et al.'s (2024) finding that the average age of poll workers in the United States was around 64 years, with many serving for decades. According to Pew Research Center Survey data, 58 percent of poll workers aged 61 or older served during the 2018 elections.

Most of the electoral boards that were respondents to this study were college graduates. One hundred Forty-three (143) or 59.60 percent are bachelor's degree holders while 97 or 40.40 percent were holders of a Master's or Doctorate degree, which implies that electoral boards have an academic capacity to fulfill their duties and responsibilities efficiently during barangay elections, which conforms to Abun et al. (2021), where they discovered that there was a connection between education level and self-efficacy. The researchers found that the higher an individual's educational background, the greater their sense of competence.

In terms of the number of elections served, 123 respondents (51.20 percent) have more experience in barangay elections than 117 respondents (48.20 percent), who have served 4 or more elections. This implies that electoral boards in a component city in the central Philippines have a deeper understanding and enough experience to perform their duties and responsibilities during barangay elections, which conforms with the study of Burden et al. (2024) that poll workers during the 2022 election in the United States were 85 percent of poll workers were veteran poll workers, while only 15 percent were newcomers.

Table 2 Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Pre-Election Activities

Items	Mean	Interpretation
<i>As an Electoral Board, I have difficulty in...</i>		
1. coordinating and communicating with COMELEC regarding election-related developments, concerns, and needs	2.58	Moderate Level
2. answering election-related questions before, during, and after the polls from voters and concerned citizens by applying learnings from training attended	2.62	Moderate Level
3. presenting, explaining, and executing the process of appreciating ballots as explained by COMELEC during the training	2.73	Moderate Level
4. applying learnings from pre-election training on election day	2.58	Moderate Level
5. doing glitch-free verification of election-related forms, documents, and supplies at the Municipal / City Treasurer's Office	2.66	Moderate Level
6. setting up a polling place in accordance with the recommended layout	2.48	Low Level
7. balancing pre-election duties with personal and professional responsibilities	2.79	Moderate Level
8. verifying and processing the certification of (Posted Computerized Voter's List (PCVL) and Election Day Computerized Voter's List (EDCVL) with zero to minimal issues or delays	2.67	Moderate Level
9. the delivery of election-related documents and paraphernalia to assigned polling precincts without security issues and delays	2.62	Moderate Level
10. equipping myself with skills, knowledge, and expertise through COMELEC's efficient planning and organizing activities	2.55	Moderate Level
Overall Mean	2.63	Moderate Level

The information in Table 2 shows the Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Pre-Election Activities. The overall mean score is 2.63, interpreted as Moderate Level. Item number 6, "setting up polling place in accordance with the recommended layout," got the lowest mean score of 2.48, interpreted as a "Low Level" of difficulty, while item number 7, "balancing pre-election duties with personal and professional responsibilities," obtained the highest mean score of 2.79, interpreted as "Moderate Level."

In pre-election phase, Electoral boards reported moderate level of difficulty with balancing election duties and personal responsibilities with the highest mean score. This finding reveals that pre-election phase the primary challenges is not in technical aspects of election preparation but the demands placed on the respondents which are primarily public-school teachers. Data indicates that election duties performed alongside with professional obligations creates workload pressures that may affect their well-being.

In a study conducted in Pakistan, Saleem et al. (2021) supported the findings, reporting that work overload, unclear role responsibilities, and conflicts are the main sources of stress that disrupt work processes and lead to poor performance. The researchers highlighted that employees experiencing high levels of stress have decreased job satisfaction and commitment. Stress at work

puts employees' mental and physical health at risk. Additionally, 90% of Americans express greater confidence in poll workers than in state officials, with 81% expressing confidence in poll workers (Leppert, 2024). The researcher added that limited public understanding of the job, long working hours, low salaries and benefits, health issues, and safety concerns are common challenges in poll worker recruitment.

Furthermore, the Teacher's Dignity Coalition (TDC) urged election officials to focus more on the welfare of poll workers during elections. They argued that poll workers' duties are not yet completed once the candidates have been proclaimed. Poll workers need to endure stress, hardships, and fatigue in returning election documents and paraphernalia to local COMELEC offices, prompting calls for a systematic retrieval process (Malipot, 2023). This was supported by the study of Fuentes (2023), which found that eight poll workers were rushed to the hospital in Central Visayas during the October 30, 2023 Barangay and Sangguniang Kabataan Elections. Several symptoms were observed among these poll workers, such as high blood pressure, severe body and chest pains, headaches, vomiting, and even symptoms of a heart attack. These conditions were caused by extreme heat during the elections.

Similar to Electoral Boards, work overload can cause mental and physical health issues, resulting in poor performance during barangay elections. As revealed by the study, balancing personal and professional responsibilities proved to be the most difficult aspect of serving during the barangay elections.

Table 3 Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Election-Day Activities

Items	Mean	Interpretation
<i>As an Electoral Board, I have difficulty in...</i>		
1. obtaining forms, documents, and supplies at the Municipal / City Treasurer's office on the day of the election	2.59	Moderate Level
2. managing long voting hours from 7:00 am to 3:00 pm as scheduled by COMELEC.	2.66	Moderate Level
3. applying rules that are being observed during voting hours, like long queuing of lines, managing watchers, and crowding of voters	2.90	Moderate Level
4. applying the prohibitions on voting to ensure fair, honest, and credible elections	2.59	Moderate Level
5. managing persons allowed inside the polling place as identified by COMELEC	2.55	Moderate Level
6. managing the holding area and express lane for PWDs, Senior Citizens, and heavily pregnant women in compliance with COMELEC guidelines	2.60	Moderate Level
7. managing the order of voting inside the precinct and maintaining physical space for orderly voting	2.60	Moderate Level
8. applying the manner of obtaining the ballots, such as identification of voter's identity, authentication, and distribution of ballots	2.65	Moderate Level
9. handling emergencies and incidents such as medical issues, threats, or violence that can occur during election	2.76	Moderate Level
10. communicating to law enforcement or security personnel during the election to address election-related concerns	2.53	Moderate Level
Overall Mean	2.64	Moderate Level

Table 3 discusses the Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area of Election-Day Activities. The overall mean score is 2.64, interpreted as Moderate Level. Item 10, "communicating to law enforcement or security personnel during the election to address election-related concerns," obtained the lowest mean score of 2.53, interpreted as a Moderate Level of difficulty. Meanwhile, item number 3, "applying rules that are being observed during voting hours, like long queuing of lines, managing watchers, and crowding of voters," got the highest mean score of 2.90, interpreted as a Moderate Level.

Election-day activities likewise registered a moderate level of difficulty in the management of voter queues, crowd control and election watchers with the most challenging task. Data shows that operational and crowd-management concerns present greater difficulties than implementing electoral procedures. The result suggests that respondents are capable of implementing election rules but having difficulties when the volume of voters exceeds the capacity of polling places.

This implies that the allocation of voters in every precinct exceeded the capacity of the polling place. This may cause overcrowding and chaos, making it difficult for Electoral Boards to maintain order at the precinct level and leading to voter frustration. The lack of personnel and crowd control may lead to low voter confidence and participation. There may be budget constraints that prevent the Commission on Elections from deploying additional manpower during the barangay elections. Furthermore, Electoral Boards may find it difficult to apply what they learned during training on election day. The venue may be overcrowded, or inadequate training facilities may affect the Electoral Boards' learning.

The findings align with Larrazabal (2020), who found that during barangay elections, precincts become overcrowded, comparable to a national fiesta, especially during the counting and announcement of results. The researcher argued that overcrowded precincts greatly affect the efficiency of Electoral Boards and the credibility of the election, thereby eroding public trust.

Table 4 Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Post-Election Activities

Items	Mean	Interpretation
<i>As an Electoral Board, I have difficulty in...</i>		
1. Applying the manner of counting votes by piling the ballots in 100 per bundle	2.68	Moderate Level
2. Applying the rules on Ballot appreciation by taking the ballots one by one and reading the names of candidates voted as stipulated in the rules for the appreciation of ballots provided in Section 211 of BP Blg. 881, such as Stray ballots, Invalid ballots, and the rule of the incumbent	3.15	Moderate Level
3. Tallying votes and preparing Election Returns with zero to minimal errors	3.17	Moderate Level
4. Preparing Election Minutes and Statistical Reports of male and female voters who actually voted	3.33	Moderate Level
5. The delivery of Election Returns to the Canvassing venue	3.04	Moderate Level
6. Managing the queuing and waiting time in the receiving of Election Returns by the Board of Canvassers	3.15	Moderate Level
7. Claiming my honorarium at the COMELEC office.	2.58	Moderate Level
8. Getting the support of COMELEC in post-election stress, fatigue, and hardships	2.72	Moderate Level
9. Accessing medical and emergency assistance provided by COMELEC after the election	2.80	Moderate Level
10. serving again as the Electoral Board based on my experience	2.40	Low Level
Overall Mean	2.90	Moderate Level

Table 4 reflects the information on the Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Post-Election Activities. The overall mean score is 2.90, interpreted as

Moderate Level. Item number 10, “serving again as Electoral Boards based on my experience,” got the lowest mean score of 2.40, interpreted as Low Level. On the other hand, item 4, “Preparing Election Minutes and Statistical Reports of Male and Female voters who actually voted,” obtained the highest mean score of 3.33, interpreted as a Moderate Level.

Among the three phases, post-election activities recorded the highest overall mean score. Preparing election minutes and statistical reports was identified as the most difficult task, which shows that additional administrative reporting constitutes a significant burden for the Electoral Boards after the close of voting. The finding revealed that the challenge lies not in the conduct of voting itself but in the extensive additional tasks required after the election. The results underscore the complexity of manual elections, where Electoral Boards count votes one by one, resulting in prolonged working hours and time constraints. Excessive additional reporting contributes to fatigue and increases the likelihood of errors. Consequently, assigning other tasks to COMELEC personnel may improve efficiency while reducing the workload of Electoral Boards.

A study in Tongo by Amegnran (2017) supports the research results, finding that a large number of voters and excessive paperwork requirements are causing a greater burden on poll workers. It requires more time and energy from poll workers, increasing the risk of mistakes. Similar to the results above, additional workload and paperwork posed greater difficulties for the electoral boards, which may greatly affect their performance during elections. On the other hand, a low budget during an election can negatively affect the whole electoral process, as cited in the study by Ortega et al. (2024) that Maricopa County spent a total of 3,864,000 million dollars to fund the election security and safety of the poll workers in the past four years to implement a peaceful and successful election.

