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The Impact of Tablet Usage on CARD Bank's Productivity in Davao Region, Philippines

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Abstract

This study examines the impact of tablet adoption on microfinance operations at CARD Bank in the Davao Region, Philippines. Data from 165 Account Officers' survey responses and secondary sources from 2018 to 2023 were analyzed using a quantitative descriptive research design. Findings indicate a substantial productivity improvement, with most Account Officers reporting enhanced efficiency post-tablet adoption. Tablets streamlined fieldwork, reducing time spent on tasks like center meetings and boosting transaction volume handling and accuracy. Challenges included technical issues and connectivity problems, yet the benefits—such as faster loan processing and improved customer service—outweighed these obstacles. Significant increases in loan disbursement and savings mobilization quantities were observed after tablet integration. Statistical analysis using paired t-tests revealed a significant difference in average loan outstanding per client, emphasizing the positive impact of tablets on microfinance productivity. These insights contribute to understanding the strategic value of tablets in enhancing operational efficiency, customer service, and overall competitiveness within the microfinance industry.

Keywords

Productivity, Microfinance, CARD Bank, Tablet usage, Digitalization

INTRODUCTION

Integrating digital technologies in organizations offers a transformative opportunity for value creation and enhanced performance, as Matt, Hess, and Benlian (2015) highlighted. This shift is particularly crucial in industries like banking, where Sajic et al. (2018) emphasize adopting modern digital and mobile technologies to remain competitive. Banks that do not keep pace with these advancements risk losing ground to more digitally proficient companies. Therefore, embracing digitization is not just a strategic choice but a necessity for organizations aiming to thrive in today's rapidly evolving digital landscape.

Technological advancements have paved the way for innovation in various sectors, including microfinance. CARD Bank is at the forefront of this digital transformation in the Philippines. Founded in 1997, CARD Bank has become a top microfinance-oriented rural bank, serving over 4 million clients through its vast network of 100 branches and 838 micro-banking offices (CARD Bank, Inc., 2023).

In the past, CARD Bank's microfinance operations relied on traditional methods, using pen and paper for payment collection, savings management, and client insurance transactions. However, the bank has undergone a significant change by adopting digital tools, especially tablets, that are fully integrated into the bank's system.

Using tablets in financial operations offers numerous advantages, including real-time updates, convenient access to financial data, and the flexibility to conduct tasks from anywhere (AFI, 2018). This impact is exemplified by success stories such as in Kosovo, where the adoption of tablets led to a doubling of loan processing rates within microfinance operations (FINCA Canada, 2018). Additionally, digital tools are recognized for enhancing operational efficiency, broadening customer outreach, and extending services to rural areas at reduced costs (Moro-Visconti, 2021).

Transitioning traditional banks into modern digital institutions by integrating digital technologies enhances speed, security, and efficiency, benefiting both banks and their customers (Sajic et al., 2018).

Additional research underscores the positive correlation between advanced digitalization and higher GDP per capita, linked to increased labor force productivity (Androniceanu et al., 2020). Moreover, studies emphasize the symbiotic relationship between information technology and organizational strategy, exemplified by the value creation and competitive advantages observed in Iraqi banks (Adeniran et al., 2020). Financial innovation is also associated with banks taking more assertive risks and experiencing higher growth rates, ultimately enhancing credit provision and risk diversification for firms and households, thereby improving capital allocation efficiency and fostering economic growth (Beck et al., 2016).

The swift strategic change driven by digital finance has sparked improvements in efficiency in commercial banks, mainly through the innovative use of emerging technologies (Zuo et al., 2023). In this evolving environment, digitizing services is no longer just an option but a strategic necessity for microfinance institutions (AFI, 2018). PwC's analysis underscores the potential of using customer data and user-focused design to improve lending processes and increase revenue in microfinance institutions (PwC, 2023).

The impact of digital transformation on the productivity of microfinance operations in the Davao region remains a topic of investigation. While specific studies suggest a positive correlation between digital tool utilization and increased efficiency (Moro-Visconti, 2021; PwC, 2023; Dorfleitner et al., 2021), alternative perspectives caution against potential distractions that could impede productivity (AFI, 2018). Additionally, Starodubtseva et al. (2021) highlight the negative implications of digitalization, including heightened bank expenses related to technology implementation, staff training, data protection, and potential job displacement, which could adversely impact employment rates in the country.

