



ENHANCEMENT OF BARANGAY MANAGEMENT SYSTEM

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Abstract

The research culminates in the development of the "Barangay Management System (BMS)," an integrated software solution meticulously crafted to streamline governance and elevate service delivery in barangays—the smallest administrative units in the Philippines. This innovative system incorporates a range of features, including a resident database, document management, financial oversight, service request handling, inventory and asset management, as well as event and calendar management.

One of the primary advantages brought about by the BMS is its ability to significantly streamline operations within barangays. Through the automation of various tasks and the introduction of efficient data management processes, the system facilitates smoother administrative workflows. This automation not only reduces the workload on barangay officials but also minimizes the likelihood of errors in record-keeping and information management.

Furthermore, the BMS contributes to a marked improvement in service delivery. By offering a comprehensive platform for managing resident information, handling service requests, and coordinating community events, the system enhances the barangay's ability to respond promptly and effectively to the needs of its residents. The residents, in turn, benefit from more efficient and accessible services.

Data-driven decision-making becomes a hallmark of governance with the implementation of the BMS. The system provides barangay officials with valuable insights derived from accurate and up-to-date data. This enables

informed decision-making processes, fostering a governance approach based on evidence and real-time information.

Enhanced transparency and accountability are among the transformative outcomes of the BMS. The system's functionalities allow for greater visibility into the barangay's operations, making it easier to track financial transactions, monitor service delivery, and assess the overall performance of community programs. This transparency contributes to increased accountability among barangay officials.

The BMS plays a pivotal role in fostering community engagement. Through its features for event and calendar management, the system facilitates communication and collaboration within the barangay. Residents are informed about upcoming events, initiatives, and important announcements, creating a more connected and engaged community.

The development of the Barangay Management System marks a significant milestone in local governance. Its multifaceted features not only streamline administrative processes but also contribute to improved service delivery, data-driven decision-making, enhanced transparency and accountability, and increased community engagement within barangays.

Keywords: Administrative System for Barangays, Barangay Management System, Community Information System, Integrated Barangay Software,

*Local Governance Software, and
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Introduction

The preceding development of various industries is significantly propelled by the exponential advancement of technology. However, certain sectors have yet to integrate diverse techniques that could foster their progress. Previously, entrepreneurs determined the computer applications and issues to be addressed, but some businesses do not fully grasp this potential due to a limited understanding of the capabilities and constraints of modern computer technology among users. ^[1] OECD (2015)

In the Philippines, the barangay stands as the smallest political unit, playing a pivotal role in local governance. It serves as the primary conduit for government services and programs to the community. ^[2] Northern Illinois University (2011). One of its essential functions is to maintain peace and order and ensure the safety of its residents.

Nevertheless, many barangays still rely on manual processes in their daily operations, including the management of records and information. This traditional approach is time-consuming and error-prone, resulting in inefficiencies in delivering services and addressing community needs. ^[3] PreventionWeb (1991). The absence of a streamlined and efficient management system also impedes the barangay's ability to respond promptly to emergencies and crises.

Management Information Systems have become increasingly sophisticated, and our reliance on computers in various aspects of life, particularly in business operations, has grown. This not only streamlines business operations but also enhances employee productivity as they can allocate

more time to productive tasks rather than data gathering. ^[4] Kettinger, W. J., Ryoo, S. Y., & Marchand, D. A. (2021)

For instance, smart farming technology has given rise to data-driven farm management, achieving high farm performance through effective information management capabilities and practices. The Barangay Management Information System (BMIS) serves as the data and information hub for situational analysis in the barangay, utilizing accurate, reliable, and easily retrievable data for program planning and implementation. These serve as the foundation for the Barangay Integrated Development Plan (BIDP). ^[5] OECD. (2004)

Barangay officials and staff, for example, encounter similar challenges in their operations. They still rely on manual processes for managing records, information, and transactions. Consequently, they face difficulties in monitoring and evaluating the performance of their programs and services. ^[6] BIDANI. (2020) This situation underscores the need for a modern and efficient Barangay Management System (BMS) that can streamline operations, enhance services, and improve accountability and transparency.

Therefore, this study aims to develop a BMS that can address the past limitations of manual processes in the Barangay. Specifically, this study identifies the problems and challenges that the barangay faces in managing its operations, pinpoints the features and functionalities needed for an efficient BMS, and evaluates the system's past effectiveness in enhancing service delivery and accountability.

Specific Objectives

The main objective of this study is to develop a Barangay Management System (BBMS) that can help streamline operations, enhance services, and improve accountability and transparency. To achieve this, the following specific objectives are set:

1. Identifies the current problems and challenges in the manual processes of managing records, information, and transactions in Barangay.
2. Determines the features and functionalities needed for an efficient

BMS that can address the identified problems and challenges.

3. Develops and implements a BMS that meets the requirements of Barangay and its stakeholders.
4. Evaluates the effectiveness of the BMS in enhancing service delivery and accountability in Barangay.
5. Recommends strategies for the sustainable implementation and continuous improvement of the BMS in Barangay.

