CHAPTER 1

THE PROBLEM AND ITS SETTING

Introduction

The barangay, as the smallest unit of local government in the Philippines, plays a crucial role in community development, public safety, and service delivery. However, issues such as delayed reporting, lack of transparency, and limited citizen engagement often hinder effective governance at this level (Reyes, 2015; Transparency International, 2020; Abales et al., 2023, pp. 115-116 [1]). This study, titled "BarangayConnect: A Qualitative Study on Real-Time Reporting and Transparency in Barangay Tambo," explores the potential of a real-time reporting website system referred to as "BarangayConnect" to address these challenges in Barangay Tambo, a vibrant community in Paranaque City. Barangay Connect is a website platform designed to enable residents to report issues (e.g., infrastructure problems, health concerns, or security incidents) in real-time, while promoting transparency through accessible data sharing and feedback mechanisms.

This qualitative research aims to investigate the perceptions, experiences, and barriers related to implementing such a system. By employing methods like interviews and survey. The study seeks to uncover how real-time reporting can enhance transparency and foster trust between barangay officials and residents. As highlighted in the (Open Government Partnership, 2019 [2]). Philippines national action plan, which focuses on improving local governance through transparency initiatives, this research has the potential to inform policy recommendations for other barangays, promoting more accountable and participatory local governance in the Philippines.

This study is in line with the United Nations Sustainable Development Goals, especially SDG 16 (Peace, Justice, and Strong Institutions), as it aims to promote transparency, accountability, and citizen participation in barangay governance through the use of the BarangayConnect system. It also relates to SDG 9 (Industry, Innovation, and Infrastructure) by introducing a digital approach that helps improve the efficiency of local government processes. In addition, it supports SDG 11 (Sustainable Cities and Communities) by encouraging more inclusive and responsive governance within the community.

Theoretical Framework

This part explains the main ideas that support our study. We use two key theories to understand the problems and help with our research on Barangay Connect. The first theory is from Jürgen Habermas, called the Theory of Communicative Action (from 1984). In simple terms, it says that good communication is key for fair decisions in communities. People need to talk openly without any blocks. In our study, this helps explain why old reporting methods in Barangay Tambo cause problems, like people not getting information on time. BarangayConnect could fix this by letting residents share issues quickly and talk with officials, making things more open and fair.

The second idea comes from the Principles of Good Governance, based on work from the United Nations and used in the Philippines (like in the Open Government Partnership from 2019 [2.2]). This means things like being clear, accountable, and quick to respond in local government. It shows how tools like BarangayConnect can help close gaps, such as when people lack access to technology. This ties into our main problems, like delays in reporting, and supports our idea that better systems can build trust. Together, these theories guide our study. They help us look at interviews and other data to see how real-time reporting works in Barangay Tambo. This makes our research stronger and based on

proven ideas.

Conceptual Framework

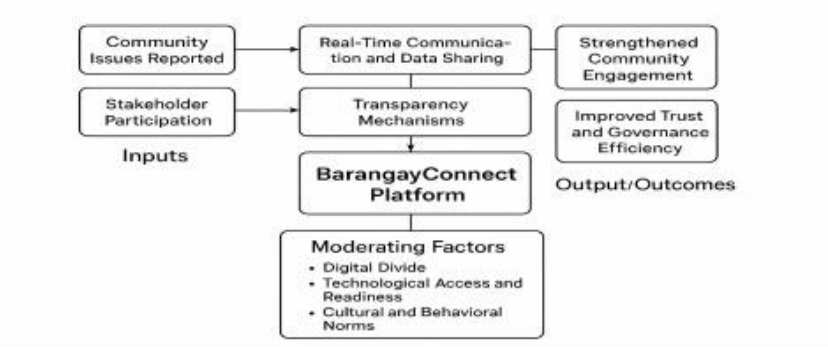
In this study, the conceptual framework shows how real-time reporting, transparency, and community engagement all connect through BarangayConnect, a digital tool that helps residents and barangay officials in Barangay Tambo communicate more effectively.

Drawing from Jürgen Habermas's Theory of Communicative Action from 1984 and the Principles of Good Governance outlined by the United Nations in 2019, the framework highlights that open communication is essential for strong, transparent, and inclusive governance. BarangayConnect sits at the heart of this, acting as a platform where people can report issues and share data in real time.

On one side, inputs include the everyday concerns from the community like problems with infrastructure or safety that residents report quickly. This setup encourages everyone to get involved, with both citizens and officials participating in the conversation.

