

Landbank Electronic Modified Disbursement System: Status, Challenges, And Opportunities for Enhancement

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ABSTRACT:

This study examined the adoption, performance, challenges, and enhancement opportunities of the LANDBANK Electronic Modified Disbursement System (eMDS) at the Boac Branch in Marinduque, Philippines. Using a mixed-method design, survey data were collected from 26 eMDS users (clients and employees) and complemented by qualitative feedback. Results indicate a very high level of system adoption and satisfaction (composite mean = 3.87, Strongly Agree), with users rating eMDS as efficient, secure, and preferable to manual disbursement processes. Key challenges identified include transaction delays during peak usage (WM = 2.69) and system lag under limited internet connectivity (WM = 2.73), despite generally strong perceptions of system stability. Users also reported high confidence in security features (composite mean = 3.85) and workflow efficiency (composite mean = 3.69). The findings underscore the importance of optimizing transaction speed, improving low-bandwidth performance, and strengthening embedded user support tools. Anchored on the Sustainable Development Goals, the study highlights how eMDS contributes to SDGs 8, 9, 10, and 16 by enhancing efficiency, inclusivity, and transparency in public financial management.

Keywords: eMDS, digital banking, public financial management, system efficiency, security, accessibility, LANDBANK, Sustainable Development Goals

INTRODUCTION

The banking industry has been evolving for the past years, resulting in the banking system's improvement and expansion. Consequently, the banking industry has been adopting changes to consumer demands, particularly in modernizing the traditional banking system that the industry has already been accustomed to. Digital Banking has been introduced to the Philippines reasonably recently despite improvement in traditional banking. Its services have become increasingly prominent among customers who find digital banking convenient and straightforward (Depusoy and Nartea, 2020). The rise of digital banking platforms is evident in our country as many traditional banks such as LandBank, Bank of the Philippines Islands (BPI), Banco de oro (BDO), Philippine National Bank (PNB), Metrobank, and many more have adopted to provide online applications to cater digital banking demands by their consumers (Gigante & Martin, 2022). Digital Banking service is a banking activity or service whose facilities use an electronic or digital system through the property of a bank, the property of a prospective customer, or a customer of a bank, all processes of which are carried out independently and automated. The Bangko Sentral ng Pilipinas (BSP) thrust to promote financial inclusion digitalization of payment. As the BSP constantly enables policies and regulation to encourage growth and development of digital payments innovation, it also leads to further financial inclusion. Digital banking innovations lessen transaction cost and eradicates the commonly mentioned advantages of having a transaction account. A financial institution is very important in providing digital banking, making sure that the customers are provided with digital banking services through the financial institution. One of the examples is LANDBANK Electronic Modified Disbursement System (eMDS) which is a digital system that helps government and institutional funds disbursement to replace manual processes with more secure, transparent, and efficient financial transactions. Digital banking allows their clients to access banking service such as transfer money, save money, take out a loan and pay bills through their mobile phone, the internet banking, and digital payment. Some of the factors that are associated with the positive response of the consumers towards digital banking such as convenience since they no longer need to be physically present to transfer their money and check their balance

on time. Efficiency since it allows the clients to do their monetary transaction at ease and customized since it allows the clients to create automated bills payments, request funds, and more. Some of the issues that have been seen by the consumers that are not very much willing to use digital banking such as decreased security and privacy since it can easily be hacked and the money in the digital account can also be transferred to another account. This study could give us insights into LandBank, helping us better understand customer behavior in using its digital banking services and to devise effective strategies for delivering those services more efficiently. However, things like insufficient digital infrastructure, unreliable internet connections, and people not being used to digital banking make it hard (Mendoza et al., 2020). LANDBANK's Electronic Modified Disbursement System (eMDS) represents the continuing shift of Philippine public fund disbursement from manual processes to digital platforms designed to improve efficiency, transparency, and control in government-related transactions. This transition aligns with national efforts to expand digital payments and strengthen digital finance infrastructure, as emphasized in the Bangko Sentral ng Pilipinas (BSP) Digital Payments Transformation Roadmap. However, even when adoption is high, user experience issues particularly transaction delays, dependence on internet stability, and support accessibility can weaken trust and reduce system efficiency. In provincial contexts like Marinduque, the challenges of connectivity and varying digital readiness can be more pronounced, making it necessary to assess not only adoption and satisfaction but also the system's operational and technical constraints. This study assessed the status, challenges, and opportunities for enhancement of LANDBANK eMDS in the Boac Branch, focusing on (1) adoption and satisfaction, (2) operational and technical challenges, (3) perceived efficiency, security, and accessibility, and (4) user-informed strategies for improvement. The study is significant because evidence-based improvements in eMDS can strengthen digital public financial management, reduce transaction friction for government and institutional clients, and help sustain long-term confidence in digital disbursement systems.

