Digital Lending and Service Delivery Efficiency at KCB Bank Kenya Limited

***Angela Anyango Ngesa[1], Dr. Michael Makau[2], Dr. Wambui Ngigi[3]**

[1]Africa Nazarene University

[2,3]Lecturer, Africa Nazarene University

***Corresponding Author**

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ABSTRACT

With the rise of digital lending platforms, which enhance credit access for previously unbanked populations, concerns remain about issues like non-performing loans and regulatory oversight. This study examined the impact of digital lending on service-delivery efficiency at KCB Bank Kenya Limited. Specifically, it sought to assess the relationship between mobile lending platforms and digital customer onboarding and how they collectively affect service delivery efficiency at KCBs in Kenya. The study was grounded on the Technology Acceptance Model. It was guided by a descriptive design, and the target population consisted of employees of KCB bank in Nairobi County. To investigate the research aims, purposive, stratified, and simple random sampling methods were used to select a sample of 173 respondents. The number of respondents was determined using Fisher's formula. The data was collected using a structured questionnaire and an interview schedule. A pilot test was conducted among KCB banks in Nakuru County to assess the validity and reliability of the instruments. In addition, secondary data was collected from audited statements to enhance the primary data. Analysis was performed using SPSS Version 26, and multiple regression was used to test the hypotheses. Both descriptive and Inferential statistics were used in the analysis. The results show that mobile lending and digital customer onboarding affect the service delivery efficiency at KCB bank. The regression analysis revealed that digital lending had a strong positive correlation with service delivery at KCB bank ($r = 0.866$ and Adj. $R^2 = 0.742$; $P<0.05$). The study concluded that digital lending significantly affected the level of service delivery efficiency among commercial banks in Kenya. The model was a strong predictor of the relationship between digital lending and service delivery (F statistic = 103.326 and p value< 0.05). The study recommends that policymakers, commercial banks, and other stakeholders in the banking sector prioritize financial strategies such as improving the mobile banking platform in order to make it more inclusive and easier to use by the entire bankable population. This can be achieved by providing policymakers with a framework to design an effective digital lending system tailored for banking institutions.

Keywords: Digital Lending Platforms, Digital Customer Onboarding, Mobile Lending Platforms, Service Delivery Efficiency

INTRODUCTION

Service delivery efficiency is a critical performance indicator in the banking sector, encompassing the speed, accuracy, and overall quality of services provided to customers (Muriuki & Kithaka, 2021). Efficiency in service delivery refers to a bank's ability to meet customer demands in a timely and cost-effective manner, which directly influences customer satisfaction, retention, and overall operational success (Gikonyo & Ngahu, 2020). Given the competitive landscape in the financial industry, banks strive to enhance efficiency through innovative solutions, automation, and streamlined processes. As a dependent variable, service delivery efficiency constitutes various dimensions, including reduced transaction times, lowered operational costs, and increased transaction accuracy, all of which are essential in fostering positive customer experiences (Kiarie, 2022).

Within the context of banking, service delivery efficiency is often linked to improvements in technological integration, workflow management, and resource allocation (Mwangi & Kariuki, 2019). Efficient service delivery is crucial because it can directly influence a bank's ability to handle large transaction volumes and complex customer demands with minimal errors and delays (Kimathi & Ndung'u, 2021). Research highlights that efficiency is not merely a product of technological investment but also depends on effective management practices and staff competencies, which help enhance process flows and improve response times (Mutua & Muli, 2022). Thus, enhancing service delivery efficiency requires a multifaceted approach that includes leveraging digital solutions, optimizing workforce productivity, and continuously improving process methodologies.

Globally, banks have increasingly prioritized service delivery efficiency by adopting digital solutions, especially digital lending platforms, which help automate loan application, approval, and disbursement processes (Smith et al., 2020). Studies indicate that digital lending can reduce processing time by over 50%, allowing banks to serve more customers while reducing human errors and operational costs (Jones & Adams, 2021). Countries in Europe and Asia, for instance, have successfully integrated digital lending technologies, resulting in increased customer satisfaction and financial inclusion, especially for underserved populations (Patel & Kumar, 2023). Such technologies streamline operations and improve service delivery, positioning banks to meet the evolving needs of customers in a digital era (Taylor & Wang, 2022).