As a result, the outcomes we expect are stronger community ties, greater trust between people and their local leaders, and overall better governance in the barangay. This framework essentially maps out how BarangayConnect can bridge gaps in communication and make local government more effective and inclusive in Barangay Tambo.

Figure 1:



This diagram lays out the links between real-time reporting, transparency, and community involvement via BarangayConnect, showing how community inputs flow through the system to create positive changes while dealing with potential obstacles.

Statement of the Problem

Despite the critical role of barangays as the smallest units of local government in the Philippines, persistent issues such as delayed reporting, lack of transparency, and limited citizen engagement continue to undermine effective governance and service delivery in communities like Barangay Tambo in Parañaque City (Reyes, 2015; Transparency International, 2020; Abales et al., 2023, pp. 115-116 [1.1]). These problems manifest in practical ways: residents often face significant delays in addressing urgent issues like infrastructure problems, health concerns, or security incidents, which can lead to worsened community conditions, eroded trust in officials, and reduced participation in local decision-making. For instance, the reliance on traditional reporting methods such as in-person meetings or manual forms exacerbates the digital divide, leaving many residents without timely access to information and feedback mechanisms, as noted in the Open Government Partnership, 2019 [2.1]). Philippines national action

plan.

This lack of real-time reporting and transparency not only perpetuates inefficiencies but also hinders the potential for inclusive governance, particularly in digital age where tools like BarangayConnect could provide solutions. BarangayConnect,a digital platform designed for real-time issue reporting and data sharing, aims to bridge these gaps by enabling residents to submit reports instantly and access updates on barangay actions. However, barriers such as technological access, user adoption challenges, and varying perceptions among stakeholders remain underexplored, potentially limiting its effectiveness.

To address this problem, this qualitative study poses the following research questions:

1. How do residents and barangay officials in Barangay Tambo perceive the barriers to real-time reporting and transparency in current governance practices?
2. What are the key challenges and opportunities associated with implementing Barangay Connect to enhance transparency and citizen engagement?
3. In what ways can a real-time reporting system like BarangayConnect improve trust and participation in Barangay Tambo?

Scope and Limitations of the Study

Scope:

This study focuses on one place: Barangay Tambo in Parañaque City. We look at how BarangayConnect, a digital tool for real-time reporting, works for transparency and community involvement. Our methods include interviews and focus groups with residents and officials. The research covers key ideas like reporting delays, trust in government, and how technology helps.

We aim to gather insights over three months to suggest improvements for local

governance.

ISO Alignment:

This study aligns with the **International Organization for Standardization (ISO 9001:2015 – Quality Management Systems)**, which supports the principles of efficiency, consistency, and accountability in local governance. Specifically, it emphasizes:

- **Quality Management:** Ensures that processes within BarangayConnect are systematic, reliable, and effective in addressing community concerns.
- **Efficiency and Consistency:** Promotes organized workflows and timely responses to resident reports for improved service delivery.
- **Continuous Improvement:** Encourages regular evaluation and enhancement of the BarangayConnect system to maintain high standards of governance.
- **Transparency and Accountability:** Strengthens citizen trust by ensuring that all reports and actions are properly documented and accessible for review.

Limitations:

There are some things this study can't do fully. First, it's only in Barangay Tambo, so results might not apply to other areas. Second, we have a small group of people (about 20-30 participants), which means we might miss wider views. Third, as a qualitative study, it relies on people's opinions, which can be subjective and not exact like numbers. Also, time limits (like finishing in a semester) might stop us from seeing long-term effects. Lastly, issues like the the digital divide could affect our findings if not everyone has access to technology.

Significance of the Study

This study on BarangayConnect is important because it can help make local governance better in Barangay Tambo and other places. Here's how:

- For residents: People in Barangay Tambo can learn how real-time reporting makes it easier to fix problems, like quick fixes for broken roads or health issues. This builds trust and lets them get more involved in their community.
- For residents: People in Barangay Tambo can learn how real-time reporting makes it easier to fix problems, like quick fixes for broken roads or health issues. This builds trust and lets them get more involved in their community.
- For barangay officials: It gives officials useful ideas on using tools like Barangay Connect to work faster and be more open. This can save time and resources, making their jobs easier and helping them serve people better.
- For policymakers: The findings can guide government leaders in the Philippines to create better rules for digital tools in other barangays. For example, it might show how to handle the digital divide, leading to fairer systems nationwide.

For future research: Other students or researchers can use this study as a starting point. It adds to knowledge on transparency and technology, encouraging more studies on local governance.