Given these factors, this research aims to assess the impact of tablet utilization on the productivity of CARD Banks' microfinance operation, explicitly examining how tablets impact the fieldwork and productivity of Account Officers, focusing on areas such as loan portfolio management and savings mobilization. Additionally, the study will explore the benefits and challenges experienced by Account Officers in using tablets and assess the perceived impact on the competitiveness of CARD Bank and similar institutions. By analyzing elements such as time allocation, transaction volume, error rates, and operational efficiency metrics, this study aims to provide valuable insights that can guide CARD Bank in leveraging tablets effectively to enhance their operations and maintain competitiveness in the microfinance sector.

Examining these aspects not only adds to the current body of knowledge but also has practical significance for the microfinance industry and the broader field of information technology. It encourages informed choices and sustainable development in a quickly changing environment.

METHODOLOGY

This study employed a quantitative descriptive research design to assess the impact of tablet usage on CARD Bank's microfinance operation. The research utilized primary and secondary data sources to analyze comprehensively.

Primary data were collected through a structured survey questionnaire administered via Google Forms. The questionnaire aimed to gather insights and perspectives from Account Officers of CARD Bank, who are frontline staff directly involved in microfinance operations. These Account Officers were selected from various branches in the Davao region, including Davao, Matina, Tibungco, Malalag, Tagum, Nabunturan, and Mati. By including respondents from multiple branches, the study ensured a diverse representation of experiences and perspectives across different operational contexts within CARD Bank.

Meanwhile, secondary data were derived from the Data Control Center (DCC) of CARD Bank in San Pablo City, Laguna. These data covered the period from 2018 to 2023 and were used to evaluate the difference in the bank's output before and after the adoption of tablets. The secondary data served as a foundational component for assessing the long-term impact of technological integration on CARD Bank's performance indicators.

Quantitative data obtained from the survey questionnaire were subjected to descriptive statistical analysis. This involved computing frequency distributions and the mean to summarize the data. Statistical tests, such as paired t-tests, were conducted to compare productivity levels before and after tablet adoption. CARD Bank's performance indicators, including operating cost per client, borrowers per Account Officer, average outstanding loan size, and average deposit account balance per depositor served as benchmarks for assessing the impact of tablet adoption on productivity.

RESULTS

Descriptive statistics of respondents

A total of 165 Account Officers from the seven branches in Davao Region participated in the survey. This number constitutes 65% of the total Account Officers in the region.

Most respondents were women, comprising 67% of the total sample. This gender distribution reflects the demographic composition of CARD Bank's workforce in the Davao Region and underscores the significant role of female Account Officers in microfinance operations.

In terms of tenure with CARD Bank, 61% of the respondents reported having less than two years of experience with the organization. Despite this, all respondents had experienced the traditional pen-and-paper transaction, ensuring that their insights into the impact of tablet usage were informed by firsthand experience with both collection systems.

Educational attainment among the respondents was notably high, with 88% of respondents being college graduates. This level of educational attainment underscores the importance of skilled professionals in microfinance operations and suggests a strong foundation for understanding and utilizing digital technologies such as tablets.

Furthermore, the age distribution of respondents revealed that the majority, 54%, fell within the age range of 25-29, followed by 22% in the age range of 30-34. This distribution reflects the relatively young workforce within CARD Bank's microfinance operations in the Davao Region, highlighting the potential for technological adoption and innovation among younger professionals.

Impact on Productivity

The survey results indicate a significant positive impact of tablet adoption on the productivity of Account Officers within CARD Bank's microfinance operation in the Davao Region. A vast majority, 99% of the respondents, reported that tablet adoption had improved their productivity. Notably, 46% of respondents even claimed that this improvement was significant, highlighting the transformative effect of technological integration on their work efficiency and effectiveness.

Table 1 Perceived impact on productivity

Impact on productivity	Frequency
Improved productivity	52.7%
Significantly improved productivity	46.1%
Decreased productivity	0.6%
No significant change	0.6%

Furthermore, a substantial proportion of respondents, 81%, agreed that the use of tablets had multiple positive effects on their fieldwork. Specifically, they reported that tablets made their fieldwork more efficient, improved the speed of their transactions, enhanced the accuracy of their payment records, and increased their confidence in performing their tasks since the introduction of tablets. These findings underscore the multifaceted benefits of tablet adoption for Account Officers, ranging from streamlined processes to increased confidence in their work.