Scope and Delimitation

This study aims to develop a Barangay Management System (BMS) that modernizes operations, enhances services, and promotes accountability and transparency. The study focuses on several key aspects:

Firstly, it identifies the challenges and issues associated with manual processes for managing records, information, and transactions in a Barangay. Secondly, it determines the necessary features and functionalities required for an efficient BMS that can address the identified challenges. Subsequently, the study involves developing and implementing the BMS to meet the requirements of the Barangay and its stakeholders. Lastly, the effectiveness of the BMS in improving service delivery and accountability within the Barangay is evaluated.

The study primarily concentrates on the operations and services of a specific Barangay, encompassing resident record management, issuance of barangay

clearances, monitoring of barangay activities, and management of barangay funds. Stakeholders, including barangay officials, staff, and residents, actively participate in the study.

However, certain limitations are considered in this study, including examining the implementation of the BMS in other barangays or local government units, assessing the technological infrastructure and readiness of the specific Barangay, addressing any legal or policy implications arising from the BMS implementation, and providing training and technical support beyond the initial implementation to barangay officials and staff for using the BMS effectively. These limitations are crucial in understanding the study's scope, boundaries, and anticipated outcomes.

The study is planned and carried out in Masbate Province, specifically focusing on the Barangays of Masbate City, namely Barangay Bapor, Kalipay, Espinosa, Ibingay, Tugbo, Pating, and Centro.

Significance of the Study

The development of a Barangay Management System (BMS) has significant implications for local governance, particularly in Barangay. The following are the potential significance of this study:

Up-to-date and efficient operations.

The implementation of the BMS can help automate manual processes, reducing the time and effort needed to manage records, information, and transactions. This, in turn, can help streamline operations, making it

easier to deliver services and respond to community needs promptly.

Improved service delivery. The BMS can help barangay officials and staff improve their delivery of services, such as the issuance of barangay clearances, monitoring of barangay activities, and handling of barangay funds. By reducing the time needed to process transactions, the BMS can help improve the efficiency and quality of service delivery.

Enhanced transparency and accountability. The BMS can help promote transparency and accountability in Barangay by providing real-time updates on transactions, activities, and finances. This can help barangay officials and staff monitor the performance of their programs and services, ensuring that they are aligned with the needs and expectations of the community.

Increased community participation. The BMS can encourage

The Beneficiaries

Barangay Officials. The system streamlines administrative tasks, making it easier for officials to manage records, finances, and community activities. It enhances their ability to make informed decisions and improves overall governance.

Barangay Staff. The system simplifies daily operations, reducing the manual workload and the likelihood of errors. This efficiency allows staff to focus on delivering better services to residents.

Residents. Residents benefit from improved services, quicker response times to concerns, and streamlined processes for obtaining barangay clearances or participating in community activities, enhancing overall satisfaction.

Local Businesses. The system can facilitate better coordination with local businesses, making it easier for them to comply with regulations, access necessary

greater community participation by providing a platform for residents to access information, communicate with barangay officials and staff, and participate in decision-making processes.

Potential replication in other barangays. The development and implementation of the BMS can serve as a model for other barangays facing similar challenges in their operations. This can help improve local governance and enhance service delivery across the country.

In summary, the development of a BMS can have a significant impact on Barangay and the wider community. It can help up-to-date operations, improve service delivery, enhance transparency and accountability, increase community participation, and serve as a model for other barangays in the country.

permits, and engage with the barangay for community development initiatives.

Government Agencies. The system provides organized and accurate data, aiding government agencies in planning and implementing regional policies and programs more effectively.

Researchers and Analysts. The system generates valuable data that can be used for research and analysis, offering insights into community dynamics, needs, and trends.

Community Organizers. The system helps in planning and organizing community events and activities more efficiently, ensuring better participation and engagement.

Emergency Responders. The system enables faster and more accurate information dissemination during emergencies, assisting responders in providing timely assistance and support.

Educational Institutions. The system's data can be used for educational purposes, allowing institutions to study community patterns and engage in community-based learning initiatives.

The Gap Bridged by the Study

The gap identified in the Barangay Management System revolves around the absence of an efficient and automated management system within Barangay, leading to challenges in processes, data accuracy, and communication. To address this gap, the study aims to bridge the deficiency by developing and implementing a comprehensive Barangay Management System tailored to meet the specific needs and requirements of the barangay.

This bridge is more than just a technological solution; it represents a transformative approach to enhance the overall management practices and processes in Barangay. The study seeks to navigate through the existing deficiencies and offer potential solutions or enhancements to the

Conceptual Framework

In the conceptual framework of developing the Barangay Management System (BMS), the INPUT stage is a comprehensive process that involves identifying current problems and challenges in manual record management, determining the necessary features for an efficient BMS, and developing and implementing the system to meet the specific requirements of the Barangay and its stakeholders. This phase also encompasses the evaluation of the BMS's effectiveness in enhancing service delivery and accountability, providing crucial feedback for potential refinements. Additionally, recommendations for sustainable implementation and continuous improvement serve as valuable input, guiding strategies to maintain and optimize the BMS over time. Collectively, these inputs form the

Government Auditors. The system provides a transparent and traceable record of financial transactions, making it easier for auditors to ensure accountability and compliance with financial regulations.

current system. By doing so, it aspires to contribute significantly to the improvement of governance, communication, and operational efficiency within the barangay.

