Implementation and Effectiveness of the Cashless Banking System

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Abstract
This thesis analyses the implementation and effectiveness of the cashless banking system at Ecobank, focusing on various dimensions such as usability, stakeholder satisfaction, and customer perspectives. A mixed-methods approach was employed, incorporating quantitative and qualitative data from 25 participants to evaluate the system's performance. The analysis reveals that while the cashless banking system is generally well-received, particularly in ease of task completion and overall workflow improvements, there are notable challenges in usability, particularly with interface intuitiveness and performance during peak hours. Stakeholders and customers reported moderate satisfaction, with varying experiences regarding ease of use and reliability. The study concludes that although the cashless banking system has enhanced Ecobank's service delivery and met broad expectations, further user experience, system performance, and continuous evaluation mechanisms are necessary to optimise its effectiveness and customer satisfaction. Recommendations include focusing on user-centred design, improving scalability for peak demand periods, and establishing robust feedback loops for ongoing system refinement.

1.0 INTRODUCTION

In recent years, the global financial landscape has witnessed a significant shift towards cashless banking systems, driven by rapid advancements in digital technology, evolving customer preferences, and a push for greater financial inclusion. The cashless banking system, which allows individuals and businesses to conduct financial transactions without physical cash, has been embraced by many countries as a means to streamline operations, enhance transparency, reduce corruption, and increase the efficiency of financial transactions.

The move towards cashless banking has been significant in developing countries, where much of the population is unbanked or underbanked. By leveraging mobile banking, digital wallets, and other electronic payment platforms, cashless systems have provided an avenue for broader financial access. Governments, central banks, and financial institutions have played a crucial role in promoting cashless transactions through various policy initiatives, such as reducing cash handling fees, incentivising digital payments, and establishing national financial inclusion strategies.

However, while cashless banking offers numerous benefits, such as increased convenience, reduced costs, and better financial monitoring, it also comes with challenges. The effectiveness of the cashless banking system is often hindered by factors such as inadequate digital infrastructure, cybersecurity concerns, limited financial literacy, and resistance to change in certain regions. Moreover, there are concerns about data privacy and the exclusion of certain demographic groups who may not have access to the necessary digital tools.

This thesis seeks to analyse the data on the implementation and effectiveness of cashless banking systems. By examining key metrics such as transaction volumes, customer adoption rates, and the economic impact of cashless systems, this research aims to provide insights into the factors that influence the success of cashless banking initiatives. Additionally, it will explore the potential socioeconomic outcomes, such as increased financial inclusion, economic growth, and the reduction of illicit financial activities resulting from the adoption of cashless systems. Through a detailed analysis of quantitative and qualitative data, this study will contribute to a deeper understanding of how cashless banking systems are shaping the future of financial services globally.

2.0 MATERIALS AND METHODS

The shift towards a cashless banking system has gained significant attention from researchers, policymakers, and financial institutions over the past decade. Much of the literature highlights the benefits of cashless systems, particularly in enhancing financial inclusion, improving the efficiency of financial transactions, and reducing the costs associated with cash handling. For instance, Arango-Arango and Suárez-Ariza (2019) point out that digital payments reduce transaction costs, enhance convenience, and mitigate cash-related theft and loss risks. Similarly, Didenko (2018) emphasises that cashless transactions improve transparency and traceability, contributing to more effective financial regulation and reducing tax evasion and money laundering.

In terms of financial inclusion, many studies have noted that cashless banking systems can play a critical role in providing access to financial services for underbanked populations. Demirgüç-Kunt et al. (2018) argue that digital financial services, such as mobile banking and digital wallets, can reach individuals traditionally excluded from formal banking systems. This is particularly relevant in low-income countries with high mobile penetration but limited access to traditional banking infrastructure. Additionally, Chigada and Hirschfelder (2017) highlight that cashless banking enables governments to reduce the cost of distributing welfare payments and subsidies, further strengthening the case for its adoption.

Researchers also point to significant challenges in implementing cashless banking systems despite these advantages. Cybersecurity risks are one of the most frequently cited concerns. According to Ozili (2020), as more financial transactions move to digital platforms, the risk of cyberattacks and fraud increases, posing a threat to personal and financial data security. This is corroborated by Zalan and Toufaily (2017), who argue that a lack of adequate cybersecurity measures can undermine consumer confidence and hinder the adoption of cashless banking.

Another critical barrier the literature identifies is the digital divide, particularly in developing economies. Despite the proliferation of mobile devices, not all individuals have access to the technology or the digital literacy required to participate in a cashless economy. As Aker and Mbiti (2019) noted, limited infrastructure and uneven access to technology exacerbate existing

inequalities and may prevent certain demographic groups from benefiting from cashless banking systems.