Table 2 Perceived impact on Account Officer's fieldwork

Statement	Agree	Neutral	Disagree
Using tablets for mobile payment collection has made	81%	10%	9%
fieldwork more efficient for me.	0170	1070	270
Tablets have improved the speed of mobile payment collection	79%	13%	8%
during fieldwork.	1970	13/0	670
The adoption of tablets has enhanced the accuracy of mobile	81%	12%	8%
payment records collected during fieldwork.	01/0		
Since the introduction of tablets, I have felt more confident	920/	10%	7%
conducting mobile payment transactions during fieldwork.	82%	10%	7%
Overall	81%	11%	8%

Effect on efficiency

The survey results highlight tablet adoption's significant impact on Account Officers' efficiency within CARD Bank's microfinance operation in the Davao Region. A substantial majority, 84% of the respondents, agreed that the use of tablets saves them time with their fieldwork compared to the traditional pen-and-paper method. They also reported that tablets enable them to complete their tasks more quickly and efficiently, allowing for more effective time management.

Table 3 Perceived impact on time allocation

Time allocation	Agree	Neutral	Disagree
Using tablets saves me time during fieldwork compared to traditional methods (collection sheets).	85%	10%	5%
Tablet usage allows me to complete fieldwork tasks (e.g., center meetings, CI/BI, membership recruitment) more quickly and efficiently.	81%	14%	5%
I find that I can manage my time more effectively when using tablets for fieldwork.	85%	11%	4%
Overall	84%	12%	5%

Moreover, a considerable proportion of respondents, 63%, claimed that they were able to save time with their center meetings by approximately 10-30 minutes. Additionally, 20% of respondents reported experiencing even greater time savings, exceeding 30 minutes. These findings suggest that tablets not only streamline fieldwork but also facilitate more efficient administrative tasks, such as meetings and documentation. Moreover, reduced time spent in meetings translates directly to increased productivity, as more time becomes available for essential tasks and activities.

Table 4 Amount of time saved in each center meeting

Amount of time saved in each center meeting	Frequency
<10 minutes in each center meeting.	17%
>10 minutes but <20 minutes in each center meeting.	33%
>20 minutes but <30 minutes in each center meeting.	30%
>30 minutes in each center meeting.	20%

In addition to time savings, the adoption of tablets was perceived to enhance transaction handling capabilities. A significant majority, 81% of the respondents, agreed that tablet adoption enabled them to handle a higher number of transactions compared to the manual method. They also reported being able to serve their clients in a shorter amount of time, reflecting improved service delivery efficiency.

Table 5 Perceived impact on transaction volume capacity

Statement	Agree	Neutral	Disagree
Tablets have increased the number of transactions I can process efficiently during fieldwork.	78%	16%	5%
I am able to handle a higher volume of transactions using tablets compared to manual methods.	81%	13%	6%
I find that I can serve more clients in a shorter amount of time with tablet usage during fieldwork.	83%	13%	4%
Overall	81%	14%	5%

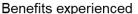
Furthermore, respondents highlighted the role of tablets in improving transaction accuracy and reducing errors. Seventy-four percent (74%) of Account Officers acknowledged that tablet adoption improves the accuracy of their transactions, leading to fewer mistakes. This finding underscores the importance of technological tools in enhancing data accuracy and integrity, ultimately contributing to improved operational efficiency and client satisfaction.

Table 6 Perceived impact on transaction accuracy

Table of citetives impact on transaction accuracy			
Statement	Agree	Neutral	Disagree
I find that I make fewer mistakes when using tablets compared to manual methods.	70%	24%	6%
Tablet usage has improved the accuracy and reliability of my work during fieldwork.	77%	18%	5%
I feel more confident in the accuracy of my fieldwork tasks when using tablets.	76%	19%	5%
Overall	74%	20%	5%

Benefits and challenges experienced from using tablets

Forty-nine percent (49%) of the Account Officers highlighted the notable benefit of increased transaction speed after adopting tablets, particularly in payment collection and loan processing. Additionally, respondents expressed that tablets facilitated easier execution of tasks, such as posting and inputting client information, aligning with earlier findings indicating time-saving advantages over traditional methods. Moreover, respondents reported experiencing specific benefits, including improved transaction accuracy (20%), enhanced customer service (17%), and increased efficiency in data collection (14%). These benefits underscore the multifaceted advantages of tablet integration in microfinance operations.