Statement of the Problem

The LANDBANK Electronic Modified Disbursement System (eMDS) was developed to improve the disbursement of public funds, make transactions more efficient, and promote transparency in government financial management. However, in spite of its envisioned benefits, users have noted various challenges that hinder its overall effectiveness and use.

This study seeks to identify the following questions:

1. What is the current adoption rate and user satisfaction level of LANDBANK's Electronic Modified Disbursement System (eMDS) among clients and employees in Marinduque?
2. What are the most common technical and operational challenges faced by eMDS users when using the system?
3. How do clients and bank personnel perceive the efficiency, security, and accessibility of these digital banking services?
4. What strategies can be implemented to improve system efficiency, security, and customer experience based on the feedback of users and bank personnel?

Scope and Limitations of the Study

This study examined the status, challenges, and opportunities for enhancement of the LANDBANK Electronic Modified Disbursement System (eMDS) as experienced by selected clients and employees of the LANDBANK Boac Branch in Marinduque, focusing on system adoption, efficiency, security, accessibility, and operational performance using a quantitative-descriptive research design and self-reported survey data. The scope was limited to users directly involved in eMDS transactions during the data collection period and did not include technical system audits, financial performance evaluations, or comparative analyses across other LANDBANK branches. Consequently, the findings may not be fully generalizable to all LANDBANK branches or regions due to the limited sample size, purposive sampling technique, and reliance on perception-based data, which may be influenced by response bias and external factors such as internet connectivity and institutional conditions.

Despite these limitations, the study provides context-specific empirical insights that serve as a valuable baseline for system enhancement and future multi-site, longitudinal, and mixed-method investigations into digital public financial management systems.

Significance of the Study

This study is significant as it provides empirical evidence on the performance, challenges, and enhancement opportunities of the LANDBANK Electronic Modified Disbursement System (eMDS) within a provincial banking context. By examining user perceptions of adoption, efficiency, security, and accessibility, the study contributes to the growing body of literature on digital public financial management and technology adoption in government banking systems, particularly in small island and rural settings that are often underrepresented in existing research.

For LANDBANK and other government financial institutions, the findings offer data-driven insights that can inform system optimization, service delivery improvements, and policy decisions aimed at strengthening transparency, efficiency, and trust in digital disbursement platforms. The identification of operational and connectivity-related challenges provides a practical basis for targeted system enhancements and infrastructure support.

For policymakers and public sector administrators, the study highlights the role of digital disbursement systems in promoting efficient and accountable financial management. The results may serve as a reference for refining digitalization strategies, improving institutional workflows, and supporting inclusive access to government financial services, especially in geographically constrained areas.

For clients and system users, the study amplifies user experiences and concerns, ensuring that system development remains responsive to actual needs. Understanding factors that influence satisfaction and accessibility can lead to more user-centered system design and improved service quality.

For academicians and future researchers, the study provides a localized empirical baseline that can support comparative, longitudinal, and mixed-method investigations on digital banking systems, technology acceptance, and public financial management. It also contributes methodological insights relevant to evaluating digital systems in resource-constrained environments.

Overall, this study underscores the importance of continuous innovation in digital public financial systems and affirms the potential of the eMDS to enhance efficiency, security, and inclusivity in government financial transactions, thereby contributing to sustainable institutional development.

Hypotheses of the Study

To determine the status, challenges, and opportunities for enhancement of the LANDBANK Electronic Modified Disbursement System (eMDS), the following hypotheses were tested:

Hypothesis 1 (System Performance and User Perception)

H₀₁ (Null Hypothesis): There is no significant relationship between users' perceived efficiency of the eMDS and their overall satisfaction with the system.