The role of regulatory frameworks in facilitating the transition to cashless banking has also been extensively studied. Miedema et al. (2020) argue that governments and central banks play a critical role in shaping the success of cashless systems through the formulation of appropriate policies. These include setting transaction limits, ensuring the interoperability of digital payment platforms, and offering incentives for consumers and businesses to adopt cashless transactions. However, several studies, including that of Hasan, De Renzis, and Schmiedel (2013), have noted the need for regulatory bodies to balance encouraging innovation in digital payments and protecting consumers from potential risks.

Gap Analysis
While existing literature provides valuable insights into cashless banking systems' potential benefits and challenges, several gaps warrant further investigation. First, there is limited empirical research on the long-term socioeconomic impact of cashless systems, particularly regarding their effect on reducing poverty and promoting inclusive economic growth. Most studies have focused on short-term adoption metrics and the immediate benefits of cashless transactions, leaving a gap in understanding an entirely cashless economy's broader, long-term effects.

Moreover, while cybersecurity risks are frequently cited in the literature, few studies have comprehensively analysed the effectiveness of various cybersecurity measures in mitigating these risks. Research on how regulatory frameworks can be designed to enhance cybersecurity while promoting innovation is also lacking. Additionally, the digital divide remains an underexplored area in cashless banking. While the literature acknowledges the barriers posed by limited access to digital infrastructure, there is a gap in studies that offer actionable solutions for bridging this divide and ensuring that marginalised populations are not excluded from the benefits of cashless systems.

Another significant gap is the lack of comparative studies across different countries and regions. While some research has been conducted in high-income and developing countries, little data is available on the varying factors that influence the success of cashless banking systems in different contexts. A comparative analysis could provide valuable insights into the cultural, regulatory, and economic factors contributing to cashless systems' effectiveness.

Finally, the literature tends to focus more on the technical and operational aspects of cashless banking, with limited attention to consumer behaviour and attitudes. Understanding the psychological and sociocultural factors influencing individuals' willingness to adopt cashless systems is critical for designing effective policies and incentives promoting widespread adoption. Addressing these gaps will contribute to a more holistic understanding of the implementation and effectiveness of cashless banking systems, offering policymakers and financial institutions better strategies to promote financial inclusion, enhance economic growth, and safeguard consumers in an increasingly digital economy.

3.0 METHODOLOGY
The research on the implementation and effectiveness of the cashless banking system will employ a mixed-methods approach, combining both quantitative and qualitative data to provide a

comprehensive analysis. This approach offers a balanced understanding of the adoption rates, challenges, and socioeconomic impacts of cashless banking. The methodology is structured into the following stages:

3.1 Research Design
This study will use both descriptive and exploratory research designs. The descriptive aspect will quantify critical metrics related to the cashless banking system, such as transaction volumes, adoption rates, and demographic data of users. The exploratory component will focus on understanding individuals' and businesses' experiences, attitudes, and behaviours regarding cashless banking systems. The combination of these designs will allow the research to measure outcomes and explore underlying factors influencing the success and challenges of cashless banking.

3.2 Data Collection Methods
a. Quantitative Data Collection: The quantitative aspect of this research will focus on analysing data sets from central banks, government reports, financial institutions, and mobile payment service providers. The data collected will include:

- *Transaction Volumes:* Data on the number of cashless transactions (such as mobile payments, online banking, and card transactions) over a specific period, segmented by demographic factors such as age, income, and region.

- *Adoption Rates:* Data showing the rate at which consumers and businesses are adopting cashless payment methods across different regions and economic sectors.

- *Economic Impact:* Data on changes in economic activities such as GDP growth, financial inclusion, and reductions in cash handling costs in economies where cashless banking systems have been widely implemented.

Sources of quantitative data will include:
- Central bank publications.
- National financial inclusion reports.
- Reports from fintech companies and mobile payment service providers.
- Data from international organisations such as the World Bank and the International Monetary Fund (IMF).

Data from at least five years will be analysed to identify trends and patterns in cashless banking adoption and its economic impact.

b. Qualitative Data Collection: Qualitative data will be gathered through interviews and focus group discussions with key stakeholders in the banking and financial technology sectors, consumers, and businesses. The primary goal is to capture in-depth insights into the experiences, perceptions, and challenges of adopting cashless systems.

- *Interviews:* Semi-structured interviews will be conducted with policymakers, representatives from banks and fintech companies, and experts in financial inclusion to understand the policy frameworks, technological challenges, and regulatory concerns surrounding cashless banking systems.

o *Focus Groups:* Focus group discussions will be conducted with users of cashless banking systems, including both urban and rural populations, to explore their attitudes, concerns, and experiences in using digital payment systems. Particular emphasis will be placed on understanding barriers to adoption, such as trust, digital literacy, and infrastructure limitations.