The bridge, in the context of this study, symbolizes the transition from manual and outdated processes to a modern, streamlined, and automated system. It envisions closing the gap in technology adoption within Barangay, ensuring that the management practices align with contemporary standards. As the study unfolds, it becomes a pathway to not only address the identified deficiency but also to pave the way for a more effective and responsive Barangay Management System that can adapt to the evolving needs of the community.

foundational data and insights needed to guide subsequent stages, ensuring the BMS is tailored to address specific issues, align with operational needs, and evolve to meet the changing demands of the Barangay.

The PROCESS stage in developing the Barangay Management System (BMS) follows a systematic approach guided by the Software Development Methodology. This encompasses various key phases, including Planning, Analysis, Design, Implementation, Testing, Integration, and Maintenance. In the Planning phase, project objectives are outlined, and resources are allocated. The Analysis phase involves a thorough examination of the identified problems and requirements, laying the groundwork for the BMS. Subsequently, the Design phase focuses on structuring the system,

determining features, and creating a blueprint for efficient functionality. The Implementation phase involves the actual development and coding of the BMS based on the design specifications. Rigorous Testing ensures the system's reliability and functionality, and the Integration phase merges components into a cohesive whole. Maintenance, the final phase, involves ongoing support, updates, and improvements to sustain the BMS's effectiveness. This process, guided by a comprehensive Software Development Methodology, ensures a systematic and well-planned approach to creating a tailored and functional Barangay Management System.

The OUTPUT of the Barangay Management System (BMS) development process is the realized and improved system, referred to as the "Enhancement of Barangay Management System." This output signifies the successful implementation of a more

advanced and efficient software solution tailored to address the identified challenges in manual information processes. It incorporates specific features and functionalities aimed at enhancing the management of records, information, and transactions within the Barangay. The developed system serves as a tangible outcome, reflecting the culmination of systematic planning, analysis, design, implementation, testing, integration, and maintenance efforts. The "Enhancement of Barangay Management System" stands as a technological asset, contributing to improved service delivery, and heightened accountability and transparency. It not only addresses current problems but also offers a foundation for ongoing enhancements, positioning the Barangay to better adapt to evolving needs and technological advancements in the future

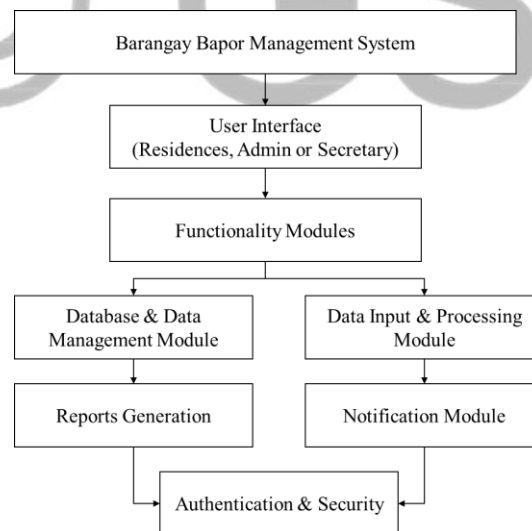


Figure 1 - Functional Block Diagram for Barangay Management System

In Figure 1, the functional block diagram provides a visual representation of the key components constituting the robust architecture of the Barangay Management System. The User Interface component serves as the user-friendly gateway,

comprising the graphical user interface (GUI), forms, and screens that seamlessly facilitate user interaction with the system. Meanwhile, the Functionality Modules component plays a pivotal role by incorporating modules dedicated to data

input and processing, database and data management, reports generation, and notifications. This ensures a comprehensive suite of functionalities essential for the efficient management of barangay-related tasks and processes. Additionally, the Authentication & Security component stands as a crucial safeguard, orchestrating user authentication, password encryption, role-based access control, and audit logging.

These security measures collectively guarantee secure access to the system, fortify data privacy, and maintain the integrity of sensitive information. By harmonizing these components, the Barangay Management System is equipped to provide a cohesive and secure platform, empowering users to navigate tasks with enhanced efficiency while prioritizing the protection and integrity of data throughout the system's operation.