Table 5 Difference in the Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Pre-Election Activities According to Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	111	118.03	6885.00	0.608	0.05	Not Significant
	Older	129	122.63				
Highest Educational Attainment	Lower	143	120.71	6905.50	0.955	0.05	Not Significant
	Higher	97	120.19				
Number of Barangay Elections Served	Few	117	118.63	6977.00	0.684	0.05	Not Significant
	Many	123	122.28				

Table 5 presents data on the difference in the level of difficulty faced by electoral boards in the barangay elections in the area of pre-election activities, according to variables such as age, highest educational attainment, and the number of barangay elections served. *P*-values 0.608, 0.955, and 0.684 of all the variables got higher values than the 0.05 significance level. These values indicate that there is no significant difference in the level of difficulty electoral boards faced on election day in the area, according to the variables. Thus, the null hypothesis was not rejected.

Even though all variables were interpreted as insignificant, there were activities in the pre-election phase that received a high mean score, specifically “balancing pre-election duties with personal and professional responsibilities,” which needs to be addressed to enhance work-life balance among electoral boards.

The finding suggest that the difficulties faced by Electoral Boards in pre-election phase are relatively uniformly across all the respondents regardless of demographic characteristics. This indicates that difficulties during pre-election are more likely attributable to organization and operational factors than individual attributes. Interventions should focus on improving institutional support rather targeting demographic groups. Efficient planning and support may be more effective in addressing this difficulties during pre-election.

EAPA-SA (2022) highlighted that policies and procedures should align with the current processes, systems, and structures. As work and the workplace rapidly change, it is a significant challenge for organizations to adapt. As with election policies and procedures, there should be an amendment to the policies, as revealed in this study, electoral boards found it most difficult to manage their election duties and professional obligations during the pre-election phase.

Table 6 Difference in the Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Election-Day Activities According to Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	111	116.39	6703.50	0.395	0.05	Not Significant
	Older	129	124.03				
Highest Educational Attainment	Lower	143	122.97	6582.50	0.503	0.05	Not Significant
	Higher	97	116.86				
Number of Barangay Elections Served	Few	117	120.24	7165.50	0.955	0.05	Not Significant
	Many	123	120.74				

Table 6 presents data on differences in the level of difficulty faced by electoral boards in Barangay Elections in the area of Election Day activities, according to variables such as age, highest educational attainment, and the number of barangay elections served. *P*-values 0.395, 0.503, and 0.955 of all the variables got higher values than the 0.05 significance level. These values indicate that there is no significant difference in the level of difficulty electoral boards faced on election day in the area, according to the variables. Thus, the null hypothesis was not rejected.

The analysis revealed no significant differences in election-day difficulties when grouped according to age, educational attainment, and experience. Operational difficulties encountered during election day are common across Electoral Boards and are not significantly influenced by demographic characteristics.

The absence of significant differences shows that difficulties during election day stem primarily from the structural conditions and inhumane environment of polling centers, which may cause voter congestion and overcrowding. These findings highlight the need for improvements in polling facilities, voter-to-precinct ratios, and the deployment of additional personnel. These mechanisms may have a greater impact on reducing difficulties during election day.

The abovementioned findings align with those of Mann et al. (2019); the researchers found that voter turnout increased by 4 percentage points when the polling place was more visible, such as through visible addresses, names, signs, and flags.

Additionally, there was a 2.5 percentage-point increase in voter turnout when the polling place had a high-quality interior, which respondents rated as excellent. Similar to barangay elections, there should be quality polling places for voters to cast their votes in order to improve turnout and the voting experience.

Furthermore, in a study on the impact of the work environment on employee performance in selected government agencies in Metro Manila, Philippines, Alonzo et al. (2023) emphasized that the working conditions of government employees, including workspace, leadership, culture, and well-being, were relatively high. The performance of government employees in terms of technical skills, punctuality, and professionalism was very satisfactory, owing to their conducive working environment.

Table 7 Difference in the Level of Difficulties Faced by Electoral Boards in the Barangay Elections in the Area Post-Election Activities According to Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	111	112.35	6254.50	0.091	0.05	Not Significant
	Older	129	127.52				
Highest Educational Attainment	Lower	143	119.23	6754.50	0.731	0.05	Not Significant
	Higher	97	122.37				
Number of Barangay Elections Served	Few	117	114.94	6545.50	0.226	0.05	Not Significant
	Many	123	125.78				

Table 7 presents data on differences in the level of difficulty faced by electoral boards during post-election activities in the barangay elections in the area, according to variables such as age, highest educational attainment, and the number of barangay elections served. *P*-values 0.091, 0.731, and 0.226 of all the variables got higher values than the 0.05 significance level. These values show that there is no significant difference in the level of difficulties faced by electoral boards in the Barangay Elections in the area post-election activities, according to the said variables. Thus, the null hypothesis was not rejected.

No significant differences were observed in the post-election difficulties across age, educational attainment, and experience. The data show that the burden associated with the post-election phase was administrative reporting and documentation, which were consistently experienced by the Electoral Boards regardless of their demographic characteristics.

The results suggest that, in the post-election phase, difficulties are embedded in the administrative requirements of the electoral process itself. The preparation of reports demands a high level of responsibility and energy even among experienced Electoral Board members. Policy reforms should focus on simplifying reporting, providing additional manpower, and removing some tasks from the Electoral Boards that COMELEC personnel can perform. These measures may reduce the workload and pressures on Electoral Boards, who are already exhausted during the post-election phase.

The findings align with a study on the effects of stress at Central Luzon State University, which involved 830 undergraduate college students. Belza et al. (2023) concluded that during the pandemic, there was a surge in mental health research on the pandemic's impact on people's lives. Belza found that perceived stress is one of the strongest predictors of burnout. Students with high perceived stress are more likely to experience burnout. Although there is a connection between perceived stress and burnout, a stress mindset plays a crucial role in controlling the level of perceived stress that leads to burnout.

Meanwhile, James et al. (2017) concluded that election administrators should have sufficient resources and capacity to ensure that an election runs smoothly. However, in Britain and elsewhere, there were concerns about the budget. The researchers argued that there were cuts in the election budget, while local authorities were overspending. Insufficient budgets and resources put pressure on election activities. This is similar to the Philippines, where barangay elections had very low budgets, resulting in cuts to election staffing. As this study reveals, difficulties in administrative reporting significantly affect Electoral Boards due to a lack of personnel during barangay elections.

5. Conclusion

The study found that electoral boards in a component city in Central Philippines experienced a "Moderate Level" of difficulties during pre-election, election day, and post-election activities, regardless of age, educational attainment, or election experience. Older respondents faced greater difficulties than younger respondents, and college graduates experienced more difficulties than those with advanced degrees, especially during the pre-election and election-day periods. Less experienced electoral boards had more difficulties on election day, while experienced boards struggled more with

pre-election and post-election tasks. Despite these challenges, the majority expressed willingness to serve again in future elections. The study revealed no significant differences in difficulty levels across age, education, or experience, supporting the null hypothesis. Recommendations include deploying support staff to assist electoral boards, removing the task of preparing statistical reports, improving ballot preparation, and adjusting election schedules to reduce voter congestion and waiting times. The study also suggests enhancing voter education to minimize conflicts and improve election processes.

Acknowledgment

The researcher expresses sincere appreciation to all those who contributed their time, expertise, and support throughout this study. Special thanks are extended to the thesis adviser for their guidance and invaluable insights, which played a pivotal role in shaping the research. Gratitude is also due to the esteemed panel members for their constructive feedback and thoughtful suggestions, which enhanced the quality of the study. The researcher is thankful for the motivation and support from the Dean of Graduate Studies, which was a driving force in completing the academic pursuit. This work is dedicated to the researcher's partner, family, and late relative, whose love and belief provided constant strength and inspiration. The researcher also thanks friends and colleagues for their encouragement and support throughout the journey and offers this work in gratitude to Almighty God for the grace, wisdom, and strength to achieve this accomplishment.

References

- Abun, D., Bumanglag, S. A., Lazaro, J. R., Magallanes, T., & Catbagan, N. C. (2021). The effect of educational attainment and length of work experience on the self-efficacy of teachers and employees. *International Journal of Business Ecosystem & Strategy*, 3(1), 16–28.
- Abdulaziz, A., Bashir, M., & Alfalih, A. (2022). The impact of work-life balance and work overload on teachers' organizational commitment: Do job engagement and perceived organizational support matter? *Education and Information Technologies*, 27, 10639–10658. <https://doi.org/10.1007/s10639-022-11013-8>
- Amegnan, K. M. (2017). *Assessing electoral process challenges through poll workers' performance in sub-saharan Africa-Togo*. Walden University.
- Alshalawi, Abdullah. (2019). Impact of Effective Collaboration and Consultation: Insights for Educators. Volume 2 Issue 9
- Asplund, E. (2023). *Training and professional development in electoral administration*. International IDEA. <https://doi.org/10.31752/idea.2023.34>
- Alonzo, M. C., Alda, M. L., Baluyot, A. M., & Briones, J. (2023). Impact of Work Environment to The Performance of Government Employees in Metro Manila, Philippines. *Philippines (November 28, 2023)*.
- Burden, B. C., & Stein, R. M. (2024). The Americans on the Front lines of Elections. <https://www.brookings.edu/articles/the-americans-on-the-front-lines-of-elections/>
- Burden, B. & Stein, R. M. (2023). Opting Out? Recent Challenges in Recruiting and Retaining Poll Workers. <https://electionlab.mit.edu/articles/optiming-out-recent-challenges-recruiting-and-retaining-poll-workers>
- Bhandari, P. (2020). How to Find the Mean | Definition, Examples & Calculator.
- BELZA, B. M. C., & GATCHALIAN, E. M. D. (2023). The Mediating Effect of Stress Mindset and Self-Connection on the Relationship between Perceived Stress and Burnout among College Students.
- Bobbit, Z. (2021). How to Report Cronbach's Alpha. <https://www.statology.org/how-to-report-cronbachs-alpha/>
- Bhandari, P. (2023). An Easy Introduction to Statistical Significance <https://www.scribbr.com/statistics/statistical-significance/>
- Benjamin Crost, Joseph H Felter, Hani Mansour, Daniel I Rees, Narrow Incumbent Victories and Post-Election Conflict: Evidence from the Philippines, *The World Bank Economic Review*, Volume 34, Issue 3, October 2020, Pages 767–789, <https://doi.org/10.1093/wber/lhz014>.
- Cabrera, F. (2023). Many BARM teachers reluctant to serve in polls due to past trauma, hostilities. <https://www.rappler.com/philippines/mindanao/many-barm-teachers-reluctant-serve-elections-trauma-hostilities/>