3.3 Sampling Strategy

a. Quantitative Sampling: The quantitative data will focus on two regions: developed countries with well-established cashless banking systems and developing countries with emerging cashless banking. For the latter, a particular focus will be on African and Asian countries, where mobile banking and digital wallets drive financial inclusion. Countries will be selected based on criteria such as the level of cashless adoption, population size, and available data.

b. Qualitative Sampling: Participants for interviews and focus groups will be selected using purposive sampling to ensure representation from different segments of society. This will include:

o *Government officials:* Representatives from central banks, finance ministries, and regulatory bodies.

o *Financial institutions:* Key personnel from traditional banks, fintech companies, and payment platforms.

o *End-users:* Consumers, small businesses, and merchants from urban and rural areas who are either users or non-users of cashless banking systems.

To ensure a diverse range of perspectives is captured, approximately 20 to 25 interviews and 4 to 5 focus groups (with 6-8 participants each) will be conducted.

4.4 Data Analysis Methods

a. Quantitative Data Analysis: The quantitative data will be analysed using statistical tools such as SPSS or Stata to identify trends, relationships, and patterns. Descriptive statistics will be used to summarise the data. In contrast, inferential statistics such as regression analysis will explore the relationship between cashless banking adoption and various socioeconomic variables, such as income levels, financial inclusion, and GDP growth.

o *Trend Analysis:* To identify growth in cashless transaction volumes and adoption rates over time.

o *Correlation Analysis:* To examine the relationship between cashless adoption rates and improvements in financial inclusion, economic growth, and reduction in cash handling costs.

o *Comparative Analysis*: To compare the impact of cashless banking in developed versus developing countries or urban versus rural regions.

b. Qualitative Data Analysis: Qualitative data will be analysed using thematic analysis, where key themes and patterns will be identified from the interviews and focus group discussions. NVivo or another qualitative data analysis software will be used to code the transcripts and organise data based on recurring themes. The thematic analysis will focus on identifying:

o *Barriers to Adoption*: Trust issues, digital literacy, and infrastructure challenges.

o   *Consumer Behavior:* Understanding how different demographic groups (e.g., age, income, rural vs. urban) view and use cashless systems.

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o   *Regulatory Challenges:* Insights from policymakers and financial institutions regarding challenges in regulating cashless transactions.

4.5 Ethical Considerations

Ethical approval will be sought from the relevant authorities before the research is conducted. Informed consent will be obtained from all participants in interviews and focus groups, ensuring that they understand the purpose of the study and their rights as participants. Confidentiality and anonymity will be strictly maintained for all respondents. All quantitative data will be sourced from publicly available datasets, ensuring compliance with data protection regulations.

4.6 Limitations of the Study

Some limitations are anticipated in this research. Firstly, data availability and consistency across different countries may vary, especially in developing regions, potentially limiting the scope of quantitative analysis. Additionally, qualitative insights will be context-specific and may not fully capture diverse experiences in different regions. Finally, the evolving nature of cashless banking technologies means that findings may become outdated as innovations emerge. By adopting this mixed-methods approach, this study aims to provide a comprehensive understanding of the implementation and effectiveness of cashless banking systems, offering valuable insights for policymakers, financial institutions, and consumers.

4.0 RESULTS AND DISCUSSIONS

This section provides a detailed analysis of the data related to the implementation and effectiveness of Ecobank's cashless banking system. The analysis covers various dimensions, including demographic characteristics, usability, stakeholder satisfaction, and customer perspectives. By examining the mean scores and variability across these dimensions, the analysis aims to clearly understand how well the system performs and how different user groups perceive it. This insight is crucial for evaluating the system's success and identifying areas for potential improvement.

4.2 Demographic Characteristics

The sample comprises 25 participants, with a reasonably balanced gender distribution. The cumulative percentage for females is 52.0%, meaning females make up slightly more than half of the group. Males account for the remaining 48.0%, bringing the total to 100%. Most participants fall within the age group of 35-44 years. The cumulative percentage shows that by the age of 44, 96.0% of the participants are accounted for, with only a tiny portion (4.0%) falling within the older age bracket (45-54 years). Education levels are skewed towards higher qualifications. The cumulative percentage shows that 100% of the participants have at least a Bachelor's degree, with the majority holding a Master's degree. Experience distribution varies, with the largest group having 1-5 years of experience. The cumulative percentage shows that 92.0% of the participants have more than 1 year of experience, with 32.0% having over a decade of experience. Only a tiny portion (8.0%) has less than 1 year of experience.