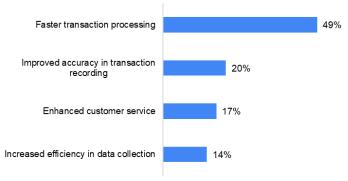


Fig. 1 Benefits experienced from using a tablet

However, despite the positive impact, Account Officers also encountered challenges in tablet usage. The most significant challenges reported were technical issues with tablet applications (64%) and connectivity problems (30%). These challenges were interrelated, as connectivity issues often resulted in malfunctioning applications, such as encountering errors during Loan Origination System (LOS) recommendation, login failures, and unsuccessful posting of collections.

Challenges experienced

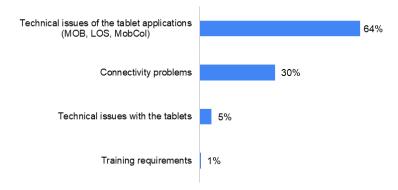


Fig. 2 Challenges experienced from using a tablet

Impact on loan portfolio

Figure 3 shows that 57% of Account Officers saw improvement in their loan portfolio quality following tablet adoption at CARD Bank's microfinance operations in the Davao Region, which underscores the positive impact of digital technology on loan processing efficiency and risk management. This improvement is attributed to the streamlined loan approval processes enabled by tablets, facilitating faster processing and easier monitoring of clients with outstanding payments. However, the finding that 33% of Account Officers observed no change in loan portfolio quality suggests that while tablets enhance operational efficiency, they may not directly influence clients' repayment behaviors. The small proportions indicating decreased quality (4%) or not applicable (6%) indicate overall positive outcomes from tablet adoption.

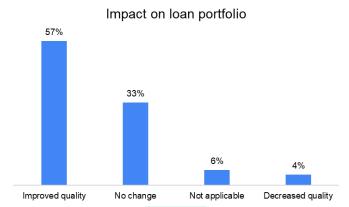


Fig. 3 Perceived impact of Account Officers on their loan portfolio

Table 7 presents the feedback from Account Officers on the impact of tablets on loan portfolio quality. Notably, the majority (59.6%) attribute the enhancement in loan portfolio quality to faster transaction processing and approval, reflecting the efficiency gains brought about by tablet technology in expediting lending operations. Additionally, the ease of monitoring (19.3%) suggests improved oversight and risk management capabilities. The reported increase in loan outstanding (5.3%) and improved repayment rates (3.5%) further substantiates the positive impact on financial performance. Tablets also facilitate faster payment collection (1.8%) and aid in identifying the purpose of members' loans (1.8%), enabling more targeted and effective loan management. Moreover, the time saved allows for immediate followups with delinquent members (1.8%), contributing to better loan recovery rates. These insights collectively highlight how tablets optimize loan portfolio management, driving efficiency and transparency and, ultimately, improving overall portfolio quality in microfinance operations.

Table 7 Account Officer's comments on tablet's impact on loan portfolio			
Why did the quality of your loan portfolio improve?	Count		
Transaction and approval are faster.	59.6%		
Monitoring becomes easier.	19.3%		
Loan outstanding increases.	5.3%		
The repayment rate has improved.	3.5%		
Payment collection is faster.	1.8%		
The purpose of the member's loan is easier to identify.	1.8%		
The time we saved enables us to conduct immediate follow-ups to those who failed	1.8%		
to pay their dues.			
Members find it more convenient.	1.8%		
CI is more convenient.	1.8%		
Better than the manual method.	1.8%		
More members can be catered.	1.8%		

Impact on loan release

The data revealed in Figure 4 illustrates that 84% of Account Officers experienced an increase in loan disbursement quantity following tablet adoption at CARD Bank's microfinance operations in the Davao Region. This finding highlights the substantial positive impact of digital technology on lending activities. This significant increase is attributed to the efficiencies gained from streamlined loan processing and approval facilitated by tablets, enabling Account Officers to handle more loan applications efficiently. The minimal proportions indicating no change (13%), decreased quantity (2%), or not applicable (1%) underscore the overall success of tablet integration in driving higher loan volumes.