- Clark, A., & James, T. S. (2021). Electoral administration and the problem of poll worker recruitment: Who volunteers, and why? *Public Policy and Administration*, 38(2), 188–208. <https://doi.org/10.1177/09520767211021203>
- Commission on Elections. (2023). *Resolution No. 10924: General guidelines and other related rules and regulations for the October 30, 2023 Barangay and Sangguniang Kabataan Elections (BSKE) and all succeeding BSKEs thereafter*. <https://comelec.gov.ph/?r=2023BSKE/Resolutions/res10924>
- COMELEC Resolution No. 10727. (2021). GENERAL INSTRUCTIONS FOR THE CONSTITUTION, COMPOSITION AND APPOINTMENT OF ELECTORAL BOARDS; THE PROCESS OF FINAL TESTING AND SEALING MACHINES; AND THE VOTING, COUNTING AND TRANSMISSION OF ELECTION RESULTS IN CONNECTION WITH THE 09 MAY 2022 NATIONAL AND LOCAL ELECTIONS. <https://comelec.gov.ph/?r=2022NLE/Resolutions/res10727>
- COMELEC Resolution No. 11076. (2024). GENERAL INSTRUCTIONS FOR THE ELECTORAL BOARDS ON THE PROCESS OF VOTING, COUNTING, & TRANSMISSION OF ELECTION RESULTS FOR THE 12 MAY 2025 NATIONAL, LOCAL, & BANGSAMORO PARLIAMENTARY ELECTIONS. <https://comelec.gov.ph/?r=2025NLE/Resolutions/res11076>
- Cambridge Dictionary. Meaning of difficulty in English. https://dictionary.cambridge.org/dictionary/english/difficulty?q=difficulties&fbclid=IwY2xjawJu6PFleHRuA2FlbQIxMAABHsFx53Xo1qpLERyi5WZZSvF9QtyhLIQ3sDi03JkHy4_deb8z1aJokaLbBUc6_aem_J1iSUiRwmb0Dzhov0SsMUA
- Catalino N. Mendoza, & Pelagia D.S. Bautista. (2022). Scenario-Based Training and Development Design among the Philippine Local Government Units. *Texas Journal of Philology, Culture and History*, 4, 8–24. Retrieved from <https://zienjournals.com/index.php/tjpch/article/view/1057>
- eLEKSYON.com (2021). A Quick Guide to Philippine Elections. <https://www.eleksyon.com/blog/a-quick-guide-to-philippine-elections.html> A Quick Guide to Philippine Elections. <https://www.eleksyon.com/blog/a-quick-guide-to-philippine-elections.html>
- EAPA-SA. (2022). The Downside of Implementing Outdated and Improper Company Policies <https://www.eapasa.co.za/the-downside-of-implementing-outdated-and-improper-company-policies/>
- Engetou, M. E. (2017). Impact of Insufficient Personnel on Organizational Performance. Facts and Details. (n.d.). Elections in the Philippines: Electoral system, irregularities and violence. https://factsanddetails.com/southeast-asia/Philippines/sub5_6f/entry-3903.html
- Fuentes, K. (2023). 8 poll workers face medical emergencies. *Sunstar file*. 8 Poll Workers Experience Medical Emergencies During Barangay and Sangguniang Kabataan Elections
- Financial Times. (2024). US polling places struggle to find workers after surge in threats. <https://www.ft.com/content/986d4e8a-52bb-4cad-914f-25791d6e536d>
- Indian Polity. (2023). Importance of Elections in Democracy: Features, Reasons & Process. Importance Of Elections In Democracy: Features, Reasons & Process - PWOnlyIAS
- Hassan, M. (2024). Reliability – Types, Examples and Guide. <https://researchmethod.net/reliability/>
- Hassan, M. (2024). Descriptive Research Design – Types, Methods and Examples. <https://researchmethod.net/descriptive-research-design/>
- Högström, John & Jerhov, Christian. (2023). *Statsvetenskaplig tidskrift · Årgång 125 · 2023 / 4*. 125. 887-915. <https://www.scribbr.com/statistics/mean/>
- James, T. S., Garnett, H. A., Asplund, E., & Champion, S. (2023). Election staff training: Tracing global patterns of institutionalisation. *South African Journal of International Affairs*, 30(3), 415–435. <https://doi.org/10.1080/10220461.2023.2269890>
- JoVE Statistics. (2023). 2.5: Percentage Frequency Distribution. <https://www.jove.com/science-education/v/12584/percentage-frequency-distribution/>
- Larrazabal, G. (2020). Understanding elections to make them credible and transparent. <https://mb.com.ph/2020/10/12/understanding-elections-to-make-them-credible-and-transparent/>
- Leppert, R. (2024). Key facts about U.S poll workers. <https://www.pewresearch.org/short-reads/2024/10/24/key-facts-about-us-poll-workers/>

- Martinez, A. (2024). How do elections work in the United States? A simple guide. <https://english.elpais.com/usa/elections/2024-08-21/how-do-elections-work-in-the-united-states-a-simple-guide.html>
- Mann, C. & Stein, R. M. (2019). The Impact of Polling Places on Voting. <https://electionlab.mit.edu/articles/impact-polling-places-voting>
- Muhammad Nur, Dedy Afriadi, Anggi FP, Muhammad Adib Alfarisi. (2024). Injustice in the Workload of the Voting Organizing Group (KPPS) Central Lampung During the 2024 Indonesian General Election. *Journal of International Crisis and Risk Communication Research*, 693–709. <https://doi.org/10.63278/jicrcr.vi.2456>
- Middleton, F. (2019). Reliability vs. Validity in Research | Difference, Types and Examples. <https://www.scribbr.com/methodology/reliability-vs-validity/>
- Malipot, M. (2024). Group pushes for tax-free, higher pay for poll workers. https://mb.com.ph/2024/10/8/tax-free-higher-pay-for-poll-workers?fbclid=IwY2xjawGSyIpleHRuA2FlbQIxMAABHbAgTgPXVIodv-kwS0UyFt9UQqFxFN-aUZxgkvJzPbzwUcCkZiF9EAILOvw_aem_zferWdzr8T-RM_sAY6UdsA
- Niati, D. R., Siregar, Z. M. E., & Prayoga, Y. (2021). The effect of training on work performance and career development: the role of motivation as intervening variable. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(2), 2385–2393.
- Ortega, B. & Rappard, A. (2024). As threats grow, funds for election security see a squeeze. <https://edition.cnn.com/2024/09/21/politics/election-security-funds-decline-threats-grow-invs/index.html>
- Poojary, R. (2024). Stratified Random Sampling: A Complete Guide with Definition, Method, and Examples. <https://www.entropik.io/blogs/stratified-random-sampling>
- Statistics Canada. (2021). Educational attainment of person. <https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=DEC&Id=85134>
- Stein, R. M., Mann, C., Stewart, C., Birenbaum, Z., Fung, A., Greenberg, J., Kawsar, F., Alberda, G., Alvarez, R. M., Atkeson, L., Beaulieu, E., Birkhead, N. A., Boehmke, F. J., Boston, J., Burden, B. C., Cantu, F., Cobb, R., Darmofal, D., Ellington, T. C., & Wronski, J. (2020). Waiting to vote in the 2016 presidential election: Evidence from a multi-county study. *Political Research Quarterly*, 73(2), 439–453. <https://doi.org/10.1177/1065912919832374>
- Schur, L., Ameri, M., & Adya, M. (2017). Disability, Voter Turnout, and Polling Place Accessibility. *Social Science Quarterly*, 98(5), 1374–1390.
- Sy, M. A. P. C., Malabuyoc, F. L. S., Sobrevilla, M. D. M., & Estember, R. D. (2021). A queuing theory approach to improve service quality of banking systems: A case study of a bank in Laguna, Philippines. In *Proceedings of the International Conference on Industrial Engineering and Operations Management* (pp. 2703–2714).
- Singh, S. (2023). What is Descriptive Research? Definition, Methods, Types and Examples. https://researcher.life/blog/article/what-is-descriptive-research-definition-methods-types-and-examples/#When_to_use_descriptive_research_design
- Saleem, F., Malik, M. I., & Qureshi, S. S. (2021). Work stress hampering employee performance during COVID-19: Is safety culture needed? *Frontiers in Psychology*, 12, Article 655839. <https://doi.org/10.3389/fpsyg.2021.655839>
- Toby S. James & Tyrone Jervier (2017): The cost of elections: the effects of public sector austerity on electoral integrity and voter engagement, *Public Money & Management*. DOI: 10.1080/09540962.2017.1351834
- Wickwund, D. & Kowalczyk, D., (2023). What is the Concept of Age? | Definition & Types. <https://study.com/academy/lesson/defining-age-with-different-perspectives-definitions-examples.html?msockid=3f19d43b7c556c3d2113c6327dc86dfe>

In the Context of Digital Transformation, the Inadequacy of Family-based Elderly Care, and the Supplementation of Community Functions

Shen Zhaolong

Faculty of Social work and Social Welfare
Huachiew Chalermprakiret University

Abstract

Against the backdrop of an aging population, the traditional family-based elder care function continues to weaken, facing multiple shortcomings such as insufficient caregivers, lack of professional skills, excessive caregiving burdens, and severe empty-nesting issues. Community-based elder care, as a key link between family and institutional elder care, can effectively compensate for the deficiencies of family-based elder care, providing basic care, professional nursing, and emotional support. Digital transformation presents a dual impact on the elder care system: on the one hand, it empowers community and home-based elder care through intelligent monitoring, telemedicine, and resource integration, improving service efficiency and accuracy; on the other hand, it triggers challenges such as the digital divide, the impact on traditional service models, and supply-demand imbalances. Ultimately, it is necessary to build a sustainable elder care model based on the family, supported by the community, and deeply empowered by digital technology. This study adopts document study, integrating a systematic literature review, comparative analysis, and secondary data sourced from China, Europe, and various international organizations. Since no primary data was collected, there are no ethical risks involved.

