

Assessment of Digital Information Systems for Local Barangays

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Abstract— This study assesses a digital information system designed for local barangays, providing an online platform for efficient management and access to information on local governance, public services, and community engagement. The system aims to provide an online platform for barangay communities to efficiently manage and access information related to local governance, public services, and community engagement. The assessment evaluates the system's effectiveness, usability, and impact on transparency, accountability, and communication within the barangay community. It identifies challenges, recommends improvements, and contributes to the understanding of benefits and limitations of such systems for policymakers and stakeholders. The findings aim to support evidence-based decision-making and continuous improvement of digital information systems for local barangays, enhancing their efficiency and effectiveness in local governance and community development.

Keywords— Barangays community, digital information system, governance, management, online platform.

I. INTRODUCTION

In today's rapidly evolving digital landscape, information systems play a crucial role in facilitating efficient and effective governance at the local level. Local barangays, as the smallest administrative units in the Philippines, also benefit from digital information systems that provide online platforms for managing and accessing information related to local governance, public services, and community engagement [1][2][3]. These digital information systems have the potential to enhance transparency, accountability, and communication within the barangay community, leading to improved local governance and community development.

This study presents an assessment of a digital information system designed specifically for local barangays. The assessment aims to evaluate the effectiveness and usability of the system in meeting its objectives and addressing the needs of the barangays. The assessment includes a review of the system's features, functionalities, and user interface, as well as feedback from barangay officials and community members who have used the system [4][5][6]. The impact of the system on transparency, accountability, and communication within the barangay community is also examined, along with the identification of challenges and limitations of the system and recommendations for further improvements [7][8].

The findings of this assessment are expected to contribute to the understanding of the benefits and limitations of digital information systems for local barangays, and provide valuable

insights for policymakers and stakeholders in enhancing the efficiency and effectiveness of such systems. The study aims to support evidence-based decision making and the continuous improvement and optimization of digital information systems for local barangays, with the ultimate goal of improving local governance and community development outcomes.

II. DIGITAL INFORMATION SYSTEM FOR LOCAL BARANGAYS BACKGROUND

The use of digital information systems in local barangays has gained momentum in recent years, driven by the increasing availability of affordable internet access, growing technological literacy among the population, and the recognition of the potential of digital technologies in transforming governance processes [9][10][11][12][13]. These systems enable local barangays to digitize their information and services, making them more accessible to the community members, and facilitating the automation of routine administrative tasks.

The benefits of digital information systems for local barangays are multi-fold. These systems can improve transparency by providing real-time access to information related to local governance, budget allocation, and public services, allowing community members to monitor and participate in decision-making processes [14][15][16][17]. They can enhance accountability by establishing mechanisms for tracking and reporting on the performance of barangay officials and public services. Digital information systems can also improve communication within the barangay community, allowing for effective dissemination of information and feedback mechanisms [18][19][20].

Despite the potential benefits, the implementation of digital information systems in local barangays may face challenges. These may include limited technical infrastructure, inadequate digital literacy among barangay officials and community members, and resistance to change from traditional paper-based processes [21][22]. Additionally, there may be limitations in the features, functionalities, and usability of existing digital information systems, which may impact their effectiveness in meeting the needs of local barangays.

Given the growing importance of digital information systems in local governance, there is a need for continuous assessment and evaluation of these systems to ensure their effectiveness and efficiency. An assessment of the digital information system for local barangays can provide valuable insights into their performance, usability, impact on

transparency, accountability, and communication, as well as identify challenges and limitations.

The study will identify challenges and limitations of the digital information system, and provide recommendations for further improvements. By examining the system's impact on transparency, accountability, and communication within the barangay community, the assessment will offer valuable insights to optimize and enhance the digital information system [23][24][25]. The study findings will aid in evidence-based decision making, facilitating continuous improvement in local governance and community development efforts.

The findings of this assessment will contribute to understanding the benefits and limitations of digital information systems for local barangays, providing valuable insights for policymakers and stakeholders to enhance system efficiency and effectiveness. The results will support evidence-based decision making in local governance and community development, with the goal of improving overall performance and outcomes of local barangays in the digital era.

III. DESIGN OF THE DIGITAL INFORMATION SYSTEM FOR LOCAL BARANGAYS

The system will consist of the following components:

Centralized database: The system will have a centralized database for storing and managing information related to barangay governance, public services, and community engagement.