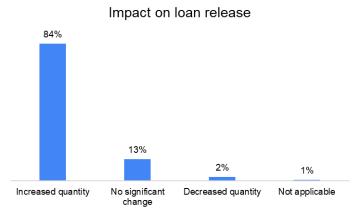


Fig. 4 Perceived impact of Account Officers on loan disbursement

The feedback from Account Officers regarding the impact of tablets on loan disbursement quantity aligns closely with the data presented in Table 8. The majority (53.0%) attribute the increase in loan disbursement to the faster processing and approval facilitated by tablet technology, reflecting streamlined lending processes. Additionally, the ease of generating loan applications (21.7%) and the ability to process more applications (12.0%) indicate enhanced operational efficiency and capacity. The transition away from manual transactions (4.8%) further contributes to increased productivity and throughput. Moreover, the reported improvements in customer service (1.2%) and the overall efficiency of tablet operations (2.4%) suggest broader benefits in service delivery and operational effectiveness. These insights underscore how tablets have positively transformed loan disbursement processes, resulting in higher volumes and improved efficiency in microfinance operations.

Table 8 Account Officer's comments on tablet's impact on loan disbursement

Why did the quantity of your loan disbursement i	Frequency	
Loan processing and approval is faster.		53.0%
Easy to generate loan applications.		21.7%
I can process more loan applications.		12.0%
Lesser manual transactions.		4.8%
Members are encouraged to avail of loans.		3.6%
It is more efficient.		2.4%
Customer service has improved.		1.2%
Easy to operate.		1.2%

Impact on savings

According to the survey findings, 64% of Account Officers perceived that the adoption of tablets has led to an increase in the quantity of savings among their clients. Conversely, 27% of Account Officers reported no significant change in their members' savings. Some indicated that savings remain withdrawable, and the adoption of tablets did not directly contribute to an increase in their income, thus resulting in no change in the amount of money saved.

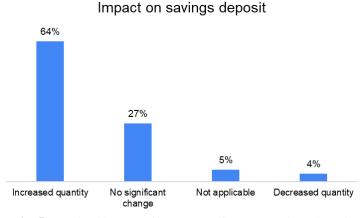


Fig. 5 Perceived impact of Account Officers on savings deposit

The data from Table 9 indicates several key factors contributing to the increase in savings mobilization attributed to tablet usage by Account Officers. The most frequently cited reason (25.0%) for the rise in savings quantity is the faster transaction processing facilitated by tablets, underscoring the efficiency gains in handling savings deposits. Additionally, the immediate posting of savings deposits (22.5%) and the ease of accessing members' savings information (15.0%) further support the observed increase in savings mobilization. Furthermore, the reported impact on member behavior, such as increased encouragement to save (10.0%) and enhanced trust (7.5%), suggests a positive influence on savings habits and overall engagement. The improvements in customer service (5.0%) and posting accuracy (5.0%) also contribute to a more seamless savings mobilization process. These findings from Table 9 highlight how tablets have effectively transformed savings deposit operations within microfinance institutions, resulting in higher quantities of savings mobilized driven by enhanced efficiency and member engagement.

Table 9 Account Officers comment on tablet's impact on savings deposit

Why did the quantity of your savings mobilized increase?	Frequency
Transaction is faster.	25.0%
Savings deposits are posted immediately.	22.5%
Savings information of members is easily accessed.	15.0%
Members are more encouraged to save.	10.0%
The trust of members increases.	7.5%
Improved customer service.	5.0%
Posting becomes more accurate.	5.0%
Processing of new members becomes easier.	5.0%
It is more convenient.	2.5%
Easier for members to withdraw their savings.	2.5%

Impact on competitiveness

The data from Table 10 underscores the significant positive impact of tablet usage on the perceived competitiveness and innovation of CARD Bank within the microfinance sector. The majority of respondents strongly agree that tablet adoption has positioned CARD Bank as a more innovative institution (79%) and has enhanced its ability to compete with other microfinance institutions (79%). Moreover, a large percentage of respondents (81%) believe that the adoption of tablets has allowed CARD Bank to offer unique services or features to clients, contributing to its reputation as a technologically advanced organization (81%). Additionally, the data indicates that clients perceive CARD Bank more positively due to its use of tablets in microfinance operations (79%). These findings highlight how tablet technology has played a pivotal role in boosting CARD Bank's competitiveness, fostering innovation, and enhancing its overall reputation within the microfinance industry.