Keyword : Population Aging; Family-Based Elderly Care; Community-Based Elderly Care; Digital Transformation

1. Introduction

1.1 Population aging

Currently, population aging is a common challenge faced by most countries, but China's scale, speed, and depth of this issue are particularly prominent. Compared to the gradual aging process that took some developed countries decades or even centuries, China's entry into an aging society has been exceptionally rapid. In 2001, the proportion of China's population aged 65 and above exceeded 7%, marking my country's official entry into an aging society. Data from the Seventh National Population Census showed that China's elderly population aged 65 and above was nearly 191 million, accounting for 13.5%; by the end of 2024, this proportion will further climb to 15.64%. China's population aging is mainly characterized by four trends: large scale, rapid speed, obvious aging trend, and increasing degree of empty-nest population. Taking Henan Province, a populous province in China, as an example, in 1998, the proportion of the elderly population aged 65 and above in the province already exceeded 7% of the total population, which means that Henan Province entered the threshold of population aging earlier than the rest of the country (Yajing, 2025)

Population aging is typically accompanied by declining birth rates and increased life expectancy, leading to a relative decrease in the proportion of young people and a relative increase in the proportion of elderly people. Currently, the international community generally uses the following two criteria to determine whether a country (or region) has entered an aging society: first, the proportion of the population aged 65 and over exceeds 7% of the total population; second, the proportion of the population aged 60 and over reaches or exceeds 10% of the total population. Meeting either criterion indicates that the country (or region) has entered an aging society. The degree of aging is usually measured by the aging coefficient, which refers to the proportion of the elderly population to the total population. Since the definition of the elderly population varies among countries, this article refers to the 1956 definition, that is, people aged 65 and over are considered elderly; at the same time, according to the United Nations definition, when the aging coefficient reaches 7%, the country (or region) has entered an aging society.

Population aging is spreading globally, particularly in developed countries like the United States. Notably, in the US, rural areas are aging faster than urban areas, presenting unique challenges to healthy aging in rural areas. Understanding and addressing these challenges is crucial for ensuring

healthy aging and promoting health equity across all life stages and regions. As the global population ages rapidly, understanding the challenges faced by the elderly in rural areas is increasingly important for promoting healthy aging. Data shows that the number of people aged 65 and over in the United States increased from 35 million in 2000 (12.4% of the total population) to 54 million in 2022 (16.9% of the total population), a growth rate of 54%. Furthermore, although only 15% of the US population lives in "rural" areas, the proportion of the elderly living in rural areas is as high as 22%, a clearly disproportionate figure. The proportion of people aged 65 and over in rural areas is 17.5%, compared to 13.8% in urban areas. While both rural and urban areas in the United States face the challenge of population aging, the rate of aging in rural areas (measured by the number and proportion of people aged 65 and over) is significantly faster than in urban areas (Cohen & Greaney, 2022)

Population aging presents transformation challenges to the global economy, a trend that is almost inevitable in today's society. Therefore, deepening our understanding of macroeconomic mechanisms is a crucial step in laying the foundation for practical and feasible responses. The well-known refugee crisis and the growing resistance in parts of Central and Eastern Europe have further strengthened our resolve to develop recommendations based on reliable data. The International Monetary Fund (IMF) has published a dedicated issue of its journal, *Finance and Development*, to discuss issues related to population aging. Bloom and Canning (2006) point out that the current state of population aging is the result of a deviation from historical trends over the past century—a trend in which the total population and age structure have remained largely unchanged. The authors argue that this demographic "drastic change" has triggered a wave of "boom, bust, and echo," specifically referring to the emergence of the baby boomer generation, their declining fertility rates upon reaching adulthood, and the resulting echo effects. They suggest that the influence of a generation will gradually manifest itself in a wave-like pattern (Michnevich, 2016)

Despite the cyclical effects of population growth and overall population expansion, IMF contributors point out that the global total fertility rate has fallen from 5 in 1950 to approximately 2.5 in 2006, and is projected to decline further to 2 by 2050. Therefore, future birth rates in developing countries are not expected to maintain their current high levels (Michnevich, 2016).

However, they also note a significant decline in global infant mortality rates: the infant mortality rate in developing countries has fallen to one-third of its original level since 1950 (the original phrase "one-third of 180" is ambiguous and has been revised to a proportional expression to better reflect the original meaning), while the infant mortality rate in developed countries has fallen from 59 to 7. Simultaneously, global life expectancy has increased significantly, rising by 15 years since 1950, reaching 65 years in 2005.

Magnus (2009, 2010, 2013), Jensen (2013), and Kim (2010) generally agree on the current state of population aging, but they are cautious about whether aging will trigger an economic recession. Magnus argues that regions like Europe and Japan, undergoing a transition to low birth rates and low infant mortality rates, are home to numerous global companies. These companies, able to maintain stable operations thanks to revenue from emerging markets, are not expected to be significantly affected by the aging population trend. However, all the authors acknowledge that the doubling of the old-age dependency ratio is a problem that cannot be ignored, and its specific impact remains largely unclear. As Magnus (2010) states, "We don't really have any models to follow to predict the future because the aging population of the 21st century is unique" (p. 1).

1.2 Key aspects and shortcomings of family-based elder care

Grandparents are left in an "empty nest" situation due to a lack of time and energy for care from younger generations. While children are the primary caregivers for the elderly, their time and energy are often limited by work and family commitments, resulting in superficial care. In Ghana, children remain the main caregivers for elderly people living at home; however, many children lack the time to accompany and provide actual care due to work and family commitments. Even when they do offer support, it is often indirect, primarily monetary, failing to meet the core needs of the elderly for daily living and emotional companionship.

Family support exhibits significant urban-rural disparities and individual differences. Elderly people without children or with limited financial resources are more easily neglected. They are increasingly becoming marginalized in family-based elder care, lacking relatives for daily care and

struggling to obtain necessary material support. They rely on domestic workers, friends, or are entirely self-sufficient, making their home-based elder care extremely unsafe and insecure.

The elderly experience a decline in physical function, leading to varying degrees of physical dependence in their daily lives. People aged 65 and above generally face declining physical function and increasing health problems. Some are unable to independently complete basic daily activities such as washing clothes, lifting heavy objects, or walking for extended periods, and even require assistance to perform core daily activities such as washing, cooking, etc. They have extremely high physical needs for home care, but these needs are often difficult to meet adequately.

2. Research Methodology

This study is a qualitative research design focusing on comparative analysis and a systematic literature review to examine the evolving landscape of elderly care in the digital age. The methodological framework is divided into the following three phases:

3.1 Data Collection and Source Selection The research utilizes secondary data retrieved from reputable academic databases (including CNKI, Web of Science, and Google Scholar) and official government reports. The selection criteria focused on:

1. Timeframe: Literature published primarily between 2014 and 2024 to ensure the inclusion of recent digital advancements.
2. Keywords: Digital Transformation, Family-based Care, Community-based Care, Aging Population, and "Smart Caregiving."
3. Geographical Scope: A comparative focus on China (as the primary case) alongside developed regions in Europe and North America to provide a global perspective.

3.2 Comparative Analysis Framework To evaluate the "supplementation of community functions", the study analyzes the data through two comparative lenses:

1. Functional Comparison: Comparing the limitations of traditional family care (e.g., lack of professional skills) against the strengths of community-based digital services.
2. Regional Comparison: Identifying successful "Smart Aging" models in Europe to assess their applicability and challenges within the Chinese socio-economic context.

3.3 Theoretical Synthesis The study applies the "Theory of Digital Empowerment" and "Functional Substitution" as analytical frameworks. These theories are used to interpret how digital tools—such as smart sensing and telemedicine—act as a 'supplementary force' that bridges the gap between deteriorating family functions and institutional care requirements.

3. Documentary Study

3.1 Social Policy and Service

Basic elderly care services are a fundamental institutional arrangement for the state to address population aging, a core component of the government's social welfare and public service functions, and fall under the typical category of social welfare administration and public management (Li, 2024).

A crucial component of the social welfare system, and a core element of government public services and administrative provision, these services are managed in a coordinated manner by administrative departments such as civil affairs, health, human resources and social security, and finance. These services are characterized by their universality, basic nature, and safety net nature. Under the leadership of the Communist Party of China, China's basic elderly care services have developed rapidly, not only expanding in content but also continuously enhancing in fairness and accessibility (CPC Central Committee & State Council, 2023). The supply of basic elderly care services is government-led, while simultaneously encouraging and guiding enterprises, social organizations, and individuals to actively participate, forming a multi-stakeholder supply model (Zuo, 2024). This includes services for the extremely poor elderly, subsidies for elderly care services for the economically disadvantaged, nursing subsidies for the disabled elderly, care services, high-age allowances, basic living care, basic health management, family doctor contracts, emergency rescue, and home visits (Yiwen, 2023).

In Europe, welfare state care policies utilize four main tools: (1) Monetary and in-kind benefits, such as cash subsidies to care providers in the UK; subsidies for care recipients in the German, French, and Austrian models; tax breaks, social security contribution reductions, and pension points for caregivers. (2) Employment-related policies, such as paid leave, flexible working hours, reduced working hours, job interruption, job retention during leave, and employment protection. (3) Public services, including home care assistants, meal delivery, day care in public nursing homes, and nursing homes. (4) Market-driven initiatives, such as subsidies for private care agencies and home care workers, to encourage the market to provide care services (Esping-Andersen, 1990).

3.2 Specific Manifestations of Inadequate Family-Based Elderly Care Functions

Under the multiple impacts of modernization, urbanization, and demographic transition, the traditional family-based elder care function continues to weaken, making it increasingly difficult to shoulder the heavy responsibility of caring for the elderly, especially the frail, disabled, and cognitively impaired (Aboderin, 2004). As family structures shift towards smaller, nuclear families, traditional extended families are gradually disintegrating, the number of children is decreasing, and the human support for family-based elder care is weakening, making it difficult to provide stable and continuous daily care (Long, 2022).

Simultaneously, urbanization and labor migration have exacerbated the expansion of empty-nest and single-living elderly, resulting in a severe shortage of on-site family care and emotional support. Ordinary families generally lack professional care capabilities such as medical care, rehabilitation training, and emergency response, failing to meet the rigid care needs of the elderly. Family members face triple constraints of time, energy, and finances, making long-term care unsustainable due to the excessive burden of care (Zhu & Lei, 2025).

Furthermore, the lack of institutional support for family care, such as care subsidies and professional training, coupled with poor accessibility and availability of social services, further exacerbates the predicament of family care. This results in significant gaps in the family's provision of services in areas such as daily living care, medical care, and emotional support, making the traditional "family-run" elder care model unsustainable (Zuo, 2024).