The demographic analysis of the sample reveals a balanced representation of genders, with a slight majority of females. The participants predominantly belong to the 35-44 age group,

indicating that the sample comprises mid-career primarily professionals. Educational attainment is notably high, with the vast majority holding a Master's degree, reflecting a well-educated group. In terms of experience, most participants have between 1 to 5 years of work experience, though a significant proportion have over a decade of experience, highlighting a diverse range of professional backgrounds within the sample. The data indicates a highly educated and experienced group, predominantly in the middle of their careers.

Table 4.1 Demographic characteristic			
Item	Freq (n=25)	Per cent	Cumulative Percent
Gender			
Female	13	52.0	52.0
Male	12	48.0	100.0
Age			
25-34	5	20.0	20.0
35-44	19	76.0	96.0
45-54	1	4.0	100.0
Highest Level of Education			
Bachelor's Degree	6	24.0	24.0
Master's Degree	19	76.0	100.0
Years of Experience			
1-5 years	11	44.0	44.0
6-10 years	4	16.0	60.0
Above 10 years	8	32.0	92.0
Below 1 year	2	8.0	100.0

4.3 Usability of the cashless banking system
Ease of Use: The statement, "The cashless banking system is easy to use," received a high average rating with a mean score of 4.32. This suggests that most users find the system relatively easy to use. However, the standard deviation of 0.988 indicates some variability in responses, meaning that not all users share this perception to the same degree.

Interface Intuitiveness: The statement, "I find the interface of the cashless banking system intuitive," has a mean score of 3.80, lower than other items. This suggests that while some users find the interface intuitive, a significant portion do not. The standard deviation 1.323 is relatively high, indicating substantial variability in opinions on the interface's intuitiveness.

Navigability: The statement, "Navigating through the cashless banking system is straightforward," has a mean score of 3.88. This indicates that users generally find navigation acceptable, but there is room for improvement. The standard deviation of 0.881 suggests moderate consistency in user experiences.

Feature Organization: The statement, "The cashless banking system's features are well-organised," has a mean score of 3.96. This score indicates that users generally perceive the

system's features as well-organized. The standard deviation of 0.841 shows relatively consistent responses among users.

Task Completion: The statement, "I can easily complete my tasks using the cashless banking system," has a high mean score of 4.16. This suggests that most users can accomplish their tasks effectively using the system. The standard deviation of 0.943 indicates some variability, but users are generally optimistic about their task completion experience.

Composite Score: The composite mean score of 4.024 across all items suggests that, on average, users find the cashless banking system reasonably usable. The standard deviation of 0.9952 reflects moderate variation in user experiences across different usability aspects.

The data indicates that while users generally well-received the cashless banking system, with ease of use and task completion being particularly strong points, areas such as interface intuitiveness and navigability could benefit from further improvements to enhance the overall user experience.

Table 4.2 Mean Scores for Usability of Cashless Banking System					
Item	N	Min	Max	Mean	Std. Dev
The cashless banking system is easy to use.	25	2	5	4.32	.988
I find the interface of the cashless banking system intuitive.	25	1	5	3.80	1.323
Navigating through the cashless banking system is straightforward.	25	1	5	3.88	.881
The cashless banking system's features are well-organised.	25	2	5	3.96	.841
I can easily complete my tasks using the cashless banking system.	25	1	5	4.16	.943
Composite Score	25	1	5	4.024	0.9952

4.4 Impact of the cashless banking systems on the bank's operations as part of the Project Objectives

Satisfaction with Performance: The statement, "I am satisfied with the performance of the cashless banking system," received a high mean score of 4.20. This indicates that most users are satisfied with the system's performance. The standard deviation of 0.645 suggests a relatively consistent level of satisfaction among users.

Value to Bank's Operations: The statement, "I believe the cashless banking system has been a valuable addition to the bank's operations," has the highest mean score of 4.60. This indicates that users overwhelmingly view the system as a valuable asset to the bank. The standard deviation 0.500 reflects a strong consensus among users on this point.

Success of Implementation: The statement, "I consider the implementation of the cashless banking system a success for the bank," has a mean score of 4.32. This suggests that most users view the implementation as successful. The standard deviation 0.557 shows that this opinion is widely shared among the users.

Impact on Performance Targets: The statement, "The cashless banking system impacted your ability to meet your performance targets," has a lower mean score of 3.75. This indicates that while some users believe the system has positively impacted their ability to meet targets, others may not have experienced the same benefit. The standard deviation of 0.897 suggests a notable variation in user experiences regarding performance targets.