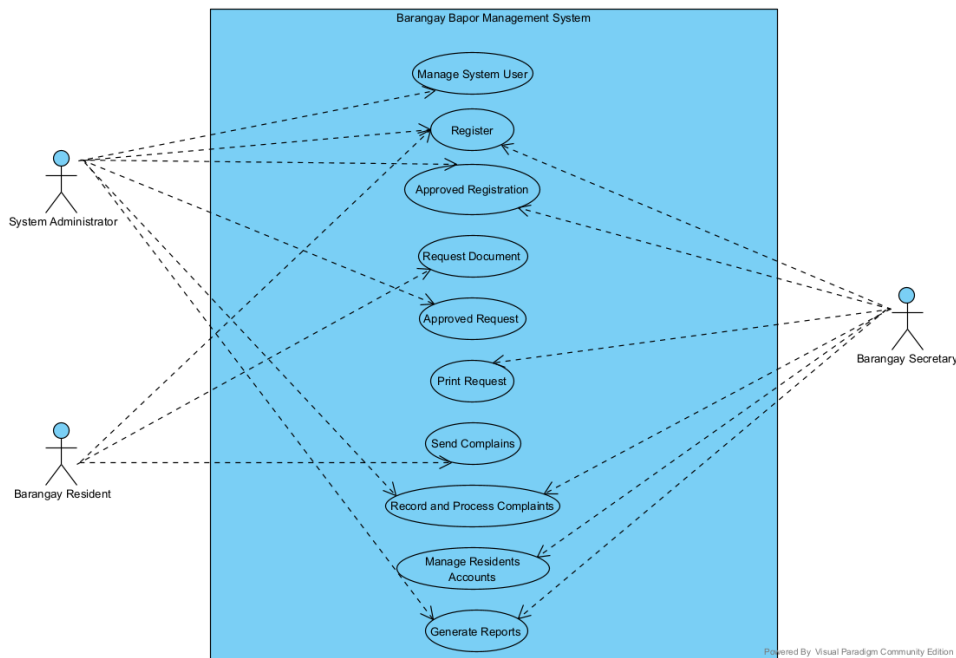


Figure 2 - Use Case for Barangay Management System

The use case for the Barangay Management System (BMS) reflects a cutting-edge approach to streamline and automate the process of issuing permits for boat operations in a coastal barangay or village. This innovative system revolutionizes the traditional permit application process by enabling Boat Operators to submit applications online, transforming the efficiency and accessibility of the entire procedure. Barangay Officials then conduct thorough reviews of the applications to ensure compliance with regulations and policies, leading to the

issuance of approved permits complete with unique permit numbers. The system maintains a meticulous record of all issued permits, fostering organized documentation and data management. Notably, the BMS goes beyond the initial issuance, facilitating seamless permit renewals and updates while also enabling robust monitoring and enforcement of permit compliance. The transformative benefits of this system encompass a significant reduction in paperwork, heightened transparency in the permitting process, improved monitoring of compliance, enhanced communication

channels, and timely notifications for permit renewals and updates. In essence, the Barangay Management System emerges as a pivotal tool that has the potential to revolutionize the efficiency and effectiveness of managing boat operations in coastal

barangays or villages, setting a benchmark for modern, technology-driven governance practices.

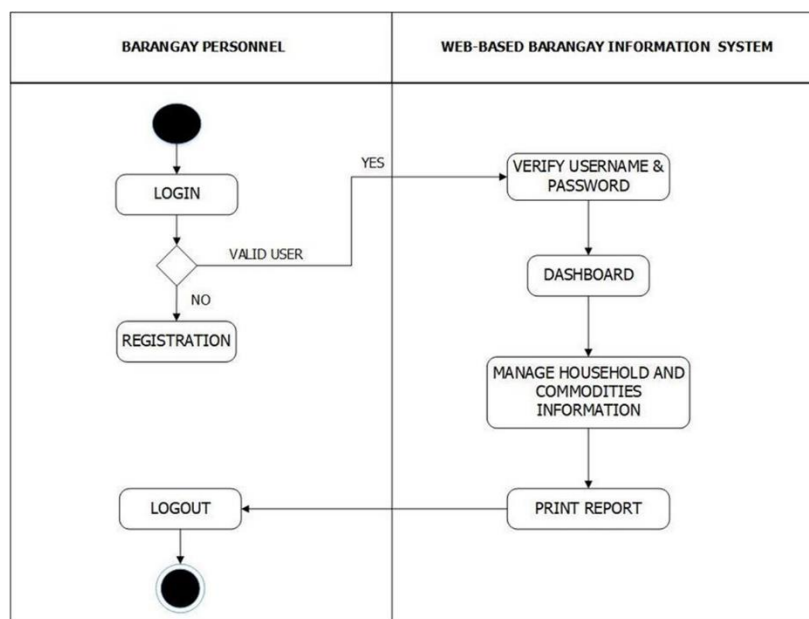


Figure 3 - Activity Diagram for Barangay Management System

The Activity diagram for the Barangay Management System serves as a visual representation to depict the flow of activities and actions within the system. It illustrates how various processes or tasks are carried out in a sequential or parallel manner, offering a comprehensive understanding of the system's operational dynamics. Activity diagrams play a crucial role in modelling the dynamic behavior of a system, showcasing the interactions among different components

or actors involved in a specific process or use case. They provide a detailed and intuitive overview, allowing stakeholders to grasp the intricacies of the system's functioning. As a powerful tool for system visualization, the Activity diagram enhances communication and comprehension, contributing to a more effective development and implementation process for the Barangay Management System.

Project Description

The Barangay Management System is a software solution designed to streamline and automate the management of barangay-related tasks and processes in a local barangay, the smallest administrative division in the Philippines. The system aims

to improve the efficiency, transparency, and accountability of barangay operations by providing an integrated and user-friendly platform for managing various functions, such as resident registration, the issuance of barangay clearances and permits, tracking

barangay projects and initiatives, and generating reports and notifications.