Definition of Terms

- **BarangayConnect** – A website platform designed to allow residents of Barangay Tambo to report issues such as infrastructure problems, health concerns, or security incidents in real time, while promoting transparency and accountability between citizens and officials.
- **Real-Time Reporting** – The immediate sharing and recording of community issues as they happen, allowing barangay officials to respond quickly and efficiently.

- **Transparency** – The openness and accessibility of barangay information, ensuring that residents can monitor actions, decisions, and updates from their local officials.
- **Community Engagement** – The active involvement of residents in barangay activities and decision-making through participation in reporting and communication processes.
- **Good Governance** – The practice of being transparent, accountable, and responsive in public service to ensure fairness, efficiency, and trust in local governance.
- Theory of Communicative Action – A concept by Jürgen Habermas (1984) emphasizing that open, honest, and equal communication leads to better understanding and fair decision-making within a community.
- **Barangay Tambo** – A barangay located in Parañaque City that serves as the setting of this study and the pilot area for the BarangayConnect system.
- **Digital Divide** – The gap between individuals who have access to digital technology and those who do not, which can affect participation and the effectiveness of BarangayConnect.
- **Transparency Initiative** – An effort or program that aims to make government processes more open and accessible to the public, as highlighted in the Open Government Partnership (2019).
- **Local Governance** – The management of community affairs at the barangay level, focusing on the delivery of services, transparency, and citizen participation.

CHAPTER 2

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents the review of related literature and studies that support the research entitled *"BarangayConnect: A Qualitative Study on Real-Time Reporting and Transparency in Barangay Tambo."* It discusses various concepts, theories, and prior research that relate to digital governance, real-time reporting systems, transparency, and citizen participation at the local level.

Digitalizing Governance: A Transformation on the Processes of One Community in the Philippines

A study by Dela Cruz et al. (2022) titled "Digitalizing Governance: A Transformation on the Processes of One Community in the Philippines" examined the shift of Barangay Trinidad's administrative functions from manual operations to a digital system through the development of the Electronic Barangay Information Management System (E-BIMS). Using the Systems Development Life Cycle (SDLC) approach, the researchers identified common issues such as slow data retrieval and inefficient record management. The implementation of E-BIMS automated key processes like resident profiling and certificate issuance, resulting in faster transactions, organized records, and improved transparency in governance.

This study supports the present research on BarangayConnect, as both aim to enhance efficiency, transparency, and citizen engagement in barangay operations through digital transformation. It reinforces the idea that digital systems can significantly improve public service delivery and strengthen trust between citizens and local officials.

WebYu: A Barangay Yuson Web-based Information Management System Initiatives

In the study “WebYu: A Barangay Yuson Web-based Information Management System Initiatives” (Santos et al., 2023), the researchers developed WebYu, a web-based information management system designed to address inefficiencies in barangay operations in Barangay Yuson, Nueva Ecija. Utilizing the Scrum methodology and

evaluated through ISO 25010 and the Technology Acceptance Model (TAM), the system demonstrated excellent technical performance and high user acceptance. The results showed faster processing times and fewer documentation errors, emphasizing improved efficiency, usability, and transparency in local governance.

This study aligns closely with BarangayConnect, as both aim to enhance barangay service delivery and accountability through digital platforms. WebYu’s success underscores the potential of web-based systems to modernize administrative functions and strengthen community trust objectives that BarangayConnect similarly seeks to achieve in Barangay Tambo.

Are We Inclusive? Accessibility Challenges in Philippine E-Government Websites

The study “Are We Inclusive? Accessibility Challenges in Philippine E-Government Websites” (De Vera & Cruz, 2022) examined the accessibility and usability of Philippine government websites using the Web Content Accessibility Guidelines (WCAG) 2.0. Findings revealed that while many websites met basic accessibility standards, they lacked consistent design, mobile responsiveness, and user-centered functionality. The study emphasized that accessibility and inclusivity are vital for effective digital governance, as limited accessibility prevents citizens especially those with disabilities from fully benefiting from online services.

This study supports the present research on BarangayConnect in Barangay Tambo, as both aim to enhance transparency and efficiency through digital transformation in local governance.

While the Surigao del Norte project focused on management information and administrative automation, the current study extends this by exploring real-time reporting and citizen engagement, emphasizing how digital tools can strengthen accountability and community trust at the barangay level.