In Africa, service delivery efficiency remains a major challenge for banks due to infrastructural limitations, regulatory constraints, and resource shortages (Akinyi et al., 2021). However, the adoption of digital lending and mobile banking has contributed positively to improving service delivery efficiency across the continent, particularly in countries like Nigeria, South Africa, and Kenya (Okeke & Agyeman, 2020). Digital lending, in particular, has enhanced financial access for underserved communities, where traditional banking services were previously limited. Consequently, African banks that have embraced digital solutions report higher customer retention rates and operational efficiencies, although challenges related to internet penetration and digital literacy persist (Banda et al., 2023).

In Kenya, commercial banks have been quick to adopt digital lending as a strategy to improve service delivery efficiency, with KCB Bank Kenya Ltd leading in this regard (Wambua & Wafula, 2022). KCB's digital lending platform has enabled the bank to streamline loan processing, improve response times, and reduce transaction costs, thus enhancing overall customer satisfaction (Ndungu et al., 2023). According to Wekesa and Omondi (2023), the impact of digital lending on service delivery efficiency in Kenya is significant, as it enables faster loan processing, real-time access to financial services, and increased financial inclusion. Nevertheless, challenges related to regulatory compliance, data security, and customer education remain critical issues that affect the efficiency and scalability of these services in the Kenyan context (Chege & Mwangi, 2023).

Mobile lending platforms have emerged as a cornerstone of digital lending, providing customers with access to credit through mobile applications or SMS-based services (Muthee & Waweru, 2023). These platforms eliminate the need for physical branch visits, allowing customers to apply for and receive loans directly on their mobile devices, which is especially beneficial for customers in remote or rural areas. Mobile lending has made it easier for banks to serve a wider customer base, minimizing the logistical and time constraints associated with traditional lending processes (Kamau & Mwangi, 2021). The ease and speed of mobile lending contribute significantly to service delivery efficiency by reducing transaction times and increasing customer satisfaction (Mugendi & Kamande, 2023).

The integration of mobile lending platforms in commercial banking has revolutionized how banks approach loan processing and customer engagement. Studies have shown that mobile lending enables banks to process loan applications and disburse funds within minutes, which significantly enhances the customer experience (Muthee & Waweru, 2023). In addition, mobile lending platforms reduce the operational costs of lending by minimizing the need for physical infrastructure and human resources (Ndungu & Gikonyo, 2022). For banks, this translates into increased operational efficiency and reduced overhead costs, further supporting the bank's profitability and service effectiveness.

Digital customer onboarding is the process by which customers open accounts, verify their identities, and apply for loans entirely online, eliminating the need for in-person visits to bank branches (Olalekan, 2022). Digital

onboarding relies on technologies such as biometric verification, e-KYC protocols, and online documentation to streamline customer acquisition and enhance security (Kimani & Njeri, 2022). This process reduces onboarding time, allowing banks to expand their customer base quickly and cost-effectively, while also meeting regulatory compliance requirements (Wangari & Ndungu, 2022).

For banks, digital onboarding improves service delivery efficiency by accelerating the account setup process, reducing manual paperwork, and minimizing the risk of identity fraud (Otieno & Wafula, 2020). Customers benefit from a convenient and user-friendly experience, which enhances satisfaction and loyalty. Digital onboarding has proven particularly valuable in markets where customers demand seamless digital interactions, making it a vital component of competitive digital lending strategies (Jones & Smith, 2022).

Through digital onboarding, commercial banks can rapidly onboard new customers and expand their market presence without the costs associated with physical branches and manual processing (Mugendi & Kamande, 2023). By reducing onboarding time and simplifying the verification process, banks not only improve service delivery efficiency but also foster a more inclusive banking environment where individuals can access financial services with greater ease.