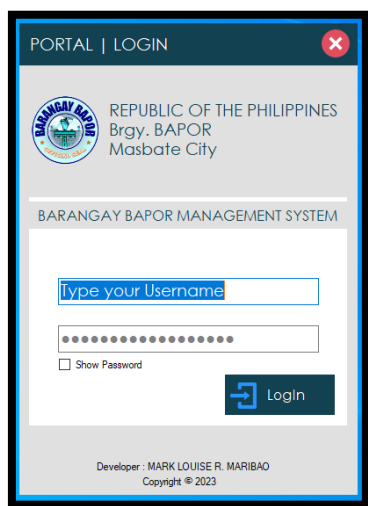


Figure 4 - Login Portal for Barangay Management System

The login portal for the Barangay Management System is designed to provide authorized personnel, such as barangay officials or staff, with secure access to the system. The system is used for various administrative tasks related to record-keeping and data management, financial management, administrative processes, communication and collaboration, and reporting and analytics. The specific features and functionalities of the system would depend on the requirements and design implemented by the barangay administration, and access is typically restricted to authorized users for data security and confidentiality.

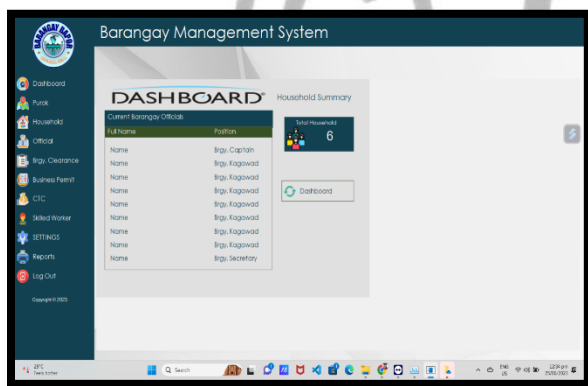


Figure 5 – Dashboard

The dashboard in the Barangay Management System serves as a user-friendly interface that presents relevant data and metrics

in a graphical format, allowing authorized users, such as barangay officials or staff, to easily understand the current status, trends, and performance of various aspects of the barangay's management. The potential purposes of the dashboard may include providing an overview of barangay statistics, displaying financial information, summarizing the status of administrative processes, facilitating communication and collaboration, and presenting reports and analytics for decision-making and planning. The specific content and design of the dashboard would depend on the system's requirements and configuration, aiming to provide an informative tool for monitoring and managing barangay operations.

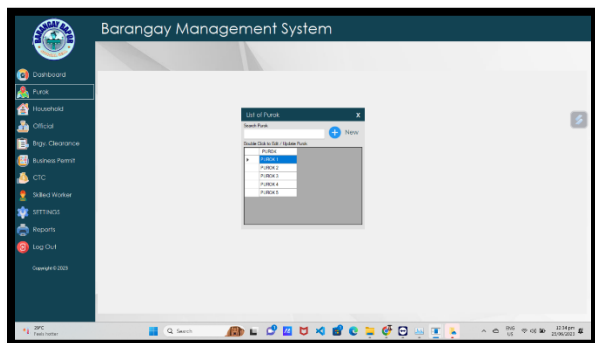


Figure 6 – “Purok” Module
The "Purok" module in the Barangay Management System is designed to organize and

manage the sub-divisions or zones within the barangay, known as "Purok." It enables barangay officials and staff to identify and map Purok, manage Purok-specific administrative tasks, allocate resources, coordinate service delivery, and generate reports and analytics related to

Purok-level data. The module aims to provide a systematic and organized approach to managing Purok, facilitating efficient administration, service delivery, and resource allocation at the Purok level, and supporting informed decision-making by barangay officials.

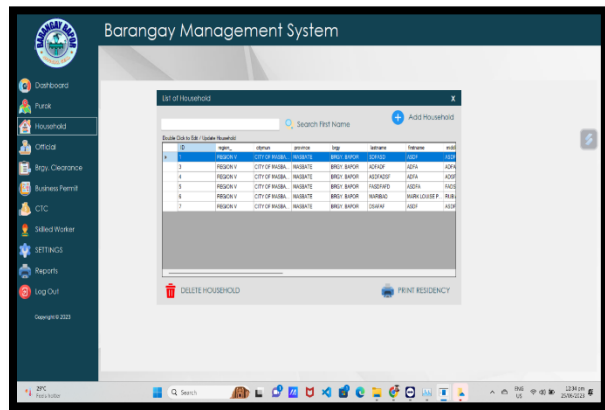


Figure 7 – “Household” Module

The "Household" module in the Barangay Management System is designed to manage household information, including registration, population management, service delivery, document management, emergency management, and reporting. It allows barangay officials or staff to maintain accurate and up-to-date information about households, their needs, and demographics. The module facilitates efficient service delivery, emergency management, and decision-making by generating reports and analytics, making it a comprehensive tool for managing household-related data in the barangay.