 Table 10 Perceived impact on competitiveness and innovation

Statement	Agree	Neutral	Disagree
Tablet usage has positioned CARD Bank as a more innovative	79%	16%	5%
institution in the microfinance	1970	10%	370
Tablets have enhanced CARD Bank's ability to compete with	79%	15%	6%
other microfinance institutions.	1770		070
The adoption of tablets has allowed CARD Bank to offer	81%	15%	4%
unique services or features to clients.	0170	1370	170
Tablet usage has contributed to CARD Bank's reputation as a	81%	15%	4%
technologically advanced organization.	0170	15 70	1,0
Clients perceive CARD Bank more positively due to its use of	79%	16%	5%
tablets in microfinance operations.	, , , , 0	1370	270
Overall	80%	15%	5%

Impact on CARD Bank's Productivity

Using Jamovi software for statistical analysis, we conducted a paired t-test to examine the impact of tablet adoption on four key performance indicators within CARD Bank's microfinance operation. This analysis aimed to determine whether there were statistically significant differences before and after the integration of tablets.

The paired t-test results revealed a statistically significant difference in the average loan outstanding per client at the 5% significance level. This finding suggests that adopting tablets has impacted the average loan outstanding per client within the microfinance operation.

Moreover, the number of borrowers and the average savings per client exhibited potential statistical differences, albeit at the 10% significance level. Specifically, the number of borrowers showed a trend towards significance, while the average savings per client approached significance. Although these differences did not reach conventional levels of statistical significance (i.e., p < 0.05), they warrant further investigation and consideration within the context of tablet adoption.

Conversely, the analysis revealed that the average operating cost per client did not exhibit a statistically significant difference before and after tablet utilization. This suggests that while tablets may have impacted certain

aspects of microfinance operations, such as loan outstanding and borrower numbers, they did not significantly change operating costs per client.

Table 11 Paired t-test result

Variable	t-stat	df	p-value
Number of Borrowers	-2.35	6.00	0.057*
Ave. Loan Outstanding	-3.57	6.00	0.012**
Ave. Savings per Client	2.11	6.00	0.079*
Ave. Operating cost per client	1.85	6.00	0.114^{NS}

^{*} significant at 10%; ** significant at 5%; NS - not significant

Table 12 Normality Test (Shapiro-Wilk)

Variable	W	р
Number of Borrowers	0.849	0.121
Ave. Loan Outstanding	0.934	0.589
Ave. Savings per Client	0.895	0.300
Ave. Operating cost per client	0.968	0.883

Note: A low p-value suggests a violation of the assumption of normality.

DISCUSSION

The findings presented in this research study hold significant implications for understanding the impact of tablet utilization on the productivity of microfinance operations, specifically within CARD Bank in the Davao Region. The integration of digital technologies like tablets has become imperative for organizations, particularly in industries like banking, to enhance operational efficiency, customer service, and overall competitiveness.

The study's results underscore a clear and positive impact of tablet adoption on the productivity of Account Officers at CARD Bank. A significant majority of respondents reported enhanced efficiency, speed, and accuracy in their fieldwork and transaction-handling processes following the adoption of tablets. These findings corroborate Sajić et al.'s (2017) assertion that integrating digital technologies into traditional banking operations leads to improved speed, security, and efficiency.

Furthermore, the study emphasizes the comprehensive impact of tablet adoption on microfinance operations, encompassing loan portfolio management, savings mobilization, and overall competitiveness. Account Officers perceived tablets as pivotal in accelerating loan processing, enhancing transaction accuracy, and building customer trust, thereby fostering growth and innovation within CARD Bank's microfinance sector. This is supported by research conducted by Shabani et al. (2022) in Kosovo, which demonstrates the positive effects of digitalization on service quality and customer loyalty. Additionally, Pristiyono et al. (2022) highlight how banking digital transformation influences competitive advantage. Similarly, the study by Jeyalakshmi and Lakshmi Rani (2020) reveals that employees attribute significant reductions in workload, streamlined procedures, decreased errors and fraud, and overall performance improvements to digitalization. Furthermore, network issues emerged as the most commonly reported problem by respondents, aligning with one of the key challenges faced by CARD Bank's Account Officers highlighted in this study.