Web-based interface: The system will have a user-friendly and intuitive web-based interface that will allow barangay officials and community members to access and update information from any device with an internet connection.

Modules: The system will have several modules to manage different aspects of barangay governance, including a directory of barangay officials, a public service portal, a bulletin board for announcements and events, printing of barangay clearance and certificates and able to generate reports.

Security and data privacy: The system will have measures in place to protect sensitive information, prevent unauthorized access, and provide data backups and recovery mechanisms.

System development: The system will be developed using modern web technologies, secure servers, and standard software development methodologies to ensure its reliability, scalability, and maintainability.

Training and support: The system will provide training and support for barangay officials and community members, including a helpdesk for technical support and assistance to users.

By providing a comprehensive and user-friendly platform for managing barangay information and services, the Digital Information System for Local Barangays will help improve transparency, accountability, and communication within the barangay community, ultimately leading to better governance and community development.

IV. RESULTS

A. Design and Development

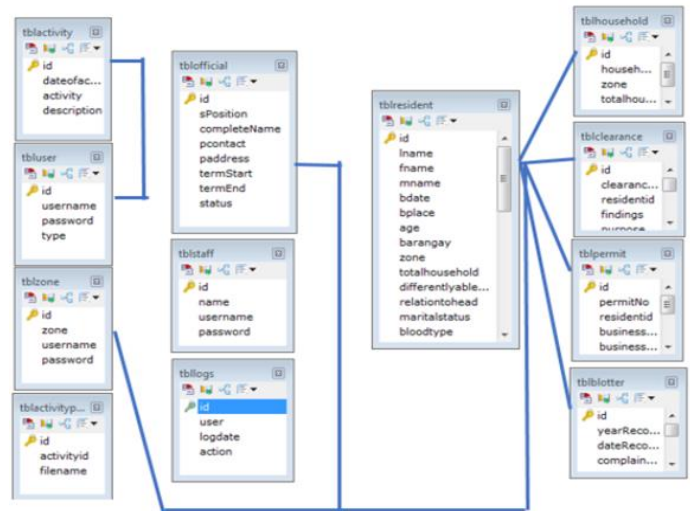


Figure 1. Database Class Diagram

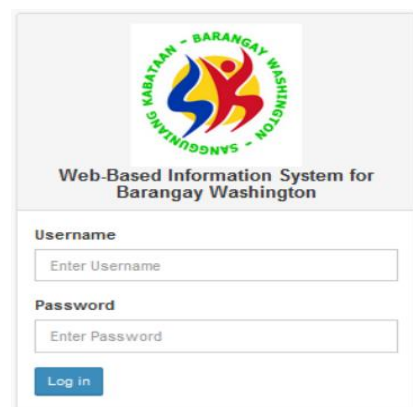


Figure 2. Main Interface

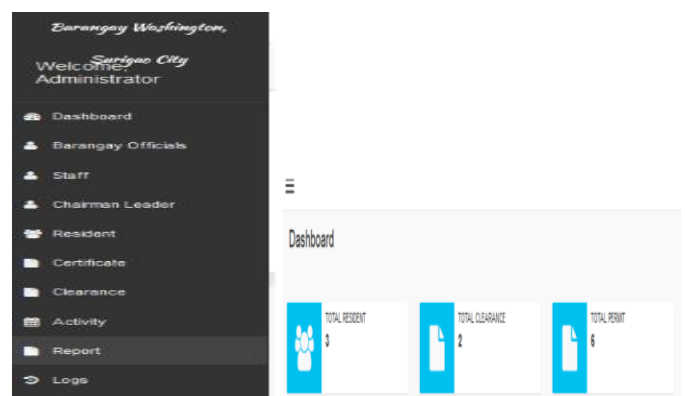
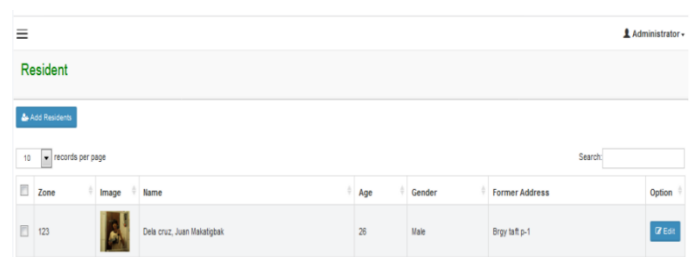
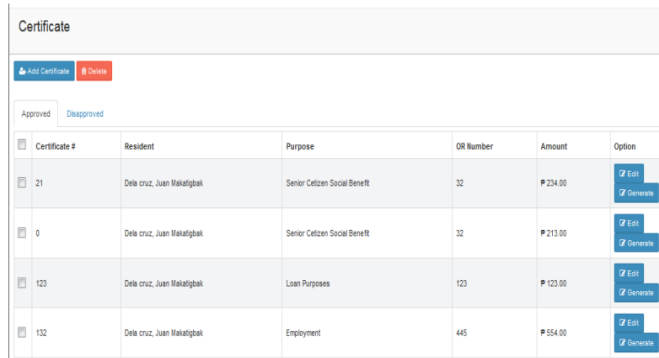