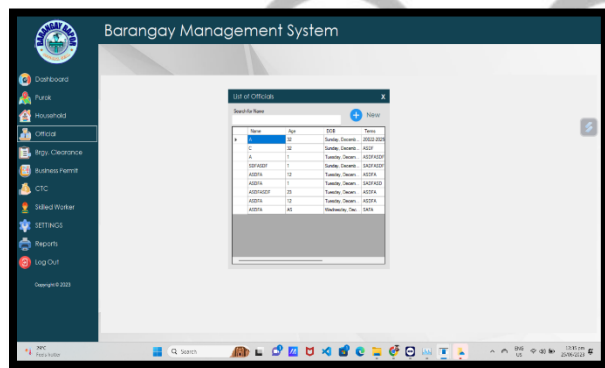


Figure 8 – “Official” Module

The "Official" module in the Barangay Management System manages information related to barangay officials and serves several purposes, including official registration, document management, attendance and scheduling, performance evaluation, access control and permissions, and reporting and analytics. It facilitates efficient administration, record-keeping, performance assessment, and decision-making, ensuring proper coordination, accountability, and security among barangay officials.

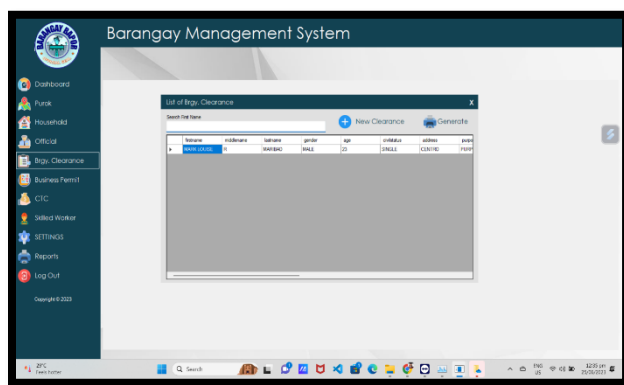


Figure 9 – “Barangay Clearance” Module

The “Barangay Clearance” module in the Barangay Management System is designed to manage and issue barangay clearances, certifying individuals or businesses as residents or engaging in legitimate activities within the barangay. Its purposes include issuing clearances, maintaining records, verifying authenticity, integrating with other modules, monitoring compliance, and generating reports. Overall, it serves as a tool for the efficient and transparent management of barangay clearances, ensuring compliance with local regulations and supporting decision-making and planning at the barangay level.

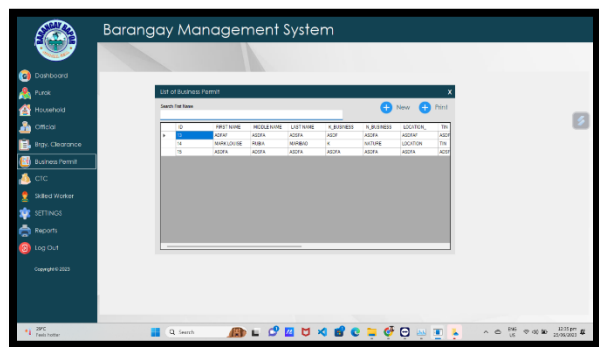


Figure 10 – “Business Permit”

The "Business Permit" module is a crucial component of a Barangay Management System, designed to handle the issuance and

management of business permits within a barangay (the smallest administrative division in the Philippines). This module keeps information up-to-date and automates the process of obtaining a business permit, which is a legal requirement for individuals or organizations operating a business within the barangay. It enables business owners to submit their permit applications online, providing a centralized platform for barangay officials to review, process, and approve the permits. The module also facilitates the monitoring and renewal of permits, ensuring compliance with local regulations and fostering a more efficient and transparent business environment in the barangay. Additionally, it can generate reports and statistical data to aid in decision-making and resource allocation for the barangay's economic development.

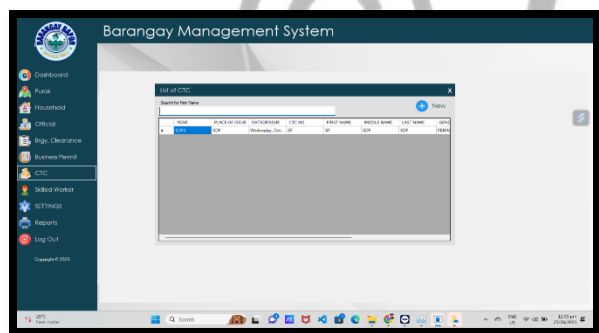


Figure 11 – “Community Tax” Module

The "Community Tax Certificate (Cedula)" module is an integral part of the Barangay Management System, aiming to streamline the issuance and management of community tax certificates, also known as

"cedulas." This module enables residents to apply for and obtain their community tax certificates through a digital platform, reducing the need for manual paperwork and physical visits to government offices. By submitting their personal information and supporting documents electronically, residents can conveniently complete the application process. The module facilitates efficient processing and verification of the applications by barangay officials, ensuring the accurate issuance of community tax certificates to eligible residents. With this module, the Barangay Management System enhances transparency, accessibility, and effectiveness in managing and administering community tax certificates within the barangay.