More importantly, the safety net function of family-based elder care is weakening, and it is no longer the sole and reliable source of old-age security. Coupled with the fading of intergenerational family solidarity, family care for the elderly has shifted from unconditional obligation to conditional fulfillment. Relying solely on internal family resources is no longer sufficient to meet care needs, necessitating external policy support (Long, 2022).

The time and opportunity costs of family care have increased significantly, making it difficult for families to absorb the costs alone. The high concentration of care responsibility on women's shoulders under gender roles severely squeezes women's employment and income security, rendering the family-based care model unsustainable in the long term. Finally, this has led to the family transforming from the sole provider of elder care into one link in a diversified, mixed supply chain, resulting in the loss of the traditional family-based elder care function (Yu, 2024).

3.3 Functional Positioning and Existing Foundation of Community-Based Elderly Care

Community-based elderly care has a clear functional positioning. It serves as an intermediary link between home-based and institutional elderly care, connecting the government, the market, social organizations, and the elderly. Community-based elderly care plays a multi-stakeholder integrative role, promoting collaborative supply from various stakeholders at the grassroots level and resolving the fragmentation of elderly care services. Simultaneously, it ensures policy implementation, service delivery, feedback on elderly care needs, and builds trust among the elderly (Izuhara et al., 2025).

Community-based elderly care not only provides accessible, affordable, and convenient basic services such as day care, meal assistance, and cleaning assistance, supporting the elderly in aging in their local area and creating a 15-minute elderly care service circle, but also provides crucial support and care services to special elderly groups such as the very elderly, those living alone, and those in empty nests (Li et al., 2024).

While balancing welfare costs and service accessibility, community-based elderly care ensures the elderly's autonomy in life and sense of community belonging, taking into account both professional care and emotional needs, and optimizing the allocation of care responsibilities among

the state, market, family, and community. Furthermore, the development of community-based elderly care has a solid existing foundation (Yiwen, 2023).

In China, the government has included home-based and community-based elderly care in the key aspects of the basic elderly care service system construction, promoting relevant reform pilots and forming stable policy support. Currently, a facility network primarily composed of community-based elderly care service stations and day care centers has been established, exploring mature models such as government-society cooperation and government-enterprise cooperation. A stable service force has been formed, mainly composed of community neighborhood committees and social organizations. Furthermore, communities are close to the daily lives of the elderly, offering high service accessibility, trust levels, and lower costs, thus meeting the widespread preference of the elderly for home-based and community-based elderly care. This demand is inelastic and continues to grow (Zhang, 2025).

In European welfare states, governments generally prioritize community-based home care as a long-term care system, establishing stable policy guidance and standardized services, and massively promoting the transfer of care resources to communities and families (Ilinca et al., 2015).

3.4 Pathways for Digitally Empowering Community-Based Elderly Care to Supplement Family-Based Elderly Care

Digital transformation is a key path to addressing population aging and optimizing the supply structure of elderly care services. It profoundly reshapes the operational logic and implementation model of community-based and home-based elderly care from multiple levels, including service supply, risk prevention and control, health management, resource allocation, and governance effectiveness. Digital transformation drives the transformation of traditional elderly care services towards precision, intelligence, efficiency, and inclusiveness, providing crucial support for elderly care (Pan & Hu, 2025).

Digital transformation plays a crucial role at the level of the elderly and their families. Leveraging smart sensing devices, remote care systems, and emergency response mechanisms, digital transformation builds a home safety network, effectively reducing risks such as falls, getting lost, and home accidents for the elderly. Through services like home health monitoring, remote diagnosis and treatment, chronic disease management, and medication reminders, health interventions are brought forward, and the accessibility of medical services is improved. With the help of online service platforms, daily care services such as meal assistance, bathing assistance, cleaning assistance, and medical assistance can be provided on demand, significantly improving the convenience and accessibility of elderly care services, alleviating the burden of family care, and improving the quality of life and well-being of the elderly (Talal et al., 2025).

At the level of community service providers, digital transformation is driving the shift of community-based elderly care services towards networked and platform-based operations. It achieves closed-loop management of the entire process, from demand collection and service dispatch to process monitoring and effectiveness evaluation, effectively improving service response efficiency and standardization. Through data analysis, the needs of the elderly can be accurately identified and categorized, promoting precise matching of service resources and optimizing the allocation efficiency of community-based elderly care service resources. Simultaneously, relying on smart community platforms, diverse resources such as medical care, nursing, cultural and recreational activities, and social work are effectively integrated, further enriching the supply of elderly care services (Liu & Liu, 2025).

Digital transformation is not only a technological support for elderly care services, but also a systemic restructuring of the elderly care service system. It provides long-term support and feasible pathways for improving the home-based and community-based elderly care service network, enhancing the quality of elderly care services, and addressing the challenges of deep aging (Rogelj et al., 2021) .

3.5 The Impact of Digital Transformation on Practices in China

Against the backdrop of China's aging population and existing elderly care system, digital technology and digital literacy have become key variables reshaping the supply and demand relationship of community-based home care services. Empirical research based on the 2020 China

Longitudinal Study of Aging (CLASS 2020) shows that digital transformation as a whole has a significant inhibitory effect on the use of community-based home care services. Specifically, the higher the level of digital transformation, the lower the dependence of the elderly on traditional community-based home care services (Liu & Liu, 2025).

From a practical perspective, digital transformation has a dual impact on the development of both community-based and home-based elderly care. On the one hand, it enhances the convenience and autonomy of home-based care, promoting its transformation towards smart and personalized services. On the other hand, it impacts traditional community-based elderly care services, leading to a shrinking demand for low-tech, easily replaceable basic services, exposing problems such as supply-demand mismatch and insufficient online-offline integration in community-based elderly care services. Simultaneously, the digital divide within the elderly population means that elderly people with low digital literacy still face service accessibility barriers, further exacerbating the unequal access to elderly care services (Zhao & Xing, 2024) .

3.6 The Impact of Digital Transformation on Practices in Europe

Against the backdrop of a rapidly aging population and continuously rising demand for long-term care in the European Union, digital transformation centered on assisted living environments (AAL), telemedicine, the Internet of Things and cyber-physical systems, and smart social infrastructure is having a systemic and structural impact on European community-based and home-based elderly care models. It has become a key support for driving changes in the elderly care service system, improving the independent living abilities of the elderly, and ensuring the sustainability of public services (European Commission, 2023).

Digital transformation significantly extends the independent living period of the elderly in their community and home environments. Through smart home sensing, remote health monitoring, and emergency response, it effectively reduces the risks of falls, disability, loneliness, and accidents, slows functional decline and the need for higher care levels, and postpones or reduces the need for admission to nursing homes. Remote care and smart environmental technologies enable real-time tracking of health status, chronic disease management, and proactive intervention, promoting a shift in medical and care services from passive treatment to proactive prevention, improving the quality of life and autonomy of decision-making for the elderly. Simultaneously, digital transformation helps bridge the digital divide among the elderly, strengthens social participation, reduces age discrimination and social exclusion, aligning with the EU's initiatives for the protection of the rights of the elderly and healthy aging (Armeni et al., 2026) .

At the level of public governance and sustainability, digital transformation provides European local governments with data-driven tools for facility planning, capacity building, financing, and supervision, alleviating fiscal pressure and human resource shortages. Digital transformation promotes the establishment of cross-departmental and cross-regional collaborative governance mechanisms, addressing issues such as service fragmentation, isolated tools, and inconsistent governance perspectives. Relying on innovative procurement, results-oriented financing, and value-based care models, it improves the efficiency of public fund utilization, enhances the sustainability and inclusiveness of the long-term care system, and provides institutional and technological guarantees for the EU to build an age-friendly society (European Commission, 2023) .

4. Conclusion

Against the backdrop of deepening global population aging, traditional family-based elderly care is experiencing persistent functional weakening and unsustainable dilemmas. Driven by modernization, urbanization and demographic transition, shrinking family structures, heavy care burdens, insufficient professional nursing capacity, and widespread empty-nest phenomena have jointly undermined the capability of family care to independently support elderly happiness. As a critical bridge between home and institutional care, community-based elderly care effectively compensates for such deficiencies by providing accessible, inclusive services covering daily care, professional nursing, emotional support and emergency assistance, thus enabling elderly people to age in place.

Digital transformation exerts a dual impact on the elderly care system. It empowers service integration, intelligent monitoring, precise resource allocation and efficient closed-loop delivery, upgrading service quality and fostering the silver economy. Meanwhile, it introduces challenges including the digital divide, disrupted traditional services and supply-demand misalignment, which hinder equitable access for vulnerable groups.

The study concludes that to address the challenges of a long-term aging population and achieve inclusive and high-quality elderly care services, a sustainable elderly care model must be family-centered, community-based, and empowered by digital technologies. Bridging the digital divide among the elderly requires coordinated efforts from multiple stakeholders. On one hand, comprehensive age-friendly upgrades should be implemented for hardware and software across mobile devices, government affairs, medical care and elderly care services, with streamlined interfaces, sustained offline manual service windows, and improved basic supply of internet and smart devices in rural areas. On the other hand, a regular digital tutoring and support system shall be established relying on communities, families and volunteers. Meanwhile, popularization of anti-fraud knowledge should be intensified to ease seniors' concerns about digital usage. By balancing digital empowerment and human-centered safeguards, an inclusive smart elderly care ecosystem can be built where digital technologies accommodate the physical, cognitive and practical living needs of older adults.

4.1 Limitations

This study is limited to a literature review and secondary data, lacking primary empirical evidence. The analysis primarily focuses on China, Europe, and the United States, limiting its cross-regional applicability. Digital transformation is mainly discussed at a macro level, with insufficient attention paid to the digital divide, usability barriers, cost, and privacy risks. The proposed care model remains conceptual, lacking detailed implementation mechanisms and evaluation indicators.

4.2 Future Research

The findings support theories of welfare diversification and active aging, emphasizing collaborative care among families, communities, and digital technologies. In practice, the study calls for alleviating the burden of family care, developing community care networks, and promoting age-friendly digital transformation. At the policy level, building an integrated system based on the family, supported by the community, and empowered by digital transformation is crucial for achieving sustainable and inclusive age care.