Reduction in Transaction Processing Time: The statement, "The cashless banking system has reduced transaction processing time," has a mean score of 4.16. This implies that most users perceive the system as effectively speeding up transaction processing. However, the standard deviation of 0.850 indicates some variability in user opinions.

Reduction in In-Person Customer Visits: The statement, "The cashless banking system has reduced the number of in-person customer visits," received a mean score of 3.84. This suggests that the system has had a moderate impact on reducing in-person visits, though the standard deviation of 1.068 indicates considerable variation in responses.

Impact on Daily Task Efficiency: The statement, "The cashless banking system affected the efficiency of your daily tasks," has a mean score of 3.68. This is one of the lower scores, indicating mixed opinions on whether the system has improved daily task efficiency. The standard deviation of 0.988 reflects a wide range of user experiences.

Reduction in Error Rate: The statement, "The cashless banking system has reduced the error rate in transaction processing," has a mean score of 3.80. This suggests that users generally believe the system helps reduce errors, though opinions vary, as indicated by the standard deviation of 0.913.

Impact on Overall Workflow: The statement, "The system has positively impacted the overall workflow in the bank," received a mean score of 4.12. This indicates that users generally agree that the system has improved workflow. The standard deviation of 0.726 suggests a moderate level of consistency in user responses.

Composite Score: The composite mean score of 4.052 across all items suggests that, on average, users perceive the cashless banking system to impact various aspects of the bank's operations positively. The standard deviation of 0.7938 indicates moderate variation in perceptions across different impact areas.

The data indicates that the cashless banking system is generally viewed as a valuable and successful addition to the bank's operations. Users are delighted with the system's performance and its positive impact on workflow and transaction processing time. However, there is some variability in opinions regarding its impact on daily task efficiency and error reduction, suggesting that these areas may require further attention for optimisation. Overall, the system is perceived as having a beneficial impact on the bank's operations.

Table 4.3 Mean Scores for the Impact of Cashless Banking System					
Item	N	Min	Max	Mean	Std. Dev
I am satisfied with the performance of the cashless banking system.	25	3	5	4.20	.645

I believe the cashless banking system has contributed to the bank's operations.	25	4	5	4.60	.500
I consider the implementation of the cashless banking system a success for the bank	25	3	5	4.32	.557
A cashless banking system impacts your ability to meet your performance targets	24	2	5	3.75	.897
A cashless banking system has reduced transaction processing time	25	2	5	4.16	.850
A cashless banking system has reduced the number of in-person customer visits	25	2	5	3.84	1.068
A cashless banking system affects the efficiency of your daily tasks	25	1	5	3.68	.988
The cashless banking system has reduced the error rate in transaction processing.	25	1	5	3.80	.913
The system has positively impacted the bank's overall workflow.	25	2	5	4.12	.726
Composite Score	25	2.22	5	4.052	0.7938

4.4 Stakeholder satisfaction regarding the implementation of the cashless banking system
Satisfaction with Ease of Use: The statement, "How satisfied are you with the ease of use of the cashless banking system?" received a mean score of 4.24. This indicates a high level of satisfaction among stakeholders regarding the system's ease of use. The low standard deviation of 0.597 suggests this positive perception is consistent across respondents.

Overall Reliability: The statement, "How would you rate the overall reliability of the cashless banking system?" has a mean score of 4.12. This suggests that stakeholders generally find the system reliable. The standard deviation of 0.600 reflects a similar consensus, with only slight variations in ratings.

Performance During Peak Hours: The statement, "How satisfied are you with the system's performance during peak hours?" has a lower mean score of 3.72. This suggests stakeholders have mixed opinions on the system's performance during high-demand periods. The standard deviation of 0.891 indicates a significant variation in experiences, with some stakeholders less satisfied than others.

Meeting Expectations: The statement, "The implementation of the cashless banking system has met my expectations," received a mean score of 4.04. This indicates that the system has generally met stakeholder expectations. The standard deviation 0.539 shows that this sentiment is broadly shared among respondents, with minimal disagreement.

Enhancement of Service Delivery: The statement, "The system has enhanced the bank's service delivery," has the highest mean score of 4.28. This suggests stakeholders strongly believe that the cashless banking system has improved the bank's ability to deliver services. The standard deviation of 0.614 indicates consistent agreement on this point.

Composite Score: The composite mean score of 4.08 across all items suggests that stakeholders are generally satisfied with various aspects of the cashless banking system. The standard deviation of 0.6482 indicates a moderate consistency in satisfaction levels across different criteria.

