

Enhancing service delivery through education and training: Office literacy and management practices in local governance



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ABSTRACT

This study investigates office literacy and management practices among barangay leaders. A mixed-method approach was employed involving 32 barangay officials selected through geographically representative sampling. The study utilized qualitative thematic analysis and descriptive quantitative analysis. The findings show that officials were overall moderately skilled in interpersonal competencies that support effective governance, with human relations skills receiving the highest rating. In contrast, technology skills received the lowest rating, highlighting a clear need for digital literacy training. The results also indicate a difference in technical skills across age groups, with younger officials demonstrating higher technical proficiency than older officials. However, officials across all age groups showed similar levels of competence in communication, numeracy, organization, records administration, and interpersonal relations. The study recommends implementing a comprehensive training program that emphasizes digital literacy and administrative competencies to strengthen the capabilities of barangay officials, promote effective governance, and improve public service delivery.

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1. Introduction

In the Philippines, the barangay serves as the fundamental political unit that functions at the frontline of governance by implementing local and national government programs. Its significance in community engagement and service delivery is recognized as barangay officials hold key responsibilities in maintaining peace and order, administering community programs, and ensuring the general welfare of constituents. The Local Government Code likewise emphasizes the crucial role of barangay officials, particularly the Barangay Chairperson, in facilitating governance initiatives tailored to community needs (Alamban et al., 2024).

Despite their vital role, concerns regarding competency and administrative capacity continue to be documented. Many barangay officials demonstrate only moderate proficiency in crucial skills such as communication and organizational competencies (Alamban et al., 2024). These

limitations contribute to governance challenges, particularly in areas like conflict management, planning, transparency, and effective constituent engagement. Difficulties in records management and interpersonal communication further hinder efficient service delivery at the grassroots level.

Local governance performance is increasingly aligned with global frameworks, including the Sustainable Development Goals (SDGs), which emphasize accountability, transparency, and community-centered leadership (Mohammed et al., 2023). Improving the administrative and communication competencies of barangay officeholders is necessary to support enhanced governance systems that contribute to sustainable development.

In addition, barangay operations often rely on the collaboration of community health workers (CHWs), who serve as critical links between the healthcare system and residents (Reyes et al., 2023). However, the effective functioning of CHWs relies heavily on efficient supervision and organizational support from barangay officials. Strengthening communication and documentation skills among officials may therefore lead to more effective community health outcomes (De Mesa et al., 2025).

Modern governance now demands strong digital competencies. Yet numerous barriers, ranging from outdated administrative systems to resistance to

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adopting new technologies, continue to impede digital transformation in local government settings (Alghatam, 2021). Mastery of data handling, cybersecurity, and records automation is increasingly necessary in enabling secure and efficient public service. Research emphasizes that local institutions capable of leveraging digital tools and big data are more likely to improve performance and decision-making processes (Jacoba et al., 2025).

Public administration also requires competent numeracy skills. Insufficient quantitative reasoning has been shown to affect financial planning, resource allocation, and fiscal accountability. Strengthening numeracy is vital for more transparent and evidence-based governance, particularly in budgeting and data-driven decision-making processes.

Despite gaps in technical skills, human-centered competencies remain a notable strength of barangay officials. Skills such as adaptability, critical thinking, leadership, and conflict resolution are essential in motivating communities, building trust, and ensuring inclusive participation (Muringa and Shava, 2024). Effective human relations can also heighten responsiveness to citizen needs and foster stronger engagement even during digital transition challenges (Tavares and da Cruz, 2020). Enhancing the quality of public communication, particularly in the digital space, can further influence community behavior and decision-making, supporting more effective governance outcomes (Santos et al., 2025). These findings indicate the need for continuous capacity-building programs to elevate barangay officials' competencies, particularly in digital literacy, administrative documentation, and numeracy, while strengthening their existing strengths in interpersonal governance. Addressing these competency gaps will not only improve administrative efficiency but also enhance citizen participation, economic outcomes, and community empowerment.

Accordingly, this study seeks to assess the level of office literacy and management practices among barangay officials in Balanga City, Bataan, and determine specific areas where professional development and intervention are most needed to support effective and sustainable local governance.

2. Methodology

This study utilized a mixed-method approach, integrating descriptive quantitative analysis and qualitative thematic analysis to more comprehensively assess office literacy and management practices. The quantitative component documented existing skill levels among barangay officials, while the qualitative component captured contextual insights on how these competencies are applied in governance settings. Barangays were selected using cluster sampling based on their geographical classification (flat, upland, coastal), ensuring representativeness across different environmental and socio-economic contexts. From

each selected barangay, purposive sampling was employed to identify officials who directly handle administrative and managerial operations, including captains, councilors, secretaries, and treasurers. The sample size of 32 officials was deemed acceptable for an exploratory investigation of skill gaps among key governance actors in Balanga City.