The findings strongly support the thesis that tablet utilization enhances the productivity and efficiency of microfinance operations at CARD Bank. The quantitative analysis, including paired t-tests on key performance indicators, reveals statistically significant differences post-tablet adoption, particularly in average loan outstanding per client. These results substantiate the thesis that technological integration, specifically tablet adoption, positively influences operational outcomes and contributes to the overall productivity of microfinance institutions.

Despite the valuable insights gained from this study, several limitations must be acknowledged. ("Enhancing TOEFL Performance and Student Motivation through ... - Hindawi") Firstly, the study's sample size, while representative of CARD Bank's Davao Region branches, may limit the generalizability of findings to other regions or microfinance institutions. Future research could benefit from larger, more diverse samples to enhance external validity. Secondly, the reliance on self-reported survey data introduces potential biases, such as respondent subjectivity and social desirability bias. Incorporating objective measures and qualitative assessments could provide a more comprehensive understanding of tablet impacts. Thirdly, the study primarily focused on Account Officers' perspectives and operational metrics, thereby constraining the scope and depth of analysis. Future research could explore broader organizational impacts, including customer outcomes, financial performance, and long-term sustainability, to offer a holistic view of tablet integration in microfinance. Lastly, the study's cross-sectional design limits the assessment of long-term effects and temporal trends associated with tablet adoption. Longitudinal studies would be beneficial in providing insights into the sustainability and evolving nature of tablet impacts over time. These considerations are pivotal for interpreting and contextualizing the study's findings effectively within the microfinance industry landscape.

CONCLUSION

This research demonstrates the transformative impact of tablet adoption on the productivity and efficiency of microfinance operations within CARD Bank's Davao Region branches. The study findings highlight significant improvements in Account Officers' fieldwork, transaction handling, loan processing speed, and overall service quality

following tablet integration. Despite encountering challenges like technical issues and connectivity problems, the benefits outweighed these obstacles, leading to enhanced customer service and increased transaction accuracy. The statistical analysis, particularly the paired t-tests, underscored a notable positive difference in average loan outstanding per client post-tablet adoption, emphasizing the tangible benefits of technological integration. These findings provide valuable insights for microfinance institutions aiming to leverage digital technologies to streamline operations, improve customer experiences, and remain competitive in rapidly evolving financial landscapes. Moving forward, continued exploration into the broader impacts of tablet adoption on organizational performance, customer outcomes, and long-term sustainability will be crucial for maximizing the strategic value of digital innovations in microfinance operations.

RECOMMENDATIONS

Based on the findings from the study on the impact of tablet utilization in CARD Bank's microfinance operations, several recommendations emerge to optimize the benefits of digital integration and address associated challenges:

- 1. Continuous Training and Support. Recognizing the importance of skill development and adaptation to digital tools, CARD Bank should implement ongoing training programs for Account Officers. These sessions should focus on enhancing tablet proficiency, troubleshooting common issues, and leveraging advanced features to maximize productivity.
- 2. *Iterative Technological Improvement*. To address specific challenges reported by Account Officers, such as application errors, CARD Bank should collaborate with software developers to refine and optimize tablet applications. Regular updates and iterative improvements can enhance usability and address usability concerns.
- 3. *Monitor Long-Term Impacts*. Conduct longitudinal studies to monitor the long-term impacts of tablet adoption on microfinance operations. This approach can provide insights into sustainability, scalability, and evolving needs, guiding future investment and strategic decisions.
- 4. *Evaluate Cost-Benefit Analysis*. Conduct a comprehensive cost-benefit analysis to assess the return on investment (ROI) of tablet integration. Evaluate operational efficiencies, cost savings, and customer outcomes to justify ongoing technological investments and prioritize resource allocation.