Service delivery efficiency in the financial sector refers to the ability of financial institutions to provide high-quality services to customers in the most cost-effective, timely, and accurate manner (Farrell & Smith, 2020). In today's highly competitive banking environment, improving service delivery efficiency is essential for maintaining customer satisfaction and loyalty. Digital transformation, particularly through innovations like digital lending, is seen as a critical driver of efficiency gains in the financial industry. According to Farrell and Smith (2020), the adoption of digital technologies allows banks to streamline operations, automate processes, and reduce operational costs, which, in turn, improves service quality. For financial institutions, digital lending is one of the key tools that enable faster loan processing and delivery, resulting in enhanced customer experience and overall operational performance (KPMG, 2021).

The role of digital lending in enhancing service delivery efficiency cannot be overstated. Digital lending platforms have revolutionized the way banks process and approve loans, significantly reducing the time and resources required for manual credit assessments. Studies by Walker and Brown (2020) show that by automating loan approval processes, digital lending platforms have enabled banks to process loans within minutes, compared to days or weeks using traditional methods. This rapid turnaround improves customer satisfaction while reducing the bank's operational costs. Additionally, digital lending has made it easier for banks to manage large volumes of transactions without compromising on accuracy, further contributing to improved service delivery efficiency (Mutinda, 2021). As a result, many financial institutions have adopted digital lending as a strategic tool for enhancing service quality and staying competitive in the market.

KCB Bank Kenya Limited

KCB Bank Kenya Limited is one of the leading financial institutions in East Africa, known for its strong commitment to innovation and financial inclusion (Omondi & Wafula, 2023). With operations across the East African region, KCB Bank serves a diverse customer base through retail, corporate, and microfinance banking services (Agarwal & Zhang, 2020). As a pioneer in adopting digital banking solutions, KCB Bank has introduced several initiatives, such as mobile and internet banking platforms, to enhance customer experience and expand access to financial services, particularly among Kenya's underserved populations (Kamau & Mwangi, 2021). These digital initiatives are part of KCB's broader strategy to enhance operational efficiency and provide services that are more convenient to its clients.

KCB Bank has played a critical role in driving financial inclusion through its innovative digital lending services. For instance, the KCB M-Pesa platform, launched in partnership with Safaricom, allows customers to access credit through their mobile phones, reaching individuals who previously lacked access to formal financial services (Muthee & Waweru, 2023). This service has been particularly impactful in rural areas, where access to traditional banking services is limited. By leveraging mobile technology, KCB Bank has reduced barriers to financial access, supporting economic empowerment and contributing to Kenya's overall economic growth

(Olalekan, 2022). The success of KCB M-Pesa underscores the bank's strategic focus on technology-driven solutions to enhance service delivery.

Statement of the Problem

Digital lending has significantly altered the financial landscape, particularly in emerging markets, by enhancing access to credit through mobile technology and online platforms. However, despite the evident growth and adoption of digital lending, the effects on service delivery efficiency remain a subject of debate. A need to explore the balance between the positive impacts of digital lending on service efficiency and the negative externalities it may introduce. For instance, while automated credit scoring models can speed up loan decisions, they may also result in decisions based on incomplete or biased data, potentially leading to financial exclusion (Nambie et al., 2024). Furthermore, the regulatory environment in many regions remains underdeveloped, which raises questions about the sustainability of these services and their long-term impact.

Conceptually, existing studies such as Nyaga & Karugu (2021); Mwangi & Kariuki, (2021) have highlighted digital lending as a variable in mobile banking aimed at credit expansion without adequately addressing its implications for customer service delivery efficiency, such as processing time, customer satisfaction, and operational responsiveness in well-established banks like KCB Bank Kenya Ltd. Kamau (2021) investigated the determinants of digital credit uptake in Kenya and its influence on borrowers' behavior, yet the study did not link digital lending to operational efficiency or customer satisfaction outcomes. Wachira, Kalui, and Gathii (2021) explored digital financial innovations and their effect on the performance of commercial banks in Kenya, but emphasized profitability indicators rather than customer service metrics such as processing time and responsiveness. A lack of a cohesive conceptual framework that links digital lending with efficiency outcomes in traditional banking operations further deepens this gap. Wathome (2020) examined the effects of digital credit on financial inclusion among Kenyan youth, offering insights on access to credit without addressing how digital lending affects service delivery within traditional banking structures. Hence, the need for this study is to use in depth cases study data to effectively explain the relationship between the digital lending concept and customer service in commercial banking.