Enhancing Local Governance in Surigao del Norte through Barangay Connect: A total Management Information System for Barangay

The study “Enhancing Local Governance in Surigao del Norte through Barangay Connect: A Total Management Information System for Barangay” (Villamor et al., 2021) introduced a digital Management Information System (MIS) designed to automate and streamline barangay operations. The system improved data management, report generation, and service monitoring, leading to faster transactions and more efficient decision-making. Evaluation using the System Usability Scale (SUS) revealed a high usability score of 91.28%, indicating strong user satisfaction and system effectiveness.

This study supports the present research on BarangayConnect in Barangay Tambo, as both aim to enhance transparency and efficiency through digital transformation in local governance. While the Surigao del Norte project focused on management information and administrative automation, the current study extends this by exploring real-time reporting and citizen engagement, emphasizing how digital tools can strengthen accountability and community trust at the barangay level.

Development of an Online Report Management System for Local Government Officials and Residents (e-Reklamo)

The study “Development of an Online Report Management System for Local Government Officials and Residents (e-Reklamo)” (Santos et al., 2020) developed an Android-based reporting platform that enables residents to submit complaints and feedback directly to barangay officials. The system includes a chat feature, GPS locator, and image upload, allowing for faster, more accurate communication between citizens and local authorities. Testing and user evaluations revealed high satisfaction with the system’s usability and responsiveness, highlighting its effectiveness in facilitating timely feedback and government action.

This research closely relates to the present study on BarangayConnect, as both aim to strengthen real-time communication and transparency between residents and barangay officials. However, while e-Reklamo focuses primarily on report submission and case tracking, BarangayConnect expands this by emphasizing open data sharing, accountability, and community engagement, aligning with the principles of good governance and Habermas’s Theory of Communicative Action.

Enhancement of Barangay Management System

The study “Enhancement of Barangay Management System” (Delos Santos et al., 2021) focused on developing an integrated software solution designed to improve the efficiency and transparency of barangay operations. The Barangay Management System (BMS) includes modules for resident profiling, financial management, document tracking,

and service requests. Its automation features streamlined administrative workflows,

reduced errors, and supported data-driven decision-making. The system also enhanced transparency and accountability by providing real-time visibility into barangay transactions and activities.

This study is closely related to BarangayConnect, as both aim to strengthen local management and administrative efficiency, BarangayConnect extends its purpose to real-time reporting, citizen participation, and transparency promoting two-way communication between residents and officials in Barangay Tambo. Both systems highlight the growing importance of technology in improving responsiveness, trust, and engagement within local communities.

Information Management System with Project Monitoring For Barangay

The study “Information Management System with Project Monitoring for Barangay” focused on developing and evaluating the Barangay Document and Issuance System (BDIS) a web-based platform designed to simplify document processing and record management in local barangays. Using the Rapid Application Development (RAD) model of the Systems Development Life Cycle (SDLC), the system was evaluated by IT experts and barangay stakeholders, achieving a high usability rating of 4.58 (“strongly agree”) on the System Usability Scale. Results showed that BDIS improved administrative efficiency, reduced workload, and provided a reliable database for barangay records.

This study relates to BarangayConnect as both aim to enhance local governance through digitalization and automation of barangay processes. While BDIS focuses on improving administrative transactions and document management, BarangayConnect

extends this concept by integrating real-time issue reporting and transparency

mechanisms, enabling stronger citizen engagement and more responsive governance.

Development and evaluation of web-based barangay profiling and issuance system using regression analysis

The study “Development and Evaluation of Web-Based Barangay Profiling and Issuance System Using Regression Analysis” explored the creation and assessment of an online platform aimed at improving data management and document processing in barangay operations. By integrating regression analysis, the researchers examined the system’s effectiveness in streamlining the issuance of certificates, permits, and other official documents while enhancing data collection, organization, and evaluation. The findings revealed that the system significantly improved administrative efficiency, transparency, and data-driven decision-making within the barangay.

This study is relevant to BarangayConnect as both projects emphasize the use of web-based systems to promote efficient, transparent, and citizen-centered governance. While the Barangay Profiling and Issuance System focuses on data management and document issuance, BarangayConnect expands this concept by incorporating real-time reporting, feedback, and monitoring features, which strengthen the communication link between residents and local officials.

Barangay Integrated Management System with Mobile Support

The study “Barangay Integrated Management System with Mobile Support” was developed in response to the challenges posed by the pandemic, which required

barangays to continue delivering efficient public services while minimizing physical interactions.