The data indicates that stakeholders are mainly satisfied with the cashless banking system, particularly in ease of use, reliability, and enhancement of the bank's service delivery. However, satisfaction with the system's performance during peak hours is somewhat lower, reflecting a potential area for improvement. Overall, the system appears to have met stakeholder expectations, positively impacting satisfaction levels.

Table 4.4 Mean Scores for Stakeholder Satisfaction of Cashless Banking System					
Item	N	Min	Max	Mean	Std. Dev
How satisfied are you with the ease of use of the cashless banking system?	25	3	5	4.24	.597
How would you rate the overall reliability of the cashless banking system?	25	3	5	4.12	.600
How satisfied are you with the system's performance during peak hours?	25	2	5	3.72	.891
The implementation of the cashless banking system has met my expectations.	25	3	5	4.04	.539
The system has enhanced the bank's service delivery.	25	3	5	4.28	.614
Composite Score	25	2.8	5	4.08	0.6482

4.5 Customer Perspective

Ease of Use: The statement, "The cashless banking system is easy to use," received a mean score of 2.80. This indicates that customers find the system moderately easy to use, but there is room for improvement. The high standard deviation of 1.643 suggests significant variation in customer experiences, with some finding it easier to use than others.

Interface Intuitiveness: The statement, "I find the interface of the cashless banking system intuitive," has a lower mean score of 2.40. This suggests that customers generally do not find the system's interface intuitive, indicating a need for improvements in design and user-friendliness. The standard deviation 1.342 shows that customers' opinions vary considerably.

Navigability: The statement, "Navigating through the cashless banking system is straightforward," has a mean score of 3.60. This is relatively higher than other items, suggesting that customers find navigation somewhat more accessible than other aspects of the system. However, the high standard deviation of 1.673 indicates a wide range of experiences, with some customers finding navigation straightforward while others do not.

Feature Organization: The statement, "The cashless banking system's features are well-organised," received a mean score of 2.80. Like ease of use, customers have mixed feelings about the organisation of the system's features. The standard deviation 1.304 suggests differing opinions, indicating that while some customers may find the features organised, others do not.

Task Completion: The statement, "I can easily complete my tasks using the cashless banking system," has the highest mean score of 4.00. This suggests that despite challenges with ease of use and interface intuitiveness, customers generally find it possible to complete tasks effectively using the system. However, the high standard deviation of 1.732 indicates that this experience is inconsistent across all users.

Composite Score: The composite mean score of 3.12 suggests that, on average, customers have a neutral to slightly positive perception of the system's usability. The standard deviation of 1.5388 reflects considerable variation in customer experiences, indicating that some customers may be satisfied with the system while others may find it more challenging.

The data indicates that customer satisfaction with the usability of the cashless banking system is mixed. While customers find it possible to complete tasks using the system, they generally struggle with ease of use, interface intuitiveness, and feature organisation. The wide variability in responses across all items suggests that the system may not consistently meet customer needs, highlighting areas for potential improvement in user experience and design.

Table 4.5 Mean Scores for Customer Perspective of Usability of Cashless Banking System					
Item	N	Min	Max	Mean	Std. Dev
The cashless banking system is easy to use.	5	1	4	2.80	1.643
I find the interface of the cashless banking system intuitive.	5	1	4	2.40	1.342
Navigating through the cashless banking system is straightforward.	5	1	5	3.60	1.673
The cashless banking system's features are well-organised.	5	1	4	2.80	1.304
I can quickly complete my tasks using the cashless banking system.	5	1	5	4.00	1.732
Composite Score	5	1	4.4	3.12	1.5388

4.6 Mean Scores for Customer Perspective for Stakeholder Satisfaction of Cashless Banking System Satisfaction with Ease of Use: The statement, "How satisfied are you with the ease of use of the cashless banking system?" received a mean score of 3.80. This suggests that customers are moderately satisfied with the system's ease of use. However, the high standard deviation of 1.643 indicates a wide range of satisfaction levels, with some customers being delighted and others not satisfied.

Overall Reliability: The statement, "How would you rate the overall reliability of the cashless banking system?" has a mean score of 3.60. This indicates that customers generally find the

system reliable, but there is room for improvement. The standard deviation 1.517 again points to significant variability in customer opinions on the system's reliability.

Performance During Peak Hours: The statement, "How satisfied are you with the system's performance during peak hours?" has a mean score of 3.20. This is the lowest score among the items, suggesting that customers are less satisfied with the system's performance during high-demand periods. The standard deviation of 1.483 reflects diverse experiences, with some customers finding the performance acceptable while others are less satisfied.

Meeting Expectations: The statement, "The implementation of the cashless banking system has met my expectations," received a relatively high mean score of 4.20. This indicates that the system has generally met customer expectations. The standard deviation of 1.095 shows that most customers agree with this statement, though there is some variation.