Methodologically, most research on digital lending has relied on cross-sectional survey-based approaches or secondary data analysis (Wambua & Mugambi, 2020). Similarly, the target population and sample have been on all employees of the firm and not specifically the group that deals directly with the technology and the customers. Even with evolving technology, Descriptive methodology has been adopted to explain how the technology has affected the firm and the customers over a specified period. This shows a methodological gap that the current study seeks to fill. This study aims to address these empirical, conceptual, and methodological gaps by examining how digital lending influences service delivery efficiency in KCB Bank Kenya Limited. It provides a more comprehensive understanding of the benefits and challenges associated with integrating digital lending into the operational framework of Kenya's banking sector.

Objectives of the Study

The main objective of this study was to evaluate the effect of digital lending on service delivery efficiency at Kenya Commercial Bank in Kenya.

Specific Objectives

i. To determine the effect of mobile lending platforms on service delivery efficiency at KCB Bank Kenya Limited.

ii. To establish the effect of digital customer onboarding on service delivery efficiency at KCB Bank Kenya Limited.

Study Hypotheses

$H_0$1: There is no statistically significant relationship between mobile lending platforms and service delivery efficiency at KCB Bank Kenya Limited.

H_02: There is no statistically significant relationship between digital customer onboarding and service delivery efficiency at KCB Bank Kenya Limited.

THEORETICAL FRAMEWORK

Technology Acceptance Model (TAM)

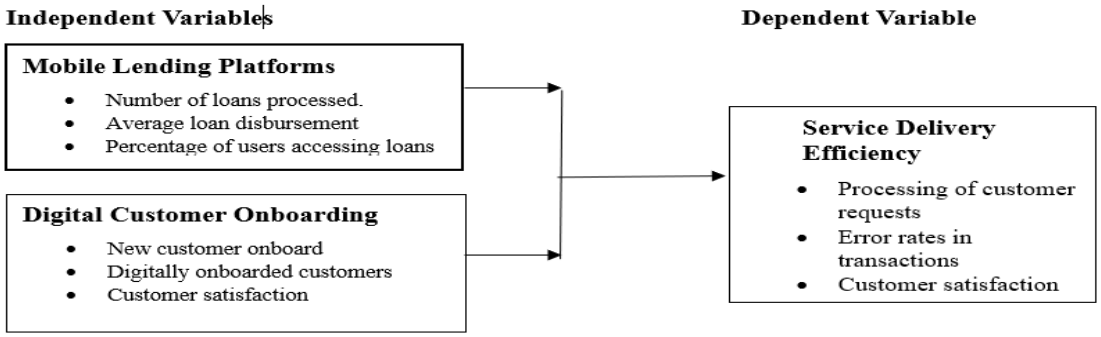
Several theories have emerged to explain IT adoption and usage, each emphasizing a different antecedent. The Technology Acceptance Model (TAM) is well known at individual levels. TAM forecasts technology use and acceptance in the workplace, focusing on perceived usefulness and ease of use. The Technology Acceptance Model (TAM), developed by Davis in 1989, is grounded in the Theory of Reasoned Action and has served extensively in assessing technology acceptance, especially within information systems (Davis, 1989). In this study, TAM provides a framework for evaluating digital lending platform adoption at KCB Bank Kenya Limited. By analyzing ease of use and perceived usefulness among KCB Bank users, this study sought to understand drivers of technology adoption and service delivery efficiency. However, this study also considered TAM's limitations by recognizing the potential influence of organizational and social factors on digital lending platform acceptance.