The system centralized data from both the barangay office and the barangay health center, allowing for integrated management of resident information, public announcements, complaints, health services, and inventory of supplies. Additionally, a mobile application was introduced to enable residents to schedule appointments and file complaints digitally, reducing the need for face-to-face transactions. Expert evaluations found the system to be highly usable, secure, efficient, and effective in improving public service delivery and internal barangay management.

This study is closely related to BarangayConnect, as both systems aim to enhance local governance efficiency through digital innovation and data centralization. However, while the Barangay Integrated Management System emphasizes mobile functionality and health-related data integration, BarangayConnect extends these capabilities by providing real-time monitoring, and data-driven insights to further support informed decision-making and responsive governance within barangays.

Transparency and Accountability in the Philippine Local Government

The study highlights that transparency enables both the public and internal stakeholders to access and review government operations, fostering accountability among officials. It emphasizes that true transparency exists when governance is open to public scrutiny and encourages citizen participation in decision-making. information support, (6} mental health and emotional support, and (7) business.

This concept directly relates to the Barangay Connect System, which promotes transparent local governance by allowing digital access to records, reports, and transactions. Through the system's automated and traceable processes, it enhances accountability, minimizes errors, and ensures that barangay operations are visible and reliable to the community.

Alalay sa Impormasyon: Process-Documentation and Preliminary Assessment on Barangay San Juan ACCFAS' Data Management

The study "Alalay sa Impormasyon" explores the challenges of data management in Barangay San Juan ACCFA, highlighting the effects of outdated and inefficient manual systems on governance, security, and accessibility. Through a collaboration between Manuel V. Gallego Foundation Colleges (MVGFC) and local stakeholders, the project aimed to restore and digitize lost barangay records, improving administrative efficiency and community engagement using the Community-Based Participatory Action Research (CBPAR) approach. Findings revealed significant system deficiencies, emphasizing the importance of sustainable and secure data management solutions.

This study relates to BarangayConnect as both emphasize modernizing barangay data systems to improve efficiency, transparency, and citizen participation. Like Alalay sa Impormasyon, BarangayConnect seeks to establish a centralized, reliable platform that bridges governance and community involvement through real-time digital communication and information sharing.

Kabataan-Konek: A Barangay Web-Based Youth Information Management System with Data Analytics

The study “Kabataan-Konek” focuses on the development of a web-based youth information management system for barangays, designed to assist Sangguniang Kabataan (SK) officials in managing resident data efficiently. The system integrates features such as online registration, data analytics, QR code authentication for clearances, and project monitoring tools. It also includes dashboards, announcement modules, and certificate requests to enhance transparency and accessibility. Evaluation using ISO 25010 standards yielded a high average quality score of 95.63%, proving the system’s functional suitability, reliability, and efficiency.

This study relates to BarangayConnect as both systems leverage digital platforms to streamline barangay operations, promote transparency, and improve data-driven decision-making. While Kabataan-Konek focuses on youth-related governance and project management, BarangayConnect broadens this concept by enabling real-time reporting, feedback, and transparency across all barangay services, fostering inclusive community engagement and accountability.

Web-Based Public Street Lighting Complaint Application with Realtime Whatsapp Notification Using Prototype Method in Pemalang Regency

The study developed a web-based complaint system for public street lighting (PJU) in Pemalang Regency, integrating real-time WhatsApp notifications to enhance responsiveness and service efficiency. Built using PHP and MySQL, the system allows

residents to submit online complaints easily and receive instant feedback from officials.

17

Evaluation results demonstrated improved reporting efficiency and faster response times compared to traditional reporting methods. The project highlights how real-time communication tools can strengthen community participation and improve government service delivery.

This study relates to BarangayConnect as both systems utilize real-time digital reporting and feedback mechanisms to enhance communication between citizens and local authorities. While the PJU complaint system focuses on infrastructure maintenance, BarangayConnect expands this concept by providing a broader platform for real-time issue reporting, transparency, and collaborative governance within the barangay.

KAWÓ BANWA: DEVELOPMENT AND EVALUATION OF A BUDGET MONITORING INFORMATION SYSTEM FOR URBAN BARANGAYS IN SAN JOSE, OCCIDENTAL MINDORO

The study developed KAWÓ BANWA, a budget monitoring information system designed to promote transparency and accountability in urban barangays in San Jose, Occidental Mindoro. The system aims to address issues of fund mismanagement, delayed projects, and the lack of stakeholder engagement in local budgeting processes. Developed using Visual Basic 2022 and Microsoft Access, KAWÓ BANWA provides barangay officials with a secure and user-friendly tool for monitoring and managing funds efficiently. Evaluation results showed that the system significantly enhanced transparency and accuracy in financial reporting, contributing to improved

18

local governance and service delivery.