The study was conducted in Balanga City, Bataan, Philippines. Participating barangays were selected from flat, upland, and coastal areas within the city. This geographic diversity ensured the inclusion of barangays with different environmental and socioeconomic conditions, allowing the study to capture a broader understanding of the context in which local governance is carried out.

Participants were thirty-two barangay officials who were directly involved in administrative functions and local governance. These included Barangay Captains, Barangay Councilors, Barangay Secretaries, and Barangay Treasurers. Cluster sampling was used to determine barangay selection based on their geographical classification, while purposive sampling was then implemented to identify qualified officials from each barangay who could provide reliable and relevant information regarding office literacy and management practices. This sampling strategy aligns with suggested approaches for gathering data from informed governance stakeholders.

Data were collected using a researcher-developed survey questionnaire adapted from the instrument used by Inarda (2022), which evaluates office literacy among local government personnel. The questionnaire collected information about demographic characteristics such as age, highest educational attainment, geographical area of assignment, and designated position in the barangay. It also measured levels of competence in key domains, including technology skills, communication skills, numeracy skills, organizational ability, records management, and human relations skills. To complement the survey, semi-structured interviews were conducted with select participants to provide a deeper understanding of their management practices and the context in which their competencies are applied. The instrument used a 4-point Likert scale to measure six competency domains. Content validation was established through expert review by governance specialists, and internal consistency reliability from the original source instrument demonstrated acceptable coefficient levels. Adaptation modifications and contextual limitations of the instrument are further acknowledged in the Limitations section.

The researcher first sought approval from barangay officials prior to the survey administration. Respondents were informed about the objectives of the study and assured that all gathered information would be treated with strict confidentiality. Survey questionnaires were distributed personally and retrieved after completion, while interviews were scheduled based on participant availability. Upon collection, responses were checked for completeness

and accuracy and then organized for statistical and thematic analysis.

Both descriptive and inferential statistical procedures were employed. Mean scores and standard deviations were calculated to determine levels of competence in office literacy across the six domains. To assess whether significant differences existed in competency levels based on demographic variables, an Independent Samples t-test was used for educational attainment, and a One-Way ANOVA was performed to examine variations by age group, geographical classification, and position or designation within the barangay. Where ANOVA results indicated significant differences, a Tukey-Kramer post hoc test was applied to determine the specific sources of variation. Hypothesis testing adhered to the standard 0.05 level of significance as recommended in quantitative analysis procedures. Meanwhile, qualitative data from interviews underwent thematic analysis to identify common patterns and contextual insights, which further enhanced the interpretation of quantitative findings in relation to actual governance settings, consistent with practices in governance research.

3. Results and discussion

3.1. Office literacy competencies of barangay officials

The results reveal that barangay officials in Balanga City are generally moderately skilled in their office literacy competencies ($M = 3.02$, $SD = 0.40$). Among the different skill domains assessed, human relations skills obtained the highest mean score ($M = 3.43$, $SD = 0.41$), indicating a very skilled rating. This suggests that barangay officials possess strong interpersonal abilities essential for maintaining community trust and engaging with constituents effectively. Organizational ability also produced a favorable result ($M = 3.21$, $SD = 0.36$), suggesting functional competence in planning, coordinating, and implementing barangay programs. Communication skills, numeracy skills, and records management were found to be moderately skilled, with mean scores of 3.11 ($SD = 0.52$), 2.88 ($SD = 0.61$), and 2.89 ($SD = 0.59$), respectively. These competencies are necessary in implementing services that require clarity, accuracy, and documentation, areas where gaps may affect transparency and accountability.

Among all competencies, technology skills registered the lowest score ($M = 2.61$, $SD = 0.58$), also categorized as moderately skilled. This suggests that barangay officials experience more difficulty with digital tools and information systems, a concern consistent with previous studies arguing that public sector workers often lack digital readiness and technological exposure. Given the growing emphasis on e-governance and digital workflows, this weakness signals the need for targeted digital literacy training and modernization of barangay administrative practices.