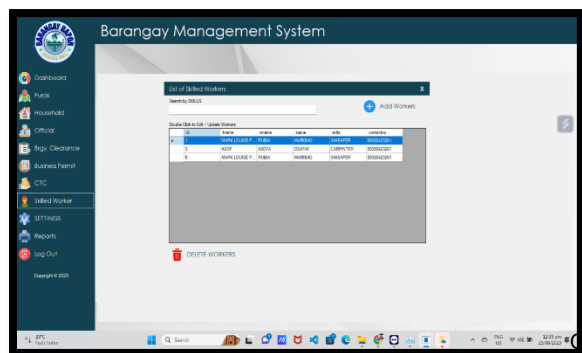


Figure 12 – “Skilled Worker” Module

The "Skilled Worker" module is an essential component of the Barangay Management System, designed to facilitate the registration and management of skilled workers within the barangay. This module aims to identify and document individuals with specialized skills and expertise residing in the community. The module enables skilled workers to register their information, qualifications, and areas of expertise through an online platform. By maintaining a

comprehensive database of skilled workers, the module allows barangay officials and residents to easily access and engage with these individuals for various projects, employment opportunities, or community initiatives. The module enhances the barangay's ability to connect residents with specific skills and promotes economic development by fostering local talent and resource utilization.

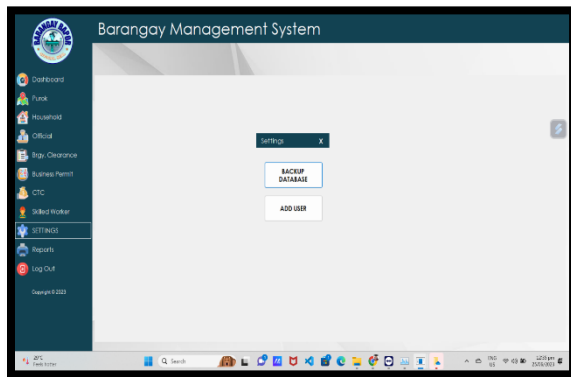


Figure 13 – "Settings" Module

The "Settings" module in the Barangay Management System serves two main objectives: data backup and user identity management. Firstly, the module provides functionality to back up the system's data periodically, ensuring that

important information such as resident records, documents, and administrative data are securely stored and protected. This helps safeguard the system against data loss or system failures, allowing for efficient data recovery and continuity in case of unforeseen events.

Secondly, the module facilitates user identity management by providing an interface for adding and managing user identities within the system. Barangay officials can create user accounts for authorized personnel, granting them specific access privileges based on their roles and responsibilities. This ensures that only authorized individuals can access sensitive information and perform designated tasks within the system. By managing user identities effectively, the module enhances system security, accountability, and control over data access and manipulation.

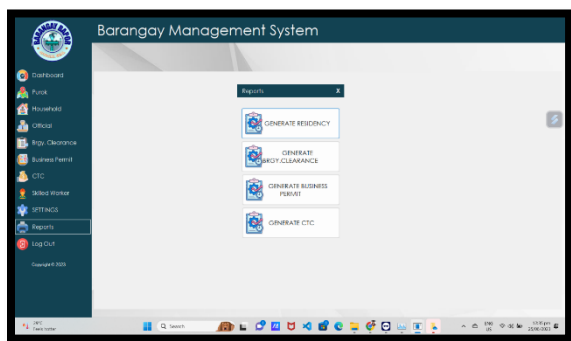


Figure 14 – "Reports" Module

The "Reports" module in the Barangay Management System is a crucial component that facilitates the generation and analysis of various reports pertaining to the barangay's administrative and operational activities. This

module allows barangay officials to generate comprehensive reports based on different aspects such as resident demographics, infrastructure development, financial transactions, and community projects. These reports provide valuable insights and information that can aid in decision-making, resource allocation, and planning for the barangay's future initiatives.

Additionally, the module enables customization of reports based on specific criteria and filters, allowing officials to extract the desired data and present it in a clear and concise manner. By providing efficient report generation and analysis tools, the module enhances transparency, accountability, and overall efficiency in the management and governance of the barangay.

Table A - Verbal Interpretation of the Respondents Rating for the Evaluation of the Barangay Management System

Indicators	Weighted Mean	Rank	Interpretation
1. Functionality	4.486	3	Very Satisfactory
2. Usability	4.617	1	Excellent
3. Reliability	4.465	4	Very Satisfactory
4. Security	4.465	4	Very Satisfactory
5. Maintainability	4.514	2	Excellent
6. Marketability	4.514	2	Excellent
Total Average Weighted Mean	4.510		Excellent

Table A presents the interpretation of respondents' ratings for the evaluation of the Barangay Management System. The evaluation criteria include functionality, usability, reliability, security, maintainability, and marketability. The table provides the weighted mean scores for each indicator, along with corresponding ranks and interpretations. Notably, Usability obtained the highest score at 4.617, securing the first rank and indicating an excellent performance. Maintainability and

marketability tied for the second rank with a score of 4.514, signifying an excellent rating. Functionality achieved a score of 4.486 and ranked third, indicating a very satisfactory level. Both Reliability and Security received a score of 4.465, placing them fourth and also considered very satisfactory. The total average weighted mean for all indicators is 4.510, portraying an overall excellent evaluation of the Barangay Management System.