This study supports the goal of BarangayConnect by demonstrating how digitized systems can strengthen transparency, accountability, and efficiency in barangay operations. While KAWÓ BANWA focuses on financial transparency, BarangayConnect extends the principle of open governance to real-time reporting and public issue monitoring, empowering both residents and officials to engage in collaborative governance.

SEAL OF GOOD LOCAL GOVERNANCE FOR BARANGAY (SGLGB) MANAGEMENT SYSTEM FOR THE DILG OF CITY OF SANTA ROSA

The Seal of Good Local Governance for Barangay (SGLGB) Management System was developed to support the Department of the Interior and Local Government (DILG) in Santa Rosa City in conducting efficient and accurate performance assessments of barangays. The SGLGB serves as an annual recognition and evaluation program that encourages local service improvement through accountability and incentives. The study identified that the manual processes of document verification, record-keeping, and tracking used by the Component City/Municipality Performance Assessment Team (CC/M PAT) were time-consuming, prone to human error, and led to operational inefficiencies. To address this, the researchers designed a management system that automated these procedures, improving accuracy, data security, and workflow efficiency. Based on usability testing guided by ISO 25010 Software Product Quality standards, the system was rated highly by barangay secretaries and assessment teams for its functionality, usability, and security.

This study relates to BarangayConnect as both aim to enhance local governance through system automation and digital record management. While the SGLGBManagement System focuses on internal administrative efficiency and performance evaluation within the DILG, BarangayConnect extends this principle by enabling citizen participation and communication between residents and barangay officials. enhances risk reduction by ensuring proper knowledge transfer among stakeholders, with the community as the central actor.

Docu-Go: The Development and Assessment of a Web-Based Barangay Document Requesting System

The study Docu-Go was developed to improve the efficiency of document processing and delivery within barangay offices. Recognizing the essential role of barangays in community development, the researchers designed and assessed a web-based document requesting system to modernize traditional, manual procedures. Conducted in a barangay in Cabanatuan City, Nueva Ecija, the study followed a developmental research design using a modified waterfall model. The system's evaluation, based on the ISO 25010 software quality model, involved both IT experts and local residents. Findings revealed that the system's functionality and quality were generally acceptable, demonstrating its potential to simplify document requests, reduce processing time, and enhance service delivery. The study also presented recommendations for future improvement, focusing on user experience and system optimization.

This study is relevant to BarangayConnect as both aim to digitize barangay operations and enhance accessibility of public services. While Docu-Go concentrates on streamlining document requests, BarangayConnect seeks to create a broader communication and service platform connecting residents, barangay officials, and local responders. Both systems reflect the shared goal of improving efficiency, transparency, and citizen satisfaction through the adoption of web-based technologies in local governance.

Implementation of Barangay Management System: An Extension Service of CvSU- Tanza Campus

This study focused on the implementation of a comprehensive barangay management system designed to serve both barangay officials and residents. The system offered a wide range of features, from posting news, announcements, and community projects to managing complaints, issuing barangay certifications, and generating reports through an interactive dashboard. Developed using HTML, CSS, JavaScript, PHP, and MySQL, the system followed the Agile development model, ensuring iterative improvement through continuous testing and refinement. Evaluation using the ISO 25010 software quality model revealed excellent results, with IT experts rating it highly in terms of functionality, usability, reliability, and security (weighted mean of 4.59). Likewise, barangay officials and residents evaluated its usability with a mean score of 4.73, indicating exceptional user experience and accessibility.

This study closely relates to BarangayConnect, as both systems aim to digitize and centralize barangay operations to improve governance and service delivery.

21

While the CvSU-Tanza system emphasizes efficient management of official records and public services. BarangayConnect expands on this foundation by integrating citizen interaction, transparency mechanisms, and real-time updates. Together, these systems demonstrate how technology can modernize local governance, promote accountability, and foster stronger engagement between the barangay and its constituents.