H₁₁ (Alternative Hypothesis): There is a significant relationship between users' perceived efficiency of the eMDS and their overall satisfaction with the system.

Hypothesis 2 (Security and User Trust)

H₀₂ (Null Hypothesis): There is no significant relationship between perceived security of the eMDS and users' trust in the system.

H₁₂ (Alternative Hypothesis): There is a significant relationship between perceived security of the eMDS and users' trust in the system.

Hypothesis 3 (Accessibility and System Use)

H₀₃ (Null Hypothesis): Perceived accessibility of the eMDS has no significant effect on users' frequency of system use.

H₁₃ (Alternative Hypothesis): Perceived accessibility of the eMDS has a significant effect on users' frequency of system use.

Hypothesis 4 (Operational Challenges and User Satisfaction)

H₀₄ (Null Hypothesis): Operational and technical challenges encountered in using the eMDS have no significant effect on user satisfaction.

H₁₄ (Alternative Hypothesis): Operational and technical challenges encountered in using the eMDS have a significant effect on user satisfaction.

Hypothesis 5 (Differences in Perception by Respondent Type)

H₀₅ (Null Hypothesis): There is no significant difference in perceptions of eMDS efficiency, security, and accessibility when respondents are grouped according to respondent type (clients and employees).

H₁₅ (Alternative Hypothesis): There is a significant difference in perceptions of eMDS efficiency, security, and accessibility when respondents are grouped according to respondent type (clients and employees)

Overall Hypothesis

H₀: Users' perceptions of efficiency, security, and accessibility do not significantly influence overall evaluation of the eMDS.

H₁: Users' perceptions of efficiency, security, and accessibility significantly influence overall evaluation of the eMDS.

REVIEW RELATED LITERATURE

Digital disbursement systems have become a critical component of public financial management reforms, particularly in improving efficiency, transparency, and accountability in government transactions. Prior studies on e-government and digital financial platforms emphasize that system adoption is strongly influenced by perceived usefulness, ease of use, security, and institutional trust (Davis, 1989; Ajzen, 1991). In the Philippine context, Depusoy and Nartea (2020) and Mendoza et al. (2020) identified convenience and efficiency as key drivers of digital banking adoption, while also highlighting infrastructure limitations and internet instability as persistent barriers in rural and provincial areas. International literature on electronic government payment systems shows that digital disbursement platforms significantly reduce transaction time, administrative costs, and opportunities for error or corruption, particularly in payroll and government fund transfers (World Bank, 2024). However, studies also note that system performance issues such as transaction delays and downtime can negatively affect user trust even when overall adoption remains high (Gigante & Martin, 2022). Despite growing literature on digital banking and e-government platforms, empirical studies focusing specifically on government-linked digital disbursement systems at the provincial level remain limited, particularly in small-island and resource-constrained settings. This gap underscores the need for localized assessments of systems such as LANDBANK's eMDS to understand not only adoption levels but also operational constraints and user-driven improvement strategies. The present study addresses this gap by providing context-specific empirical evidence on eMDS implementation in Marinduque.

METHODOLOGY

Research Design

This study used both qualitative and quantitative design to evaluate the experiences, challenges, and opportunities on the implementation of LANDBANK's Electronic Modified Disbursement System (eMDS) in Marinduque. This study makes an in-depth analysis of user perceptions to shed light on the adoption, security, usability, and operational efficiency of digital banking services. A phenomenological approach was applied to study the experiences of bank clients and employees in using the EMDS. This approach allows the study of individual perceptions, obstacles, and perspectives on digital banking services.

Quantitative Research Design

Descriptive-correlational research design will be used to acquire and analyze quantitative data on adoption, efficiency, security, accessibility, and customer satisfaction. The descriptive part assists in picking out the trends, patterns, and customers experiences while the correlational method analyses the correlation of perceived usefulness, ease of use, security and adoption rates of electronic banking services. Survey questionnaires will be used as a tool to collect quantitative data from the LANDBANK clients and staff based on their experience when using the system. This study will use statistical parameters such as frequency distribution, percentage, ranking, weighted mean, Pearson correlation coefficient (r) would be employed to analyse the data collected for overall analysis and conclusions. Therefore the information that has been processed will be valid and reliable to a large extent.