References

- Aboagye E, Agyemang O S, Tjerbo T. (2013). Elderly demand for family-based care and support: Evidence from a social intervention strategy[J]. *Global Journal of Health Science*, 6(2): 94.
- Aboderin, I. (2004). Modernisation and ageing theory revisited: current explanations of recent developing world and historical Western shifts in material family support for older people. *Ageing & Society*, 24(1), 29-50.
- Armeni, P., Polat, I., De Rossi, L. M., Diaferia, L., De Padova, S., Gatti, A., & Meregalli, S. (2026). Promoting healthy aging in a digital world: leveraging technology for enhanced elderly care and wellbeing. *Frontiers in Aging*, 7, 1687784.
- Cohen S A, Greaney M L. Aging in rural communities (2023). *Current epidemiology reports*, 10(1): 1-16.
- CPC Central Committee & State Council. (2023). Opinions on Promoting the Construction of the Basic Elderly Care Service System (Document No. 42 [2022])
- Daly M. (2002). Care as a good for social policy[J]. *Journal of social policy*, 31(2): 251-270.
- European Commission. (2022). European Care Strategy. Brussels: European Commission.
- European Commission. (2023). Demographic change in Europe: A toolbox for action. Publications Office of the EU.
- Jensen, B., 2013. Population aging and economic recession: A European perspective. *European Journal of Population Economics*, 29(3), pp.312–338.
- Kim, S., 2010. Demographic change and macroeconomic resilience: Evidence from aging East Asian economies. *Journal of Asian Economics*, 21(5), pp.489–50

- Ilinca, S., Leichsenring, K., & Rodrigues, R. (2015). From care in homes to care at home: European experiences with (de) institutionalisation in long-term care. *Policy Brief*, 12, 2015.
- Izuhara, M., West, K., Hudson, J., Felstead, A., Arrigoitia, M. F., & Scanlon, K. (2025). Cohousing and the role of intermediaries in later life transitions. *Ageing & Society*, 45(7), 1306-1326.
- Magnus G. The age of aging: How demographics are changing the global economy and our world (2012). John Wiley & Sons.
- Magnus, G., (2010). Demographics, Destiny and Asset Markets. UBS Investment Bank.
- Magnus, G., (2013). The Age of Aging: How Demographics are Reshaping the Global Economy. Revised ed. John Wiley & Sons.
- Michnevič K. (2016). The effects of ageing on household consumption in Central and Eastern Europe[J]. *Journal of international scientific publications: economy & business*, 10: 273-287.
- OECD. (2021). Health at a Glance: Europe 2021. Paris: OECD Publishing.
- Rogelj V, Salaj A T, Bogataj D. Digital transformation of community health and social services for ageing cohorts (2021). *IFAC-PapersOnLine*, 54(13): 756-761.
- Schwarz, J. E. (1992). The Three Worlds of Welfare Capitalism. By Gosta Esping-Andersen. Princeton: Princeton University Press, 1990. 248p. \$34.50. *American Political Science Review*, 86(1), 264-266.
- Xia X, Zhu M. (2025). The impact of digital literacy on older adults' utilization of community-based home care services: a cross-sectional study[J]. *BMC Health Services Research*, 25(1): 1367.
- Zhao Y, Huang Y. (2021). The mobility of the elderly and family-based care: A case study of Chinese migrant (grand) parents[M]//Migration to and from welfare states: Lived experiences of the welfare-migration nexus in a globalised world. Cham: Springer International Publishing, pp. 15-32.
- 冯雅静.河南省人口老龄化对产业结构升级的影响研究[D].中共吉林省委党校(吉林省行政学院), 2025. DOI:10.27474/d.cnki.gzjld.2025.000003.
- 管兵,林笑.治理情境与政策选择:政府购买居家养老服务的地方差异性路径研究[J].公共行政评论, 2026, 19(01):141-159+199.
- 焦奕文.新时代完善中国社区居家养老服务体系研究[D].吉林大学, 2023. DOI:10.27162/d.cnki.gjlin.2023.007616.
- 李静. (2024). 中国式现代化进程中的基本养老服务制度:生发逻辑、概念厘清与体系建构. *社会保障评论*, 8(06), 127-142.
- 梁政,刘颖,王美娇.人工智能赋能智慧居家养老服务模式的SWOT分析[J].中国农村卫生事业管理, 2026, 46(01):66-71. DOI:10.19955/j.cnki.1005-5916.2026.01.011.
- 龙玉其.(2022).家庭视角下我国养老保障政策的反思与重塑. *社会保障评论*, 6(06), 130-143.
- 潘小庆.养老保险政策缴费率对企业缴费行为的影响研究[D].中南财经政法大学, 2024. DOI:10.27660/d.cnki.gzczu.2024.000049.
- 王羽.我国基本养老服务整体性供给研究[D].中共中央党校(国家行政学院), 2024. DOI:10.27479/d.cnki.gzgcd.2024.000033.
- 左菁.(2024).基本养老服务制度的政策逻辑与内涵特征. *重庆社会科学*, (02), 82-100. <https://doi.org/10.19631/j.cnki.css.2024.002.007>.
- 张恒源.(2025).中国居家社区养老服务需求序列与精准供给. *社会保障评论*, 9(04), 139-157.
- 赵曼 & 邢怡青.(2024).人工智能赋能的居家社区养老服务发展及其生态系统优化策略研究. *社会保障研究*, (02), 16-25.

Structural Gravity of Lived Experience: Introducing "Social Work Integrated Phenomenological Analysis" (SW-IPA) as a Methodological Innovation for Researching Marginalized Transitions

Yingying Liu

Faculty of Social Welfare and Social Work, Hua Chiew Chalermprakiet University (HCU),
18/18 Debaratna Road, km. 18 (Bangna-Trad), Bangplee District, Samutprakarn, Thailand. 10540.
E-mail: lyingying327@gmail.com

Abstract

This paper addresses the institutional precarity and policy cliffs experienced by marginalized populations, specifically Thailand's "ART Generation" during welfare transitions driven by "deinstitutionalization" within a rigid bureaucratic polity. To overcome traditional Interpretative Phenomenological Analysis's (IPA) tendency to obscure macro-structural oppression, this study constructs "Social Work Integrated Phenomenological Analysis" (SW-IPA), a triadic hermeneutic framework linking micro-level embodied suffering to macro-level institutional critique. Methodologically, the analytical utility of this model is validated through a high-fidelity "Heuristic Hypothetical Vignette" built from existing welfare statutes, medical literature, and local anthropological research. The step-by-step coding simulation demonstrates SW-IPA's capacity to penetrate cultural stigma, decode institutional indifference, and reveal automated algorithmic exclusions within commodified labour markets shaped by digital biopolitics. This study offers a rigorous, structurally reflexive methodological protocol for critical qualitative research among vulnerable populations under transition, providing crucial insights for optimizing transitional welfare policies.

Keywords: Structural Gravity; Social Work Integrated Phenomenological Analysis (SW-IPA);
Deinstitutionalization; ART Generation; Digital Biopolitics

1. Introduction

In the contemporary landscape of social welfare in the Global South, Thailand is undergoing a significant paradigm shift driven by the "deinstitutionalization" policies of the Ministry of Social Development and Human Security (MSDHS). This policy shift is deeply embedded within Ratchakan, which is translated and defined as "the Thai bureaucratic polity, characterized by its rigid institutional framework and vertical power structures," ensuring international readers gain immediate comprehension without ambiguity. While framed within the progressive discourse of "reintegration into family and community" to dismantle the segregation of traditional institutional care, the implementation of this policy often results in systemic abandonment for highly vulnerable populations.

A critical group requiring academic and practitioner attention is Thailand's "ART Generation." This population is clearly defined in this context as "the first cohort of youth who survived and transitioned into adulthood through Anti-Retroviral Therapy (ART), but are now facing imminent displacement from the state welfare system upon reaching the threshold age of 18." Having contracted HIV through mother-to-child transmission and resided in state welfare institutions since childhood, this generation survived primarily due to free access to antiretroviral therapy under Thailand's Universal Coverage Scheme (UC scheme). However, upon reaching the legal adulthood threshold of 18 years, institutional protection ceases. Under rigid deinstitutionalization exit mechanisms, these youth must leave residential care, and all material stipends are discontinued.

Consequently, these young adults are displaced into a highly unstable "liminal space". Mechanically, they remain tethered to specialized public hospital networks to maintain "biomedical compliance" for their health monitoring. Structurally, however, their entry into the competitive labour market is impeded by institutionalized screening mechanisms driven by corporate efficiency, cost containment, and implicit health-risk assessments. In an environment lacking robust anti-discrimination legislation, these youth experience acute livelihood compression.

This embodied survival struggle poses an epistemological challenge to conventional qualitative research paradigms. Macro-level institutional analyses rely heavily on policy metrics and structural

causality, frequently reducing complex biographical trajectories to resource deficits and obscuring the lived human experience. Conversely, micro-level qualitative approaches, such as classical Interpretative Phenomenological Analysis (IPA), often focus extensively on individual psychological coping and subjective resilience (Smith, Flowers, & Larkin, 2009). By treating institutional exclusion and policy shifts as static background variables, this approach risks reducing systemic transitions to matters of individual maladaptation, implicitly adopting a "blaming the victim" stance.

In qualitative inquiry, classical IPA is recognized for its commitment to an idiographic approach and the double hermeneutic process, mapping how social actors interpret experiences within their immediate lifeworld (Smith et al., 2009). For Thailand's "ART Generation," this paradigm resists clinical reductionism by positioning marginalized individuals as primary interpreters of their own lived experiences, rather than viewing them solely through clinical indicators. Despite its utility in capturing micro-level subjectivities, traditional IPA exhibits significant epistemological limitations when applied to populations experiencing systemic exclusion. First, institutional oppression and market exclusions operate independently of an actor's capacity for rational scrutiny. Objective macro forces shape life trajectories even if transitioning youth cannot fully articulate these covert mechanisms. Second, traditional IPA risks conflating systemic hardship with resilience. Structural exclusion often manifests as chronic bodily fatigue or learned helplessness rather than explicit legal prohibitions. By focusing exclusively on individual psychological coping or religious rationalization (Newman, Roungrakhon, & Tepjan, 2012), traditional IPA risks privatizing institutional failures and welfare retrenchment, reframing systemic discrimination as a variation in personal resilience.

According to international standards, social work research is a practice-based discipline oriented toward social justice, human rights, and collective responsibility. Social work epistemology operates by documenting marginalized lifeworld while simultaneously exposing the structural power relations that produce those conditions. While conventional phenomenology primarily addresses *what* an experience is (Heidegger, 1962), critical social work inquiry interrogates *why* specific structural arrangements make certain oppressive realities possible. Therefore, in response to this methodological fragmentation, the discipline of social work requires an analytically engaged framework.