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DECLARATION OF CONFLICT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

- 1. ADB. (2018, September 18). *More Philippine rural banks, microfinance firms embrace digital technology for expansion*. Retrieved from www.adb.org: https://www.adb.org/news/features/philippine-rural-banks-microfinance-firms-digital-technology
- 2. Adeniran, A., Jadah, H., & Mohammed, N. (2020). IMPACT OF INFORMATION TECHNOLOGY ON STRATEGIC MANAGEMENT IN THE BANKING SECTOR OF IRAQ. *Insights into Regional Development*, 2(2), 592-601. doi:http://doi.org/10.9770/IRD.2020.2.2(7)
- 3. AFI. (2018). Digital Transformation of Microfinance and Digitization of Microfinance Services to Deepen Financial Inclusion in Africa. Kuala Lumpur, Malaysia: Alliance for Financial Inclusion.
- 4. Androniceanu, A.-M., Georgescu, I., Tvaronavičienė, M., & Androniceanu, A. (2020, August 21). Canonical Correlation Analysis and a New Composite Index on Digitalization and Labor Force in the Context of the Industrial Revolution 4.0. *Sustainability 2020, 12*. doi:https://doi.org/10.3390/su12176812
- 5. Beck, T., Chen, T., Lin, C., & Song, F. (2016). Financial innovation: The bright and the dark sides. *Journal of Banking and Finance*, 28-51. Retrieved from https://openaccess.city.ac.uk/id/eprint/15662/1/
- 6. CARD Bank, Inc. (2023, July). *CARD Bank At-A-Glance*. Retrieved from https://cardbankph.com: https://cardbankph.com/?page_id=350
- 7. Dorfleitner, G., Forcella, D., & Nguyen, Q. (2021). The digital transformation of microfinance institutions: an empirical analysis. *Journal of Applied Accounting Research*, *3*(2), 454-479. doi:https://doi.org/10.1108/JAAR-02-2021-0041
- 8. FINCA Canada. (2018, March 7). *Using Tablet Technology to Serve More Microfinance Clients*. Retrieved from https://finca.org/e.https://finca.org/en-ca/blog-en-ca/tablet-technology-microfinance
- 9. Jeyalakshmi, P. R., & Lakshmi Rani, A. S. (2020). The Impact of Digitalization on Employee Performance In Banking Sector. *Management Insight*, 15(1), 59-66. doi:https://doi.org/10.21844/mijia.15.1.8
- 10. Matt, C., Hess, T., & Benlian, a. (2015). Digital transformation strategies. *Business & Information System Engineering*, *57*, 339-343. doi:https://doi.org/10.1007/s12599-015-0401-5
- 11. Moro-Visconti, R. (2021). The Impact of Technology on Microfinance. In: MicroFinTech. Palgrave Macmillan, Cham.
- 12. Pristiyono, P., Juliana, J., & Prayoga, Y. (2022). Measuring customer trust through digital transformation of banking as a competitive advantage. *Jurnal Ekonomi Bisnis dan Kewirausahaan*, 11(2), 214-229. Retrieved from https://jurnal.untan.ac.id/index.php/JJ/article/view/51986
- 13. PwC. (2023). Next-gen microfinance: The role of digital technology. PricewaterhouseCoopers Private Limited.
- 14. Sajic, M., Bundalo, D., Bundalo, Z., & Pašalić, D. (2018). Digital technologies in transformation of classical retail bank into digital bank. 2017 25th Telecommunication Forum (TELFOR) (pp. 1-4). Belgrade, Serbia: IEEE.

- 15. Shabani, L., Behluli, A., Qerimi, F., Pula, F., & Dalloshi, P. (2022). The Effect of Digitalization on the Quality of Service and Customer Loyalty. *Emerging Science Journal*, *6*(6), 1274-1289. Retrieved from https://ijournalse.org/index.php/ESJ/article/view/1213
- 16. Starodubtseva, E., Grachyova, M., & Trachenko, M. (2021). Digitalization as a Driver of the Banking Sector. *Studies in Systems, Decision and Control*, 607–613. doi:https://doi.org/10.1007/978-3-030-56433-9_63.
- 17. Zuo, L., Li, H., & Xia, X. (2023). An Empirical Analysis of the Impact of Digital Finance on the Efficiency of Commercial Banks. *Sustainability*. doi:https://doi.org/10.3390/su15054667.