Qualitative Research Design

1. Phenomenological approach to get the deep insight about the problems, the system efficiency and the improvements to be made Thematic analysis to describe the similar themes from the qualitative response
2. Justification for the Mixed-Method Approach Using a mixed-method approach, the research design will be conducted to ensure that the statistical trends and personal experience is captured in the study to have a comprehensive evaluation on LANDBANK electronic banking system.

The manuscript was carefully proofread to ensure consistency in capitalization, terminology, and word usage across all sections. Technical terms such as eMDS, LANDBANK, and Electronic Modified Disbursement System were standardized throughout the manuscript to improve clarity, coherence, and professional presentation.

Research Locale

The study will be conducted in Marinduque, specifically in the Boac branch of LANDBANK. The location is selected due to their relevance in the study, as they are the primary banking institutions in the province providing digital banking services. The population for this study is the clients and employees of LANDBANK Boac Branch, Marinduque who are directly involved with the use of the Electronic Modified Disbursement System (eMDS). The system is used by 22 clients of the LANDBANK Boac Branch who are engaged in the handling of the system transactions and 4 employees of the bank are directly involved with the handling of the system transactions. Both clients and employees of the LANDBANK Boac Branch were purposively identified as the population of this study as they are the end-users and service providers of the system. The study population comprised of 22 clients and 4 employees of LANDBANK Boac branch who are directly involved with eMDS

Research Instruments

The research will make use of structured survey questionnaire with a 4 point Likert-scale questions from 1 (Strongly Disagree) to 4 (Strongly Agree) instrument to capture the following; the usefulness and ease of use of Electronic Modified Disbursement System, customers satisfaction and trust on the security of electronic banking transactions, challenges faced by the customers and bank personnel in using the system.

Statistical Treatment Data

The data gathered from the respondents will be systematically organized, collated, and tallied by the researcher to ensure clarity and coherence prior to analysis. All responses obtained through the structured questionnaire will be subjected to appropriate statistical treatments to enhance the accuracy, reliability, and validity of the study's results.

To analyze the survey responses, the following statistical instruments will be utilized:

Weighted Mean, which will determine the overall assessment of respondents by assigning weights to each response option, thereby reflecting the relative importance or intensity of their perceptions.

Frequency, used to identify how often specific responses occur within the dataset, allowing the researcher to observe common trends or dominant patterns.

Percentage, which will compute the proportion of each response in relation to the total sample size, providing a clearer representation of the distribution of answers;

Ranking, which will be applied to arrange the identified factors in order of importance or frequency, based on computed frequencies and percentages;

Four-Point Likert Scale, which will serve as the primary measurement tool for gauging the respondents' level of agreement, satisfaction, or perception regarding digital banking experiences and features; and

Pearson's Correlation Coefficient (r), which will measure the strength and direction of the relationship between key variables such as perceived usefulness, perceived ease of use, security, and accessibility of LANDBANK's EMDS digital banking services. This correlation analysis will help determine whether these variables significantly influence users' acceptance and utilization of digital banking platforms.

Ethical Standard were strictly observed, including seeking informed consent and ensuring the confidentiality and anonymity off all personal and financial data collected. The data gathered occurred from January to October 2025

RESULTS AND DISCUSSION

This section discusses the findings of the study in relation to existing literature and relevant theoretical perspectives, with emphasis on the adoption, challenges, and opportunities for enhancing the LANDBANK Electronic Modified Disbursement System (eMDS). The discussion is organized according to the key results presented and aligned with the study's objectives.

Part 1. The Level of Adoption and Customer Satisfaction of The Respondents Toward eMDS ?

Table 1.1 The Respondents Frequently Use Various eMDS Services.