To address this research gap, it is necessary to transcend the long-standing theoretical impasse between micro-phenomenological depth and macro-structural blind spots in qualitative inquiry. This study addresses this gap by investigating Structural Gravity of Lived Experience: Introducing "Social Work Integrated Phenomenological Analysis" (SW-IPA), thereby providing a more comprehensive understanding of this research problem. By synthesizing structural reflexivity with idiographic depth, this methodological innovation offers profound significance for both qualitative methodology and social welfare practice. It not only equips researchers with a rigorous protocol to decode covert institutional and algorithmic oppressions but also provides crucial, structurally informed insights for policymakers to optimize transitional welfare mechanisms for highly vulnerable cohorts in the Global South.

2. Objectives

The objectives of this study are specified explicitly as follows:

1. To introduce "Social Work Integrated Phenomenological Analysis" (SW-IPA) and establish its core conceptual anchor, Structural Gravity, to resolve the theoretical impasse between phenomenological depth and structural blind spots in qualitative inquiry.
2. To operationalize and evaluate the analytical capacity and functionality of this triadic hermeneutic matrix prior to formal fieldwork by employing the Heuristic Vignette Method (Finch, 1987; Jenkins, Bloor, Fischer, Berney, & Neale, 2010) to construct a high-fidelity sandbox simulation model centred on a transitioning Thai youth.

3. Materials and Methods

To position "Structural Gravity" as a distinct conceptual framework, Table 1 delineates its analytical boundaries relative to established sociological paradigms, clarifying its specific utility for researching institutional transitions.

Table 1: Comparative Alignment Matrix of Structural Gravity versus Classical Paradigms

Theoretical Lens	Established Concept and Limitations	Explanatory Utility of "Structural Gravity"
Paul Farmer	Structural Violence Limitations: Tends to emphasize historical, continuous, and homogeneous deprivation within a single lifeworld; less equipped to capture sudden temporal disruptions caused by policy shifts.	Focuses on the interfaces of heterogeneous fields (e.g., state care vs. commercial markets), tracking localized, discontinuous institutional friction triggered by the sudden retrenchment of state protection (policy cliffs).
Pierre Bourdieu	Hysteresis Effect Limitations: Retains a micro-level focus on individual capacity, risking the attribution of transitional failures to personal capital deficits or the inertia of past habits.	Formulates an objective analysis that captures the asymmetric collision of incompatible institutional logics (biomedical compliance in public health vs. efficiency screening in commercial markets) on the individual.
Pierre Bourdieu	Symbolic Violence Limitations: Analytical endpoints frequently focus on individual "misrecognition" and passive subordination under dominant ideologies.	Systematically traces co-constitutive mechanisms: decoding how high-intensity subjective coping (e.g., localized religious merit-making) inadvertently absorbs systemic friction, thereby stabilizing oppressive macro-structures.

Table Note: This matrix establishes the conceptual boundaries of "Structural Gravity" by highlighting how it addresses the temporal, structural, and agentic limitations found in traditional theories during localized welfare transitions. Unlike paradigms that view structural oppression as continuous or purely ideological, Structural Gravity captures the acute administrative friction and automated exclusion mechanisms unique to contemporary institutional exits.

Structural Gravity operates through an interconnected network linking meso-level administrative routines with macro-level cultural discourses.

[Meso-Level: Ratchakan Culture] —> Rigid KPI Liquidation —> Abrupt Cessation of Care



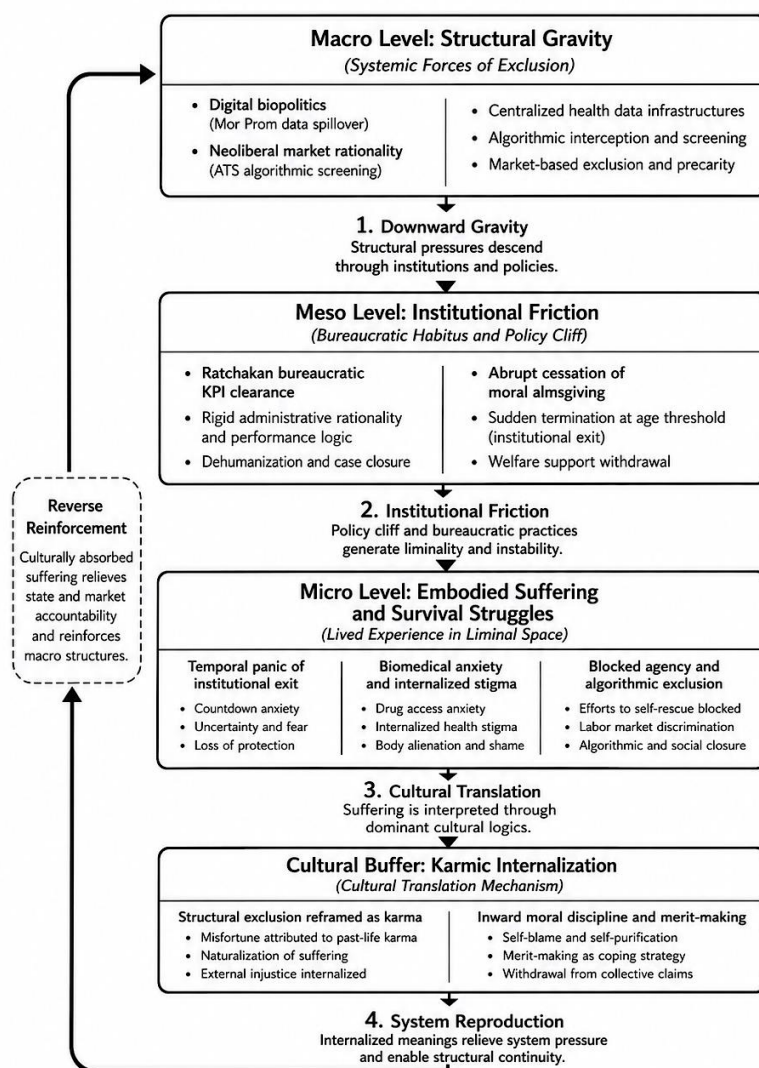
[Macro-Level: Karmic Rationalization] —> Inward Moral Attrib. —> Systemic Structural Buffer

Within state care facilities, administrative practices are often embedded in paternalistic dynamics, where statutory public welfare resources are reframed as expressions of institutional benevolence (*Metta*). Resource access is frequently contingent upon individual compliance and behavioural conformity, which restricts the development of autonomous social navigation skills. When macro deinstitutionalization mandates are translated into meso-level *Ratchakan* (state bureaucratic) performance metrics, administrative efficiency takes precedence over institutional care. To satisfy rigid case-closure quotas, the bureaucracy enforces an *Abrupt Cessation of Moral Almsgiving* precisely at the statutory threshold of 18, severed from the youth's actual transition readiness.

In the broader Thai social context, the downward pressures exerted by political-economic structures are often naturalized through localized cultural discourses. When transitioning youth encounter persistent barriers in the labour market, pervasive social narratives frequently invoke principles of karmic retribution (*Tam Kam* means reaping what one sowed in past lives) to explain contemporary hardship. This cultural framework encourages actors to adopt inward-looking self-examination and moral discipline. Consequently, systemic institutional dislocations are reframed as private moral destinies requiring individual resolution (such as allocating limited resources to temple merit-making). This cultural mechanism re-routes and absorbs systemic friction that would otherwise challenge state administrative and corporate employment structures.

To operationalize these conceptual connections into qualitative research protocols, the SW-IPA framework implements a triadic analytical matrix spanning micro, meso, and macro dimensions. Figure 1 illustrates the operational cycle of the SW-IPA model.

Figure 1. The Closed-Loop Structural Reproduction Model of SW-IPA



Note: SW-IPA (Social Work–Integrated Interpretative Phenomenological Analysis) links micro embodied suffering with meso institutional practices and macro structural forces in a closed-loop of reproduction.

Figure 1. The Closed-Loop Structural Reproduction Model of SW-IPA

Note: Source: Original elaboration by the author. SW-IPA (Social Work–Integrated Interpretative Phenomenological Analysis) links micro embodied suffering with meso institutional practices and macro structural forces in a closed-loop of reproduction.

This diagram delineates the multi-layered analytical pathways and the self-stabilizing cycle of structural reproduction within the transitional welfare framework. The model operates through four sequential dynamics:

1. **Downward Gravity:** Structural pressures from the *Macro Level* (driven by digital biopolitics, centralized data systems, and algorithmic screening) descend into administrative routines.
2. **Policy Cliff:** At the *Meso Level*, these macro mandates are translated into rigid *Ratchakan* bureaucratic habits and case-closure KPIs, abruptly terminating institutional support and compressing individual life trajectories.
3. **Embodied Suffering:** At the *Micro Level*, transitioning individuals experience acute temporal panic, bodily alienation, and blocked agency, managing their marginalized identity through strategic emotional labour and stigma concealment.

4. Cultural Translation and Reverse Reinforcement: Through a *Cultural Buffer*, individual suffering is translated via native karmic logic (*Kam*), reframing structural exclusion as private moral destiny and self-blame. This internalization absorbs systemic friction, relieves state and corporate market entities of accountability, and ultimately loops back to reinforce and reproduce the original macro structures of exclusion.

4. Results

To assess the functionality of this matrix prior to formal field deployment, a triadic hermeneutic coding simulation was executed. The analysis centred on a high-fidelity heuristic profile: Anan, an 18-year-old youth residing in a public welfare institution, who contracted HIV via vertical transmission and faced imminent discharge under current deinstitutionalization rules (Pun Panich, Gorbach, Viengkham, Phanuphak, & Detels, 2015; Taisuwan & Chotthanapund, 2025).

Stage 1: Phenomenological Suspension (First Hermeneutics). Phenomenological suspension (*epoche*) was applied to document the subject's embodied experiences and immediate coping mechanisms, deliberately withholding macro-structural classifications.

Simulated Text Input (Anan's First-Person Narrative): "Only three months left until I turn 18. The director patted my shoulder in the hallway and told me that starting tomorrow, I need to figure out how to pay for my own medication, and I must move out of the dormitory by the end of next month. I don't know where I'll sleep. I submitted five resumes, but every single one requires a medical certificate proving no infectious diseases. My hands shake when filling them out. If they find out I am 'that kind of person' (an HIV carrier), what will I do? Maybe this is just my destiny."