WEB-BON: THE DESIGN AND DEVELOPMENT OF A WEB-BASED BARANGAY INFORMATION AND RECORD MANAGEMENT SYSTEM

The study WEB-BON focused on designing and developing a web-based Barangay Information and Record Management System that aimed to modernize barangay operations and enhance communication efficiency. One of its notable features was the integration of Short Message Service (SMS), allowing barangay officials to distribute announcements directly to residents, ensuring timely information dissemination. The researchers employed a developmental research method, utilizing tools such as Gantt Charts, Use Case Models, Entity-Relationship Models, and Data Flow Diagrams to design and implement the system according to user requirements gathered from interviews and observations of barangay officials. The findings revealed that the developed system provided a more effective and reliable means of managing records and improving service delivery within the barangay level.

This study is relevant to the proposed BarangayConnect system as both projects emphasize digital transformation in barangay governance through web-based platforms. While WEB-BON focused primarily on information management and

communication enhancement through SMS. BarangayConnect aims to extend these functionalities by introducing modules for resident profiles, document requests, incident reporting, and transparency portals. Both systems share the goal of streamlining barangay processes, fostering accessibility, and strengthening the connection between local government officials and residents through technology-driven governance.

Development and Implementation of an Office Automation System for Barangay Local Government Units

This study focused on the development and implementation of an Office Automation System (OAS) to promote digital empowerment within Barangay Local Government Units (BLGUs). Its goal was to automate manual and repetitive administrative tasks, including document requests, complaint filing, and report generation, to streamline service delivery and improve efficiency. The system was developed using the Extreme Programming (XP) methodology, emphasizing iterative design, testing, and user feedback to ensure usability and functionality. It was implemented with PHP, HTML, and MySQL, and successfully produced nine functional components that supported faster and more accurate barangay transactions. The researchers recommended system adoption across other barangays, encouraging customization based on each barangay's workflow.

This study closely aligns with the objectives of the proposed BarangayConnect system. Both projects aim to enhance local governance efficiency through automation and digital solutions. While the BLGU-OAS primarily focused on internal administrative automation, BarangayConnect extends its scope by integrating real-time data access,

transparency features, and citizen interaction modules, such as service requests and resident information management of information sources impacts the speed at which information flows, with disruptions in any source leading to slower information dissemination. Together, they highlight how automation contributes to streamlined governance, reduced human error, and improved citizen satisfaction at the barangay level.

Assessment of Digital Information Systems for Local Barangays

This study focuses on the evaluation of a digital information system developed for local barangays to streamline governance, improve access to information, and strengthen community engagement. The system offers an online platform that enables barangays to efficiently manage records related to local governance and public services. The research assesses the system's effectiveness, usability, and impact on key governance principles particularly transparency, accountability, and communication within the community. Findings highlight both the benefits and limitations of implementing such systems and propose recommendations for continuous improvement to guide policymakers and local stakeholders. The study underscores the role of digital systems in promoting evidence-based decision-making and advancing efficient, transparent local governance.

This study aligns closely with the goals of BarangayConnect, as both emphasize the use of digital transformation to modernize local governance. While this research provides a broad assessment of how digital systems enhance accountability and public service efficiency.

BarangayConnect builds on these insights by proposing a fully integrated Management Information System (MIS) tailored to the needs of barangays in Surigao del Norte. It combines features for real-time data monitoring, automated reporting, and citizen interaction, ensuring not only information accessibility but also active community participation and improved administrative decision-making.

An Open Data and Geo-based Information Systems

This study presents the development of a web-based information system integrating open data and geographic-based features to enhance the management and accessibility of barangay information. As the smallest government unit, the barangay plays a vital role in maintaining records on health, crime, and community welfare, serving as the foundation for national and local government programs. The system developed in this research functions as a centralized data platform for information gathering, spatial mapping, and data-driven decision-making. By utilizing geographic information systems (GIS), the platform enables barangay officials to visualize and analyze community data effectively, thereby improving the planning, monitoring, and delivery of local government services. Overall, the study emphasizes how open data and geo-based technology can strengthen governance transparency and operational efficiency at the grassroots level.

This study aligns with the goals of BarangayConnect, as both advocate for digital transformation in local governance. However, while the open data and geo-based system focuses on spatial visualization and community mapping.

BarangayConnect extends its scope to a comprehensive Management Information System (MIS) that centralizes all barangay operations from citizen profiling and documentation to service monitoring and communication. By integrating automated processes and real-time reporting, BarangayConnect not only enhances efficiency but also promotes data-driven governance and citizen empowerment, echoing the principles outlined in this study.