Enhancement of Service Delivery: The statement, "The system has enhanced the bank's service delivery," has the highest mean score of 4.60. This indicates that customers strongly believe the cashless banking system has improved the bank's service delivery. The low standard deviation of 0.548 suggests a high level of customer agreement on this point.

Composite Score: The composite mean score of 3.88 across all items suggests that, on average, customers are pretty satisfied with the cashless banking system regarding stakeholder satisfaction. The standard deviation 1.2572 indicates considerable variability in satisfaction levels across different criteria.

The data indicates that customers are generally satisfied with the cashless banking system, particularly its impact on the bank's service delivery and meeting their expectations. However, there is significant variability in satisfaction levels, particularly concerning ease of use, reliability, and performance during peak hours. These areas may require further attention to improve the overall customer experience and ensure consistent customer satisfaction.

Table 4.6 Mean Scores for Customer Perspective for Stakeholder Satisfaction of Cashless Banking System					
Item	N	Min	Max	Mean	Std. Dev
How satisfied are you with the ease of use of the cashless banking system?	5	1	5	3.80	1.643
How would you rate the overall reliability of the cashless banking system?	5	1	5	3.60	1.517
How satisfied are you with the system's performance during peak hours?	5	1	5	3.20	1.483
The implementation of the cashless banking system has met my expectations.	5	3	5	4.20	1.095
The system has enhanced the bank's service delivery.	5	4	5	4.60	.548
Composite Score	5	2	5	3.88	1.2572

4.7 Linking the Data Analysis to the Objectives
Objective 1: Extent of Application of the Project Management Phase of Initiation

The initiation phase involves defining the project's goals, objectives, and scope. The data from Table 4.6 (Customer Perspective on Stakeholder Satisfaction) suggests that implementing the cashless banking system has primarily met customer expectations, with a mean score of 4.20. This indicates that the initial goals and scope of the project were likely well-defined and communicated, aligning with the expectations of key stakeholders. However, mixed satisfaction with ease of use and reliability implies that some initial requirements may not have been fully addressed, highlighting areas for improvement in the initiation phase.

Objective 2: Extent of Application of the Project Management Phase of Planning
The planning phase outlines the project's execution, including resource allocation, timelines, and risk management. The variability in customer satisfaction, particularly in ease of use (mean score 3.80, Table 4.6) and system performance during peak hours (mean score 3.20), points to potential gaps in the planning phase. These issues suggest that while the system met overall expectations, more detailed planning could better address usability and performance challenges, particularly under high demand.

Objective 3: Extent of Application of the Project Management Phase of Execution
The execution phase involves implementing the project plan. The data from Table 4.5 (Customer Perspective on Usability) shows that while customers can complete their tasks using the system (mean score 4.00), there are significant issues with ease of use (mean score 2.80) and interface intuitiveness (mean score 2.40). This suggests that while the execution phase successfully delivered a functional system, there were shortcomings in ensuring a user-friendly experience, indicating that execution could have been more focused on usability testing and user-centred design.

Objective 4: Extent of Application of the Project Management Phase of Evaluation
The evaluation phase assesses whether the project outcomes align with the objectives and identifies areas for improvement. The composite scores from Table 4.6 (3.88) and Table 4.5 (3.12) suggest that the cashless banking system is moderately successful but has notable enhancement areas. The variability in customer satisfaction, especially in ease of use and system performance, highlights the need for a more thorough evaluation process to identify and address these issues post-implementation. Practical evaluation could guide further iterations and improvements to meet customer needs and expectations better.

The data analysis suggests that while Ecobank has made significant progress in implementing the cashless banking system, there are areas for improvement across all phases of project management. The initiation and execution phases successfully deliver a functional system that meets broad expectations. However, gaps in planning and evaluation, particularly regarding usability and performance, suggest that more detailed attention to these phases could further enhance the system's effectiveness and customer satisfaction.

5.0 CONCLUSIONS
This section presents a comprehensive summary, conclusions, and recommendations based on an analysis of Ecobank's cashless banking system implementation. The analysis evaluated various aspects of the system, including usability, performance, stakeholder satisfaction, and overall impact. The findings provide insights into the system's effectiveness, identify areas for improvement, and offer strategic recommendations for Ecobank and other organisations

implementing similar systems. The goal is to enhance the overall functionality and user experience of cashless banking systems, ensuring they effectively meet all stakeholders' needs.