Findings:

The Barangay Management System was developed in accordance with the anticipated design and specifications, and according to the respondents' assessments, it significantly fulfilled its objectives. The significance of the study is outlined in several key aspects:

1. In Table 3, the respondents' perceptions regarding the functionality of different features in a Barangay Management System are presented. The indicators, including the "Household" and "Dashboard" buttons, were rated excellent for easily displaying information about households and providing necessary overall information. The "Purok" button, "Official" button, and "Barangay Clearance" button received very satisfactory

ratings, indicating effective functionality with prompt information generation. The overall average weighted mean score for all indicators was 4.486, reflecting an excellent perception of the system's functionality.

2. Table 4 presents the respondents' perceptions regarding the usability of the Barangay Management System. Indicators include the user-friendliness of the system, usability in controlling, storing, and collecting data information, and the absence of errors in the system database. The system was rated excellent in terms of user-friendliness, ease of navigation, and interaction. Controlling, storing, and collecting data information received an excellent rating, suggesting

effectiveness for assigned personnel. The respondents also perceived the system database to be error-free, contributing to overall usability. The total average weighted mean for all indicators was 4.617, reflecting an excellent perception of the system's usability.

3. Table 5 displays the respondents' perceptions regarding the reliability of the Barangay Management System. Indicators include the availability of standby power communication backup supply, system responsiveness without errors, the capability to print hardcopies without internet connectivity, and handling a large amount of data. The system received a very satisfactory rating for reliability, demonstrating a standby power communication backup supply, prompt response to user requests without errors, and the ability to print hardcopies even without internet connectivity. An excellent rating was given for the system's capacity to handle significant amounts of data. The total average weighted mean for all indicators was 4.465, indicating a very satisfactory perception of the system's reliability.
4. Table 6 showcases the respondents' perceptions regarding the security of the Barangay Management System. Indicators include authentication mechanisms, access controls, a system audit trail, and the system's capability to handle data privacy. The system received a very satisfactory rating for security, demonstrating effective measures such as authentication mechanisms, access controls, and a system audit trail for monitoring suspicious activities. An excellent rating was given for the system's ability to handle data privacy and ensure information safety. The total average weighted mean for all indicators was 4.465, indicating a very satisfactory perception of the system's security.
5. Table 7 presents the respondents' perceptions regarding the maintainability of the Barangay Management System. Indicators include the

availability of 24/7 technical support, backup software provision, and online support. The system's maintainability was rated excellent, with technical support rated very satisfactory for its round-the-clock availability. The provision of backup software and online support received excellent ratings, suggesting that the developer offered necessary tools and resources for system maintenance and reliable support channels. The total average weighted mean for all indicators was 4.514, reflecting an excellent perception of the system's maintainability.

6. Table 8 displays the respondents' perceptions regarding the marketability of the Barangay Management System. Indicators include affordability, demand due to functions and value, and high-quality service with after-sales support. The system's marketability was rated excellent, with a very satisfactory rating for affordability, suggesting it was reasonably priced. An excellent rating was given for the system's demand based on its functions and value, meeting the needs of users effectively. The system also received an excellent rating for providing high-quality service and after-sales support, ensuring customer satisfaction. The total average weighted mean for all indicators was 4.514, reflecting an excellent perception of the system's marketability.
7. Table 9 provides a verbal interpretation of the respondents' ratings for the evaluation of the Barangay Management System, emphasizing indicators such as functionality, usability, reliability, security, maintainability, and marketability. Usability received the highest score of 4.617 and ranked first, indicating an excellent performance. Maintainability and marketability tied for the second rank with a score of 4.514, also denoting an excellent rating. Functionality achieved a score of 4.486 and ranked third, indicating a very satisfactory level. Reliability and security both received a score of 4.465, ranking fourth and also considered very satisfactory.

Conclusion

Based on the findings of this study the following conclusions are formulated:

1. The total average weighted mean score for all indicators was 4.486, indicating an excellent perception of the system's functionality.

2. The total average weighted mean for all indicators was 4.617, reflecting an excellent perception of the system's usability.
3. The total average weighted mean for all indicators was 4.465, indicating a very satisfactory perception of the system's reliability.
4. The total average weighted mean for all indicators was 4.465, indicating a very satisfactory perception of the system's security.
5. The total average weighted mean for all indicators was 4.514, reflecting an excellent perception of the system's maintainability.
6. The total average weighted mean for all indicators was 4.514, reflecting an excellent perception of the system's marketability.
7. The total average weighted mean for all indicators is 4.510, reflecting an overall excellent evaluation of the Barangay Management System.

Recommendations

The recommendation is for aspiring designers to conduct a thorough examination of the system designs they intend to create. This examination should encompass various factors, including current market trends and consumer satisfaction with the design. While the development process may involve significant expenses, it is important to recognize that it can greatly influence the progress of the project and its financial implications.

1. The respondents rated usability, maintainability, and marketability as "Excellent," but functionality, reliability, and

security received a rating of "Very Satisfactory," indicating a need for improvement. Therefore, further evaluation and enhancements should be pursued to elevate the rating and achieve better performance in terms of reliability and security.

2. Consider incorporating Barangay Health Worker Services in future system development.
3. Consider the inclusion of offline services.
4. It is highly recommended to implement this system in all Barangays in Masbate City.
5. Provide copies of the manuscript in the school library.

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