Mobile Application for Incident Reporting

This study focuses on the development of a mobile application for real-time incident reporting in the Philippines. Traditionally, emergencies and incidents are reported through self-reporting or calls to the national hotline (911), which often fails to capture accurate location details promptly. To address this, the system integrates automated geolocation features, allowing the application to detect a user's latitude and longitude or enabling manual pinning on Google Maps. The system supports incident classification public disturbance, ordinance violation, and crime incidents and transmits detailed information, including photos and descriptions, to the nearest barangay responder officer. The barangay officer can then coordinate with other emergency units, such as hospitals, firefighters, or police stations. A web-based administrative dashboard also manages responder data and generates statistical reports and visual analytics. Evaluation results show positive user feedback, highlighting the application's usability, accuracy, and reliability in improving emergency response efficiency.

This study is relevant to BarangayConnect, as both systems emphasize the use of digital tools for efficient community response and coordination.

However, while the Incident Reporting Application focuses primarily on emergency and law enforcement communication, BarangayConnect takes a broader governance approach, integrating modules for resident profiling, service requests, documentation, and transparency reporting. The integration of reporting and location-based monitoring in BarangayConnect could be enhanced by adopting similar real-time geolocation and incident tracking features, making the system more responsive and aligned with the needs of modern barangay operations.

Development of an Information-Based Dashboard: Automation of Barangay Information Profiling System (BIPS) for Decision Support towards e-Governance

This study focuses on the development of the Barangay Information Profiling System (BIPS) an information-based dashboard designed to automate the profiling of barangay households for improved decision-making and e-governance. The system aims to help barangay officials efficiently collect, store, and analyze demographic and socio-economic data such as employment status, income, education, housing type, and sanitation. By automating data profiling, BIPS provides barangay officials with accurate statistical insights necessary for informed budget allocation, program planning, and community development initiatives. The system underwent evaluation by IT experts, achieving a mean score of 4.47 in functionality and 4.50 in system testing, indicating that the system performed reliably and met usability standards. The study highlights the role of digital tools in supporting evidence-based governance and improving administrative efficiency at the barangay level.

In relation to BarangayConnect, this study supports the integration of data-driven governance and decision-support tools. While BIPS emphasizes household profiling and statistical reporting, BarangayConnect extends this concept by incorporating real-time reporting, transparency modules, and communication features that bridge residents and officials. Adopting a similar dashboard interface from BIPS could enhance BarangayConnect's usability, enabling barangay leaders to make faster and more informed decisions grounded in accurate community data.

Barangay Management System

The study on the Barangay Management System (BMS), also referred to as e-Barangay, presents a web-based management platform designed to enhance efficiency in local governance. It seeks to transform traditional barangay operations often characterized by manual processes and central dependence into a more automated, inclusive, and citizen-oriented system. The BMS simplifies critical administrative activities such as document requests, complaint filing, and local data generation, thereby providing barangay officials with faster access to reliable statistics for decision-making and policy implementation.

The researcher adopted the prototype model, focusing on iterative testing of features, user interface design, and usability evaluations to ensure the system's functionality, efficiency, and reliability. By using actual data from the local government unit, the study ensured that the system aligned with real-world barangay needs. Furthermore, the study suggested the integration of fiscal management features in future enhancements to support comprehensive governance functions.

In relation to BarangayConnect, this study reinforces the importance of web-based automation in improving transparency, administrative efficiency, and data-driven decision-making at the barangay level. While the BMS focuses primarily on administrative streamlining, BarangayConnect builds upon this concept by incorporating real-time project monitoring, communication features, and resident engagement tools, offering a more holistic platform that bridges governance and community participation.

E-Barangay: A Framework for a Web-Based System for Local Communities and Its Usability

This study addresses the absence of a structured e-governance framework at the community level by proposing and developing the E-Barangay system—a web-based platform designed to support digital transformation in barangay operations. Using a mixed-method approach, the researchers constructed the E-Barangay framework, emphasizing core functionalities such as filing complaints, requesting official documents, submitting suggestions, and posting community announcements. The system's usability was evaluated through both objective and subjective methods, with results indicating favorable user experiences. Spearman Rank correlation analysis further revealed that design-related factors significantly influenced system usage frequency, validating the importance of user-centered design in community governance applications.

In relation to BarangayConnect, the E-Barangay framework provides a strong foundation for structuring digital interactions between residents and barangay officials.

While E-Barangay focuses on usability and core administrative transactions, BarangayConnect expands on this by integrating transparency features, incident reporting, and real-time communication channels. Drawing insights from E-Barangay's emphasis on usability testing and stakeholder involvement can strengthen BarangayConnect's design, ensuring that the system remains both accessible and effective in promoting citizen engagement and responsive local governance.

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