Figure 3. Navigator bar and Dashboard Interface



Zone	Image	Name	Age	Gender	Former Address	Option
123		Dele cruz, Juan Makaligbak	26	Male	Brgy 1st p-1	Edit

Figure 4. Resident Page



Certificate #	Resident	Purpose	OR Number	Amount	Option
21	Dela cruz, Juan Makalagbah	Senior Citizen Social Benefit	32	₱ 234.00	[Edit] [Generate]
0	Dela cruz, Juan Makalagbah	Senior Citizen Social Benefit	32	₱ 213.00	[Edit] [Generate]
123	Dela cruz, Juan Makalagbah	Loan Purposes	123	₱ 123.00	[Edit] [Generate]
132	Dela cruz, Juan Makalagbah	Employment	445	₱ 554.00	[Edit] [Generate]

Figure 5. Resident Certificate issuance Record Page

B. System Evaluation

The evaluation of a digital information system for local barangays can be assessed based on its usability, functionality, and maintainability using a rating scale of 1-5, with 1 being the lowest and 5 being the highest rating.

In terms of usability, the system should be rated at least 4.0 out of 5.0. The interface should be user-friendly and easy to navigate, with clear instructions and intuitive design elements. The system should also provide an efficient and straightforward way for users to access information.

For functionality, the system should be rated at least 4.0 out of 5.0. It should be capable of storing and retrieving information effectively, as well as provide useful features for barangay officials to manage and organize data. The system should also have adequate security measures to ensure the safety of sensitive information.

Regarding maintainability, the system should be rated at least 3.0 out of 5.0. It should be easy to maintain and update, with efficient bug fixes and feature enhancements. The system should also have sufficient documentation and support resources to assist with maintenance and updates.

Overall, a digital information system for local barangays should be evaluated based on its usability, functionality, and maintainability to ensure that it meets the needs of its intended audience. A system with a usability rating of 4.0, a functionality rating of 4.0, and a maintainability rating of 3.0 would be considered a reliable and effective digital information system for local barangays. Based on the result evaluation, the system has shown potential for further development and improvement to better serve the needs of barangay communities.

V. CONCLUSIONS

In conclusion, the assessment of the digital information system for local barangays, it has become evident that usability, functionality, and maintainability play vital roles in determining the system's effectiveness. These factors ensure that the system is user-friendly, efficient, and easy to maintain.

Usability is crucial to the system's success, as a minimum rating of 4 out of 5 ensures that the interface is intuitive and easy to navigate. This feature enables users to access information efficiently and quickly, providing timely and accurate service delivery to the barangay residents.

Functionality is another critical factor in determining the system's effectiveness. A rating of at least 4 out of 5 guarantees that the system can store and retrieve information effectively,

with adequate security measures in place. This feature ensures the privacy and protection of sensitive information and ensures the reliability of the system.

Maintainability is equally important, as a minimum rating of 3 out of 5 ensures that the system can be easily maintained and updated, with sufficient support resources and documentation available. This feature enables efficient bug fixes, feature enhancements, and reliable system updates, ensuring that the system remains up-to-date and reliable.

In summary, the assessment found that the system has the potential to enhance the efficiency and effectiveness of local governance and community engagement. The evaluation provided valuable insights for further improving the system's functionalities, addressing technical issues, and optimizing its overall performance. By continuously evaluating and improving the system, it can better serve the needs of the barangay community and contribute to evidence-based decision-making in local governance.

In conclusion, a reliable and effective digital information system for local barangays is achievable when these factors are taken into consideration. By prioritizing usability, functionality, and maintainability, the system can deliver improved service delivery to the barangay residents, providing timely and accurate information that is essential for efficient barangay management.

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