5.1 Summary

The data analysis reveals that implementing the cashless banking system at Ecobank has had a generally positive impact. However, some vital areas require further attention across all phases of project management. The project met broad stakeholder expectations, indicating well-defined goals and scope. However, some usability challenges suggest that initial requirements may not have been fully captured or addressed. While the system functions as intended, customer satisfaction with ease of use and system reliability shows variability, highlighting potential gaps in the planning phase. Better planning could have preempted issues related to usability and peak-hour performance. The system was successfully implemented, allowing customers to complete their tasks. However, shortcomings in user experience, particularly in ease of use and interface design, suggest that execution could have been more focused on user-centred practices. The data indicates a moderate level of satisfaction with the system, but significant response variability points to a need for a more thorough evaluation. Post-implementation assessments could identify areas for improvement and guide future iterations to meet customer needs better. While the cashless banking system has met many objectives, refining the planning, execution, and evaluation phases will be critical for optimising its effectiveness and enhancing customer satisfaction.

5.2 Conclusions

Implementing the cashless banking system at Ecobank has shown positive outcomes, particularly in meeting stakeholder expectations and enhancing service delivery. However, several areas require attention. Despite the system's functionality, customers have reported ease of use and interface intuitiveness challenges. These issues suggest that the user experience was not optimised during the planning and execution phases, highlighting the need for a stronger focus on user-centred design and usability testing. Customer satisfaction with the system's performance during peak hours and overall reliability is mixed. This indicates that while the system is generally reliable, there are periods of high demand where performance may suffer, suggesting the need for better resource allocation and capacity planning. The system has successfully met stakeholders' expectations, indicating that the initial goals and scope of the project were well-defined and primarily achieved. However, some customers' unmet expectations point to areas where the project initiation phase could have been more comprehensive. The variability in customer satisfaction underscores the importance of continuous evaluation and improvement. Ongoing assessments can help identify issues that arise post-implementation and ensure that the system evolves to meet customer needs better. In conclusion, while the cashless banking system has been a valuable addition to Ecobank, addressing usability, performance, and evaluation gaps will be essential for sustaining and enhancing its success.

5.3 General Recommendations

Focus on improving the cashless banking system's ease of use and intuitiveness. Implement user-centred design principles, conduct comprehensive usability testing, and gather regular user feedback to identify and address usability issues. Address performance issues, especially during peak hours. Consider enhancing system capacity and scalability to ensure consistent performance under high demand. Regularly monitor and optimise system performance to meet varying user loads. Establish robust evaluation mechanisms to assess system performance and user satisfaction continuously. Implement feedback loops to promptly address issues and integrate findings into system updates and improvements.

5.3.1 Recommendations to Ecobank

Invest in detailed usability studies and user experience research to understand customer challenges. Use these insights to refine the system's interface and functionality to meet user needs better. Develop strategies to enhance the system's reliability, especially during high-traffic periods. This may involve upgrading infrastructure, increasing system redundancy, and optimising transaction processing times. Provide comprehensive training and support for users to help them navigate and utilise the system effectively. Consider creating user guides, video tutorials, and a responsive support team to assist with issues. Establish a continuous improvement program that reviews system performance, collects user feedback, and implements necessary updates to maintain high satisfaction levels.

5.3.2 Recommendations for Other Firms

When implementing new systems, prioritise user experience and interface design. Involve users early in the design process and gather feedback throughout development to ensure the system meets their needs effectively. Ensure systems are designed with scalability to handle varying loads and performance demands. Conduct stress testing and capacity planning to identify and address potential performance bottlenecks. Use agile methodologies for iterative development and frequent adjustments based on user feedback and performance data. This approach can help address issues promptly and improve overall system effectiveness. Provide thorough training and support to users to facilitate smooth adoption and effective use of new systems. Offer ongoing support and resources to address any challenges that arise.

5.3.3 Recommendations for Further Research

Conduct longitudinal studies to assess the long-term impacts of the cashless banking system on customer satisfaction and operational efficiency. This can provide insights into how the system performs over time and its sustained impact on users. Perform comparative analyses of different cashless banking systems to identify best practices and benchmark performance. This can help determine which features and approaches improve user satisfaction and system effectiveness. Investigate user behaviour and preferences to understand how different user groups interact with the system. This can reveal insights into different demographics' specific challenges and guide targeted improvements. Explore the broader impact of cashless banking systems on financial inclusion, transaction security, and customer behaviour. Research can help evaluate how these systems affect various aspects of banking and identify opportunities for enhancing their benefits. By implementing these recommendations, Ecobank and other firms can enhance the effectiveness of their cashless banking systems, improve user satisfaction, and achieve greater operational efficiency. Further research will provide valuable insights to guide ongoing improvements and innovations in the financial technology sector.

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