Description	Frequency	Rank
Salary/Allowance Disbursements	26	1
Government Fund Transfers (e.g., agency-to-agency)	13	4
Bulk Payments (e.g., payroll, pensions)	20	2

Account Reconciliation	12	5
Transaction Monitoring/Reporting	15	3

The results presented in Table 1.1 indicate that salary/allowance disbursements are the most frequently used eMDS service (ranked first), followed by bulk payments and transaction monitoring/reporting, implying that eMDS is most critical where high-volume, time-sensitive releases of funds are required. This pattern suggests that digital disbursement systems become most valuable when they reduce processing time and paperwork burden in repetitive institutional transactions supporting the national shift toward digital government payments highlighted by BSP's digital payments transformation agenda. Results support the findings of Bangko Sentral ng Pilipinas (2023) Digital Payments transformation. Roadmap that digital disbursement systems, especially government payroll and financial transfer are a significant catalyst in the country's shift toward a cash- life economy.

Table 1.2 Level of Adoption and Customer Satisfaction

Statement	WM	SD	Interpretation
1. The system is easy to access and available when needed.	3.85	0.50	Strongly Agree
2. I feel confident using the system without needing assistance.	3.85	0.50	Strongly Agree
3. The registration and onboarding process was simple and convenient.	3.81	0.94	Strongly Agree
4. I prefer using EMDS over traditional manual disbursement methods.	4.00	0.05	Strongly Agree
5. I am satisfied with the performance of the system.	3.85	0.50	Strongly Agree
<i>Composite Mean</i>	<i>3.87</i>	<i>0.50</i>	<i>Strongly Agree</i>

The results presented in Table 1.2 indicate a very high level of adoption and satisfaction (Composite Mean = 3.87, Strongly Agree), suggesting that users perceive eMDS as accessible, convenient, and superior to manual disbursement methods. Practically, this means eMDS already delivers its core promise faster and more reliable workflows yet sustaining this advantage requires continued improvements in speed and support systems so that satisfaction remains stable even during high-demand periods. This signifies that the users demonstrate a very high level of acceptance, confidence, and satisfaction with the system. Such a rating suggests not only familiarity with the platform but also a strong preference for its continued use in performing financial disbursement tasks. The findings imply that the system has successfully met user expectations in terms of efficiency, accuracy, and convenience, which are essential indicators of successful technology adoption in government financial processes. The respondents consistently agreed that eMDS is accessible, reliable, and user-friendly, reflecting

the platform's capacity to streamline workflows and reduce manual workload. The highest-rated statement, “*I prefer using eMDS over manual disbursement*” (WM = 4.0), shows that users clearly perceive eMDS as superior to traditional methods.

Part 2. The most common technical and operational challenges faced by eMDS users when using the system?

Table 2.1. *Operational Challenges faced by eMDS users when using the system*

Statement	WM	SD	Verbal Interpretation
1. I experience delays when processing transactions through eMDS	2.69	0.61	Agree
2. Inconsistent or unclear procedures affect my use of the system.	2.19	0.11	Disagree
3. There is insufficient support or guidance from bank staff regarding the use of EMDS.	1.81	0.13	Disagree
4. I find it difficult to recover from error or system failures in the EMDS.	1.96	0.11	Disagree
5. I am not regularly updated about system changes or service interruptions.	1.92	0.74	Disagree
Composite Mean	2.11	0.34	Disagree

Table 2.1 shows the most common operational challenges faced by EMDs users when using the system, along with the mean, standard deviation, and interpretation. As presented, the operational challenges associated with using the eMDS system are generally not experienced by the surveyed users, as indicated by a composite mean of 2.11 (SD = 0.34). The table also shows that the challenge most frequently encountered by respondents is “I experience delays when processing transactions through eMDS,” which is the only item with an “Agree” and has a mean of 2.69 (SD = 0.61). Meanwhile, the lowest level of agreement among the challenges is for the statement, “There is insufficient support or guidance from bank staff regarding the use of eMDS,” with a mean of 1.81 (SD = 0.13).

The results indicate that operational challenges are generally not frequently experienced (Composite Mean = 2.11, Disagree), suggesting that procedures and support are largely sufficient for routine use. However, the item “delays when processing transactions” (WM = 2.69, Agree) stands out as the most persistent operational issue, implying that even occasional delays can become a major pain point in public fund disbursement where timing is non-negotiable (e.g., payroll and scheduled releases).