3.2. Differences in competencies by age

The comparison of office literacy competencies based on age categories (young adults, middle-aged adults, and older adults) showed that only technology skills produced a significant difference, $F(31) = 5.85$, $p = .024$. Young barangay officials ($M = 3.09$, $SD = 0.25$) demonstrated significantly greater proficiency in technology use than both middle-aged ($M = 2.69$, $SD = 0.58$) and older officials ($M = 2.31$, $SD = 0.52$). This age-related disparity supports the idea that younger generations, sometimes referred to as “digital natives,” are more exposed to technology and thus more comfortable integrating digital systems into administrative tasks.

Communication skills, numeracy skills, organizational ability, records management, and human relations skills did not show significant differences across age groups ($p > .05$). This suggests that these competencies may develop more through experience and role expectations rather than age alone. However, the observed generational gap in digital literacy underscores the need for age-sensitive training programs to ensure that middle-aged and older officials remain capable of fulfilling their increasingly technology-dependent governance roles.

3.3. Differences in competencies by highest educational attainment

When grouped according to educational attainment, only technology skills yielded a significant difference, $t(30) = -2.06$, $p = .048$. Barangay officials with college degrees ($M = 2.73$, $SD = 0.60$) demonstrated stronger technology skills than those with only high school education ($M = 2.29$, $SD = 0.39$). This indicates that exposure to post-secondary education may provide better access to digital learning and technology-based administrative tools, a finding supported by the United Nations Development Program in 2023.

All other competencies showed no significant difference across educational groups ($p > .05$), suggesting that interpersonal and basic administrative skills may be learned through practical experience in local governance. These results recommend inclusive training programs that focus on improving technology-related competencies among less formally educated officials to promote more equitable governance performance.

3.4. Differences in competencies by geographical classification

No statistically significant differences were found in any of the skill domains when barangay officials were compared based on their geographical classification: flat areas, coastal areas, and upland areas (all $p > .05$). This indicates that geographic location does not substantially affect access to training or development of administrative

competencies among officials within Balanga City. Although slight variations in mean scores were observed, the lack of significance suggests that officials across different locations share similar workplace environments and governance expectations. This uniformity may be attributed to standardized mandates in barangay governance and shared administrative structure.

3.5. Differences in competencies by position/designation

When grouped by official designation, significant differences were found in technology skills, $F(31) = 6.28$, $p = .006$, and numeracy skills, $F(31) = 4.46$, $p = .020$. Barangay Secretaries ($M = 2.92$, $SD = 0.49$) and Treasurers ($M = 3.03$, $SD = 0.39$) showed stronger technology skills than Councilors ($M = 2.35$, $SD = 0.59$) and Captains ($M = 2.21$, $SD = 0.38$). This is expected, as secretaries and treasurers commonly utilize technology in documentation, financial systems, and records management.

Similarly, treasurers ($M = 3.42$, $SD = 0.41$) and captains ($M = 3.09$, $SD = 0.48$) had significantly stronger numeracy skills, reflecting their frequent involvement in fiscal decision-making and budget planning, key administrative responsibilities supported by literature emphasizing the importance of numeracy in public financial management.

Communication skills, organizational ability, records management, and human relations skills did not differ significantly by position ($p > .05$), indicating shared competence in public engagement and administrative oversight across barangay roles.

These significant differences imply that barangay administrative functions involving technology and financial computations are unevenly distributed among officials, suggesting the need for role-specific training, especially for older officials, high-school-educated officials, and non-finance positions.

3.6. Barangay officials' management practices: Qualitative insights

The qualitative findings from the focus group discussions provided further insight into how barangay officials apply their office literacy competencies in daily governance. Thematic analysis revealed four major areas of management practice: the frequency of planning reviews, community involvement in planning, effectiveness of planning meetings, and the use of data and evidence in decision-making. These themes corroborate and expand the quantitative results presented in the preceding sections.

Barangay officials described varying approaches to reviewing their strategic plans and priorities. Some regularly revisited their development plans to monitor progress, address emerging issues, and adjust objectives accordingly. These officials emphasized that frequent plan reviews are essential in guiding resource allocation and ensuring alignment with community needs. Others, however,

admitted that planning reviews occurred only when problems or external concerns arose due to competing responsibilities and time constraints. This inconsistency indicates disparities in planning culture among barangays and suggests a need for structured and institutionalized review mechanisms to reinforce consistency and strategic responsiveness. This insight is aligned with the finding that organizational skills remain moderate and that some officials could still benefit from training in systematic planning and governance processes.