Coding Output (First-Order Themes): [Temporal Panic], [Biomedical Vulnerability], [Spatial Insecurity/Homelessness], [Stigma Internalization & Identity Concealment].

Stage 2: Institutional Deconstruction (Second Hermeneutics). First-order themes were positioned within meso-level institutional routines to evaluate how *Ratchakan* structures and paternalistic habits influenced compliance.

Simulated Text Input (Institutional Case Logbook Summary): "Anan has been an exceptionally obedient and respectful child since infancy, always performing the *Wai* to express gratitude to elders. We ensured his participation in temple activities on every Buddhist holiday, which fulfils institutional regulations and reflects our benevolence (*Metta*) toward him as merit-makers. However, as he is reaching 18, according to the latest deinstitutionalization (DI) indicators from MSDHS, his record must be closed in this month's administrative tables. This aligns with state regulations and *Ratchakan* duties. Our institutional care is complete, and he must now learn to navigate his own karmic trajectory (Coping with Karma)."

Analytical Interpretation: The subject's behavioural compliance and limited social navigation skills were produced not by inherent personality traits, but by sustained exposure to dependency-inducing institutional care. When macro deinstitutionalization mandates were converted into rigid bureaucratic indicators, administrative processing overrode transitional care, resulting in an abrupt cessation of support.

Coding Output (Second-Order Institutional Labels): [Paternalistic Welfare Cultivation], [Ratchakan Case-Closure Liquidation], [Meso-Level Cessation of Care].

Stage 3: Structural Synthesis (Third Hermeneutics). Micro-narratives and institutional logs were evaluated alongside macro-structural dynamics to analyse how contemporary digital practices transformed interpersonal market barriers into automated screening processes.

Simulated Text Input (Job-Seeking Narratives juxtaposed with Corporate ATS Documentation):

Source A (Transitional Youth Interview): "Over the last three months, I sent out more than 80 applications through my phone... Every time I click 'Agree to Digital Background Check' and submit, the system status updates to 'Application Terminated' or 'Not Aligned' within seconds. I cannot secure an interview with a human manager... It feels like an invisible digital wall."

Source B (Corporate Applicant Tracking System [ATS] Technical Documentation): "The platform integrates background risk-management modules to

optimize labour efficiency. It automatically flags profiles indicating high-frequency medical follow-ups or specific public health tracking facilities to reduce long-term human resource volatility..."

Analytical Interpretation: The "invisible digital wall" encountered by the applicant was operated as an expression of digital biopolitics within contemporary administrative systems. While state initiatives like the *Mor Prom* platform provided necessary digital health tracking and treatment integration for HIV management, these centralized data structures interfaced with commercial risk-assessment algorithms. Consequently, health metrics functioned as screening criteria within competitive labour markets, creating automated barriers to employment prior to face-to-face interaction.

Coding Output (Third-Order Macro Propositions): [Biopolitical Data Spillover], [Automated Algorithmic Exclusion], [Digital Pre-emption of Market Entry].

Simulation Synthesis: Asymmetric Structural Collisions. Integrating these three analytical stages reveals how systemic imbalances shape outcomes. To elaborate on this point, it is evident that "Social Work Integrated Phenomenological Analysis" (SW-IPA) establishes its core conceptual anchor, Structural Gravity, to resolve the theoretical impasse between phenomenological depth and structural blind spots in qualitative inquiry. The simulation demonstrates that transitional difficulties are less a function of personal resource deficits or individual maladaptation, and more an outcome of the asymmetric interface between institutional policy shifts and market screening mechanisms within the transitional environment.

Table 2: Mapping the Asymmetric Interface of Policy Cliffs and Market Barriers

Analytical Axis	Micro-Level Agency Responses	Meso-Macro Structural Mechanics	Structural Gravity Outcomes
Welfare Exit Phase	The individual attempts to acquire technical skills (e.g., electronic repair) and conceals health status to facilitate market entry.	State care structures terminate residential placement and material stipends based on age thresholds (Policy Cliff).	Immediate reduction of livelihood options, increasing the risk of housing and financial instability.
Labor Market Entry	The individual maintains high job-application volume and performs intensive emotional management during search processes.	Employment platforms mandate digitized health declarations and utilize automated screening algorithms (Market Barrier).	Systematic filtering of applicants with chronic conditions, leading to underemployment and skills depreciation.
Cultural Ideology	The individual seeks to resist social stigma but experiences distress from repeated rejections, eventually turning to localized religious practices (<i>Tam Boon</i>).	Dominant cultural discourses align with market concepts of individual accountability, associating hardship with personal karmic trajectories (Ideological Naturalization).	The individual internalizes structural barriers as personal destiny, shifting focus away from structural critiques and stabilizing the institutional status quo.

5. Discussion

The simulation results demonstrate how SW-IPA expands upon classical assumptions in qualitative inquiry by explicitly linking micro subjectivities to institutional routines and macro forces. To fully interpret the implications of these current simulated findings, the discussion must draw upon empirical research within the fields of transitional welfare and marginalized public health trajectories. Empirical studies focusing on Thailand's institutionalized HIV-infected adolescents transitioning to adulthood (e.g., Pun Panich, Gorbach, Viengkham, Phanuphak, & Detels, 2015) confirm that structural barriers and sudden institutional exits severely disrupt social adaptation, validating that the "policy cliff" simulated in Anan's case is a critical empirical reality rather than a mere theoretical construct.

Furthermore, empirical evidence regarding the employment and wages of people living with chronic health conditions (García-Gómez, Labeaga, & Oliva, 2014) corroborates that automated algorithmic screenings and health-risk exclusions operate as objective macro forces that systematically compress livelihood options prior to any human interaction. By anchoring the SW-IPA model within these empirical realities, we can interpret that individual survival struggles are heavily modulated by "Structural Gravity." Instead of viewing individual coping strategies, such as localized religious merit-making or spiritual rationalization (Newman, Roungrakphon, & Tepjan, 2012). Solely as signs of psychological resilience, empirical synthesis indicates that these localized cultural practices often inadvertently absorb systemic friction. Consequently, they relieve state bureaucracies and corporate entities of structural accountability, thereby stabilizing the oppressive institutional status quo.

To ensure human subject protection during actual field execution, three layers of safeguards are mandatory:

1. Multi-Layered De-identification Protocol: Beyond the standard use of pseudonyms for individual participants, social workers, and corporate entities, the names of specific care facilities and exact community geographic coordinates must be modified to prevent deductive identification within localized social networks.
2. Processual and Contextual Informed Consent: Consent must be treated as an ongoing process rather than a single event. The research team will re-verify verbal consent at critical transitional junctures, such as immediate post-discharge or following encounters with labour market screening processes.
3. Trauma-Informed Research Controls: If the interview process triggers acute psychological distress regarding institutional exit or market exclusion, data collection will be paused immediately. The research team has established formal referral pathways with local non-governmental organizations and public hospital psychological support units to provide immediate care if required.

These methodological controls ensure that while the framework penetrates macro algorithmic and political-economic exclusions, the safety of the vulnerable research participants remains primary. Future qualitative research can build on these observations by using SW-IPA to analyse other marginalized cohorts experiencing high-friction administrative exits in the Global South.

6. Conclusion

The "Social Work Integrated Phenomenological Analysis" (SW-IPA) framework incorporates the concept of Structural Gravity to expand upon traditional qualitative methodologies that risk individualizing structural failures. By applying this triadic hermeneutic model to the transition dynamics of Thailand's "ART Generation," this paper examined how state welfare retrenchment and digitized market screening mechanisms can interact to produce marginalization, and how traditional cultural narratives can inadvertently obscure these systemic dynamics. Methodologically, this framework offers a structured, transparent, and reflexive protocol for studying vulnerable populations navigating institutional transitions in the Global South.

At the policy level, these findings suggest that when agencies like the MSDHS implement deinstitutionalization strategies, the policy conclusions should be restructured into concrete, actionable mechanisms as follows: Extending the Welfare Age Threshold: It is recommended that the Ministry of Social Development and Human Security (MSDHS) extend the institutional care and welfare eligibility ceiling from 18 to 21 years old specifically for transitional youth with chronic health conditions (e.g., the ART Generation). This extension provides a necessary legislative buffer to directly mitigate the destabilizing impact of the "policy cliff." Furthermore, these empirical insights necessitate the development of robust regulatory frameworks to address algorithmic discrimination in employment, thereby mitigating the systemic pressures that compound marginalization. Future research should focus on implementing empirical trials of this protocol in diverse geographical and socio-political settings to optimize transitional welfare policies.

Acknowledgements

The author gratefully acknowledges the intellectual support of the Faculty of Social Welfare and Social Work at Hua Chiew Chalermprakiet University (HCU).

References

- Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge University Press.
- Farmer, P. (2004). An anthropology of structural violence. *Current Anthropology*, 45(3), 305–325.
- Finch, J. (1987). The vignette technique in survey research. *Sociology*, 21(1), 105–114.
- García-Gómez, P., Labeaga, J. M., & Oliva, J. (2014). Employment and wages of people living with HIV/AIDS (Working Paper No. 2012-043). UNU-MERIT.
- Heidegger, M. (1962). *Being and time* (J. Macquarrie & E. Robinson, Trans.). Harper & Row.
- Jenkins, N., Bloor, M., Fischer, J., Berney, L., & Neale, J. (2010). Vocabulary, stories and vignettes: Reflexivity and the use of qualitative methods in sensitive research. *Qualitative Research*, 10(2), 195–210.
- Newman, P. A., Rongprakhon, S., & Tepjan, S. (2012). Resilience among HIV/AIDS affected orphans in Thailand: The mediating role of Buddhist coping and social support. *Qualitative Health Research*, 22(6), 795–807.
- Pun Panich, W., Gorbach, P. M., Viengkham, N., Phanuphak, P., & Detels, R. (2015). Social adaptation and structural barriers among institutionalized HIV-infected adolescents transitioning to adulthood in Thailand. *AIDS Care*, 27(9), 1134–1142.
- Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. SAGE Publications.
- Taisuwan, P. K., & Chotthanapund, S. (2025). Rules, regulations, and relevant provisions regarding health screenings, HIV/AIDS testing, and sexually transmitted disease prevention among children and youth within the Thai justice process. *Disease Control Journal*, 51(2), 327–338.