Table 2.2. *The Technical challenges encountered by eMDS users when using the system*

Statement	WM	SD	Verbal Interpretation
1. I frequently experience system errors or downtimes.	2.03	0.55	Disagree
2. I encounter issues with slow loading or lag during transactions.	2.73	0.85	Agree

3. Technical issues often cause failed or incomplete transactions.	2.38	0.80	Disagree
4. I find it difficult to recover from error or system failures.	2.04	0.34	Disagree
5. Technical support is slow or ineffective when issues are reported.	2.03	0.75	Disagree
<i>Composite Mean</i>	<i>2.24</i>	<i>0.66</i>	<i>Disagree</i>

Looking at Table 2.2, it shows that users do not consistently experience technical problems since the composite mean of 2.24 falls under a Disagree rating. The topmost problem in Table 2.2 was extracted on the system's performance as users agreed that they experience "Problems during operation such as slow loading or lag when making transactions" (WM = 2.73). This means that although the system does not consistently experience failures and errors, an area of concern would be the speed and lag during operation. The findings suggest that the Landbank system is a technically stable and reliable system with only minor problems of occasional lag. The respondents experience echo that the system infrastructure is while reliable, still lagging.

Part 3. Clients and Bank personnel perceive the Efficiency, Security, and Accessibility of these Digital banking services based on their experiences.

Table 3.1. *Efficiency and Effectiveness of the LandBank eMDS*

Statement	WM	SD	Verbal Interpretation
1. The system reduces the time required to complete financial transactions.	3.50	0.95	Strongly Agree
2. The system helps me manage financial records and documentation more efficiently.	3.76	0.43	Strongly Agree
3. Using the system has reduced paperwork in my transactions.	3.46	0.61	Strongly Agree
4. The system is reliable in processing transactions on time.	3.88	0.09	Strongly Agree
5. I believe EMDS has improved overall workflow and productivity.	3.84	0.50	Strongly Agree
<i>Composite Mean</i>	<i>3.69</i>	<i>0.52</i>	<i>Strongly Agree</i>

Table 3.1 shows the users' perceptions on efficiency and effectiveness of Land Bank eMDS. The result from the analysis revealed a high positive consensus with a composite mean of 3.69 (SD = 0.52) which translates to a "Strongly Agree" rating for all the indicators. From the result of the study, the system is found to be most highly rated for attribute such as usefulness of the Land Bank eMDS in ensuring transaction are processed on time with a mean score of 3.88 (SD = 0.09) This is followed by the attribute that the system is useful in ensuring overall workflow and productivity of the bank (WM = 3.84, SD = 0.50) and in ensuring efficient management of financial records and documents (WM = 3.76, SD = 0.43).

Table 3.2. *Security of the LandBank eMDS*

Statement	WM	SD	Verbal Interpretation
1. I feel my financial information is secure when using the system.	3.84	0.50	Strongly Agree
2. The system uses adequate authentication measures (e.g., password, OTPs.	4.00	0.05	Strongly Agree
3. I am confident that unauthorized access is prevented by the system.	3.81	0.94	Strongly Agree
4. I am informed about data protection and privacy measures in place.	3.77	0.43	Strongly Agree
5. I have never experience or suspected a security breach while using the system.	3.85	0.50	Strongly Agree
<i>Composite Mean</i>	<i>3.85</i>	<i>0.48</i>	<i>Strongly Agree</i>

Table 3.2 presents the respondents' perceptions of the security features of the LANDBANK eMDS system. Reflecting how users evaluate the platform's ability to safeguard their financial transactions and sensitive information. The table shows a high composite mean of 3.85 with a standard deviation of 0.48, which is verbally interpreted as Strongly Agree. This indicates that respondents express a high level of confidence in the security mechanisms of the eMDS platform. The clustering of responses in the "Strongly Agree" category demonstrates that users generally trust the system's capacity to protect data, enforce authentication, and prevent unauthorized access. This high level of agreement suggests that the security features of the platform play a vital role in shaping user satisfaction and continued adoption. Among the indicators, the highest-rated item pertains to the sufficiency of authentication measures, such as passwords and one-time passwords (OTP), which obtained a weighted mean of 4.00 with an exceptionally low standard deviation of 0.05. This reflects a strong and consistent belief that the technical safeguards implemented by LANDBANK are both effective and reliable. Respondents perceive these authentication tools as adequate in preventing unauthorized access and ensuring that only legitimate users can perform transactions. The high rating signifies users' strong trust in the system's preventive security measures and indicates that authentication protocols significantly contribute to their sense of online safety.