Officials recognized the importance of engaging residents in barangay initiatives and decision-making. Some respondents described active collaboration with the community, noting that such involvement leads to a more accurate identification of concerns and fosters greater public support for local programs. This perspective supports survey results showing that human relations skills were the strongest competency among officials. However, several participants acknowledged challenges such as low community attendance during assemblies and limited willingness to participate in consultative activities. These issues reflect constraints in civic engagement and documentation practices, which connect to identified weaknesses in records management and technological capacity. Enhanced community involvement may therefore require improved communication strategies, digital communication tools, and sustained efforts to promote participatory governance.

Officials generally viewed planning meetings as useful venues for establishing priorities, clarifying tasks, and mobilizing participation from the barangay council. Respondents shared that meetings were often well-attended and productive when clear agendas were set beforehand. This observation supports the quantitative findings that demonstrated sufficient organizational ability across demographic groups. Nonetheless, difficulties in maintaining momentum during implementation stages were reported, as some programs could not be sustained due to logistical limitations and competing demands. These operational challenges relate to the moderate ratings in numeracy and technology skills, competencies needed to monitor implementation progress and evaluate outcomes in a structured manner.

The importance of evidence-based planning emerged strongly in the discussions. Respondents emphasized reliance on data coming from surveys, administrative records, and municipal reports to justify program decisions and resource allocation. Officials holding higher educational qualifications expressed greater familiarity with the use of data tools, which supports the quantitative result showing that college graduates demonstrated significantly stronger technology competencies. Although they acknowledged that data-informed decision-making enhances accountability, officials also recognized limitations in their current digital and analytical capabilities. These weaknesses further

reinforce the need for capacity building in data management, digital literacy, and recordkeeping systems to ensure that decisions continuously reflect accurate information.

The qualitative results reinforce the quantitative findings by demonstrating how strengths in interpersonal skills support community interaction, while technological and documentation challenges limit efficiency in planning and monitoring. These insights confirm that improving digital systems, community data recording, and structured implementation tracking are essential to strengthen governance performance.

3.7. Practical implications for training development

Based on the identified gaps, a targeted training model is recommended:

- a. Digital literacy workshops for older and less-educated officials,
- b. Financial analytics and budgeting training for councilors and secretaries,
- c. Strengthening of records management and data-based planning for all officials, and
- d. Leadership communication programs to maximize existing human-relations strengths.

Implementing these structured interventions can significantly elevate barangay governance performance.

4. Conclusions

This study assessed the office literacy and management practices of barangay officials in Balanga City, Bataan, focusing on competencies in technology, communication, numeracy, organizational ability, records management, and human relations. Findings showed that barangay officials are moderately skilled overall, with human relations skills emerging as their strongest competency. This strength supports effective constituent engagement and reflects the community-centered nature of barangay governance. Communication and organizational ability also demonstrated functional capacity, indicating that officials can perform core administrative and coordination responsibilities.

However, the results consistently identified technology skills as the weakest competency, revealing a clear digital skills gap in barangay governance. This was further supported by significant differences in results across age groups, educational levels, and job positions, where younger and college-educated officials, as well as secretaries and treasurers, were more proficient in digital tools. These findings align with literature emphasizing that older and less technologically exposed public servants often face challenges in adapting to digital transformation. Numeracy skills were adequate but displayed role-based disparities, especially in

positions requiring financial accountability, such as treasurers and captains.

The qualitative insights reinforced the quantitative findings by highlighting gaps in systematic planning reviews, limited civic participation in decision-making, difficulties sustaining program implementation, and inconsistent use of data and evidence in governance decisions. These operational challenges confirm that improvements in documentation systems, digital proficiency, and analytical capacity are necessary to strengthen barangay administration.

Overall, the study concludes that barangay governance is increasingly dependent on technology-enabled workflows and data-driven public service. Yet current competencies are insufficient to fully support modernization initiatives. Strategic, targeted, and sustained capacity-building programs must therefore be implemented—prioritizing digital literacy, financial numeracy, and evidence-based planning—while tailoring interventions according to age, education, and role-specific task requirements. Addressing these capability gaps will enhance transparency, accountability, service responsiveness, and citizen trust in grassroots governance.

This study involved only 32 barangay officials from one city, which limits the generalizability of the findings. Competency data were self-reported, which may introduce response bias. The cross-sectional design also does not reflect changes over time. The qualitative insights were drawn from a small number of participants and may not represent all barangay officials. Future research should include larger samples from multiple locations and use additional performance-based measures to validate results.

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Compliance with ethical standards

Ethical considerations

This study followed established ethical standards for research involving human participants. Informed consent was obtained from all barangay officials before data collection, and participation was

voluntary, with the option to withdraw at any time. Confidentiality and anonymity were ensured by excluding personal identifiers and reporting data only in an aggregated form.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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