3 Accessibility of the Landbank eMDS

Statement	WM	SD	Verbal Interpretation
1. I can access the system anytime I need.	3.65	0.18	Strongly Agree
2. The system works well even with limited internet connection.	2.46	0.18	Disagree
3. The interface is easy to navigate for all users, including first time users.	3.46	0.61	Strongly Agree
4. The platform is compatible with different devices (desktop, mobile, tablet).	3.61	0.85	Strongly Agree

5. Assistance or help options (e.g., help desk, FAQs) are easily accessible within the platform.	3.03	0.32	Agree
<i>Composite Mean</i>	<i>3.24</i>	<i>0.43</i>	<i>Agree</i>

Table 3.3 presents users' perceptions of the accessibility of the LandBank eMDS platform, revealing generally positive feedback regarding the system's ease of access ($M = 3.24$, $SD = 0.43$), which corresponds to an overall interpretation of *Agree*. The highest-rated indicators highlight that users strongly believe the platform is available whenever needed, as shown by the very high weighted mean of 3.65 ($SD = 0.18$). Similarly, users expressed strong agreement that the eMDS can be accessed across multiple devices—including computers, tablets, and mobile phones—with another high mean score of 3.61 ($SD = 0.85$). The interface's navigability, especially beneficial for new users, also received a favorable evaluation ($WM = 3.46$, $SD = 0.61$), indicating that the platform offers a user-friendly environment that minimizes confusion and supports efficient task completion. Users rated this aspect poorly ($WM = 2.46$, $SD = 0.18$), showing that they often experience difficulty accessing or using the platform during periods of slow or unstable internet service. Meanwhile, help features such as FAQs and help desk support were viewed as moderately accessible ($WM = 3.03$, $SD = 0.32$), suggesting that while assistance is available, it may not always be immediate, comprehensive, or easy to locate.

Part 4: The strategies that could be implemented to improve system efficiency, security, and customer experience based on the feedback of users and bank personnel.

Table 4.a .*Improvements for the Landbank Electronic Modified Disbursement System*

	Frequency	Rank
Faster Transaction Processing	16	1
Enhanced Security Features	15	2
More User-Friendly Interface	10	3
Improved Customer Support	8	4

Table 4. a. presents the respondents suggested improvements for the Landbank eMDS. The highest ranked enhancement is faster transactions processing followed by enhanced security features. These responses revealed that while users are generally satisfied with system performance, they still recognize the need for improvements in terms of efficiency and usability. Faster processing reflects users' expectations for real-time digital transactions, especially in managing salary and government fund disbursement.

4.b. Recommendations to Enhance the LandBank Electronic Modified Disbursement System (eMDS)

The enhancement of the LandBank Electronic Modified Disbursement System (eMDS) should focus primarily on strengthening security features while simultaneously improving user experience and customer assistance. One of the key recommendations is the introduction of smarter login mechanisms designed to reduce unnecessary login repetitions that frustrate users. For instance, implementing session-based authentication or device recognition features could prevent frequent logout issues and minimize user inconvenience. Additionally, users expressed concerns regarding excessive OTP (One-Time Password) prompts, which often interrupt transaction flow and make the system less efficient. Reducing redundant OTP requests while still maintaining authentication integrity would greatly streamline the user experience. Another crucial recommendation is to diversify the system's security options beyond traditional OTP and password-based methods. Incorporating modern authentication technologies such as biometrics (fingerprint, facial recognition), behavioral analytics, or trusted

device verification would allow users to choose from multiple secure login options. Equally important is the improvement of customer support resources within the system. Users would benefit greatly from embedded video tutorials, interactive help menus, and easily accessible FAQ sections. In summary, enhancing the eMDS through smarter and more flexible security measures, reducing unnecessary authentication prompts, and integrating comprehensive learning resources would create a more secure, efficient, and user-friendly platform. These improvements not only address concerns raised by users but also align with best practices in digital banking, ultimately leading to increased satisfaction, trust, and long-term utilization of the system.

CONCLUSION

Based on the results and conclusions of the research, the investigators found the following:

Due to the results of the research, the following conclusions were drawn regarding the use of the eMDS system by its users: a) The users find the eMDS system very useful. They find it convenient, easy to use and access, reliable and faster as compared to manual methods. eMDS was preferred to manual methods for speed, security and convenience. b) The top three most used services were salary and subsidy disbursements, mass payments and transaction monitoring and reporting. It is clear that the system is a core operational tool through which faster and more secure electronic transactions can be made.

The most frequent operational challenges faced by eMDS users were delays in transaction processing. Other operational challenges were not frequent. Technical challenges faced by eMDS users were also not frequent. Most users agreed that technical challenges included delays or slowness in transaction processing.

The researcher concluded that the eMDS system saves time in completing financial transactions and helps to manage financial records. It also reduces paper work and helps in improving workflow and productivity. Users had high confidence in the security features of the system. They rated very high on the measures used in order to authenticate their identity and prevent unauthorized access to the system.

The investigators concluded that users agreed they can access the system whenever they need to, and that it works well across different devices.. However, the following improvements were suggested by users: processing transactions faster when using a limited internet connection. Other improvements suggested by users included more security, an easier-to-use system, and better customer support. Adding video tutorials and FAQs to the system was also suggested.

RECOMMENDATIONS

1. Landbank must enhance customer support and self-help through the inclusion of interactive learning modules such as step-by-step video instructions, complete FAQs, and chat assistance within the eMDS. The creation of a 24/7 helpdesk or chatbot feature is also suggested to provide immediate assistance and prevent users from having to physically travel to the bank to resolve their concerns. This will increase user confidence, promote digital literacy, and improve ease of use.
2. LandBank must upgrade its digital infrastructure to improve the speed at which transactions are processed. Such attention to system delays and latency will not only improve efficiency, but it will also keep users trusting and satisfied with the system. Faster speeds for transactions will also improve the day-to-day workflow and will promote wider use from agencies.
3. The researchers recommended that to address the existing operational and technological problems that LandBank should enhance the landbank system performance by upgrading the system server to handle more transactions faster. System maintenance and evaluation should also be done to ensure that the system is running smoothly and will not experience service interruptions especially during peak transactions. The researchers also recommended that a built-in feedback and reporting tool should be implemented in the landbank system platform so that the users will be able to immediately report the issues that they are experiencing or causing delays for immediate action. Continuous monitoring, performance testing and preventive maintenance should also be done to ensure smooth and efficient disbursement.

4. LandBank must continue to prioritize its commitment to efficiency and security by frequently updating its methods of authentication, such as providing biometric verification or single sign-on access, to improve security and efficiency. To increase accessibility, the system must be optimized for implementation in low-connectivity environments and across a variety of devices.
5. Results indicated that while the eMDS is accessible and user-friendly, challenges arise when users experience poor or intermittent internet connectivity. To alleviate this concern, Landbank could develop versions of the system that run lightweight or low-bandwidth versions that are still accessible in areas with poor connectivity. The development of an offline-ready feature that allows transactions to be queued and automatically processed when the system regains connectivity would also be beneficial.
6. For Future Researchers Future researchers are encouraged to expand this line of inquiry by conducting multi-site and comparative studies across different LANDBANK branches, regions, and institutional contexts to enhance the generalizability of findings and capture variations in system performance, infrastructure, and user experiences. Employing larger and more diverse samples using probability sampling techniques may further strengthen the representativeness and robustness of results. To enrich understanding beyond perception-based data, future studies may adopt mixed-methods or qualitative approaches, such as in-depth interviews, focus group discussions, or usability testing, to explore user experiences, system usability, and operational challenges in greater depth. Longitudinal research designs are also recommended to assess changes in user satisfaction, system efficiency, and security over time, particularly following system upgrades or policy reforms. Additionally, future researchers may integrate objective technical and performance indicators, such as transaction processing time, system uptime, and cybersecurity measures, to complement self-reported assessments. Examining the role of internet connectivity, digital literacy, and institutional support as moderating variables may further contribute to a more comprehensive evaluation of digital public financial management systems. These research directions can provide stronger empirical evidence to inform policy decisions, system optimization, and the sustainable advancement of digital banking services in both urban and rural settings.

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