TAM has been used to evaluate the acceptance and usage of ATMs, mobile banking, and IB services in various studies, such as Abbad (2013) and Martins et al. (2014). However, contradictory results have been observed, particularly regarding their generalizability and comparability. Cultural differences, the validity of measures used, and the nature of specific technologies have also contributed to different outcomes. To address these issues, future research directions and needs should consider the inclusion of additional variables in TAMs Nistor, 2014; Scherer et al., 2019). This work added perceptions of trust (PT) and subjective norms (SN) to TAM to analyze their compatibility with the Cambodian context. Despite these expansions, TAMs have received little attention, highlighting the need for further research on TAM's effectiveness in assessing consumer trust and adoption of IB services.

The Technology Acceptance Model (TAM) is widely used in IS research, but it has limitations in studying mobile-based services. It is designed for organizational contexts, making it unsuitable for everyday life contexts, like digital banking. Additionally, users incur costs when transacting on the digital platform, which could significantly influence usage. Other variables influencing adoption are not present in TAM and should be considered. TAM is also limited in explaining various forms of technology, such as digital lending, which is a common innovation in mobile telephony.

Conceptual Framework

A conceptual framework is a graphical representation that illustrates the relationships among various variables within a study. It serves as a visual tool to explain how different concepts interact and influence one another, guiding the research by showing the key factors and their presumed connections.



Explanation of the Conceptual Framework

The conceptual framework illustrates the relationship between the independent variables: Mobile Lending Platforms and Digital Customer Onboarding, and the dependent variable: service delivery efficiency. Each of

these variables was expected to influence service delivery efficiency by improving various aspects of loan processing, customer satisfaction, and operational effectiveness.

Mobile lending platform measured in terms of the number of loan applications processed via mobile, the average loan disbursement time through mobile, and the percentage of users accessing loans via mobile devices. The figure shows a direct relationship that exists between the lending platform and the efficiency of the service to the customer. This helped in testing the first hypothesis, **$H_0$1**: There is no statistically significant relationship between mobile lending platforms and service delivery efficiency.

Regarding digital customer onboarding, measured in terms of average time taken to onboard a new customer, percentage of customers onboarded digitally, and customer satisfaction score with the onboarding process. The figure shows that there is a direct relationship between the independent variables and the dependent variable. The nature of this relationship was established by testing the hypothesis that **$H_0$2:** There is no statistically significant relationship between digital customer onboarding and service delivery efficiency.

These independent variables seem to have an effect on service delivery efficiency, which brought about faster processing times, improved accuracy, and higher customer satisfaction. By integrating digital technologies such as mobile lending platforms, automated credit scoring, loan automation, and digital onboarding, commercial banks can streamline operations and improve their service delivery models.

RESEARCH METHODOLOGY

Research Design

The focus of the study is on an explanatory and exploratory research design of descriptive design, which is suitable for capturing the views and opinions of the respondents on a specific phenomenon (Mugenda & Mugenda, 2019) and providing an explanation of the views and opinions collected from the respondents. This design is also suitable for answering questions that are related to what, where, when, and how. In this case, the study sought to explore how the adoption of digital lending platforms influences service delivery efficiency at KCB Bank Kenya Limited.

Target Population

The target population for this study consisted of all employees of KCB Bank Kenya Ltd operating in Nairobi County and had a direct interaction with the bank's digital lending platforms. The employee population included those working in the digital loans division and customer service departments, who numbered 700 according to the bank's 2022 annual report. The study focused on these two groups, as they were involved directly or indirectly with the digital lending process. Hence, their frequent interactions and direct involvement in managing the digital lending process allowed them to understand the process and the effect it had on the customers' level of satisfaction.

Sampling Procedure and Sample Size

To ensure a representative sample and avoid bias, the researcher employed a two-step approach. First, a stratified sampling technique is used to classify the respondents on specific characteristics, such as gender or department. Following this, the researcher utilized simple random sampling within each subgroup. This meant that individual employees were randomly chosen from each location group. The researcher picked a representative group from the department of digital lending and customer service; this was done randomly in order to ensure that each member of the group was included in the study.

In this study, the sampling frame consisted of all employees of KCB banks operating in Nairobi. Scholars like Kothari (2023) emphasized the importance of a sufficiently large sample size based on the population. This is because a larger sample helps to minimize sampling errors, which can significantly impact the reliability of the study's findings. To ensure this accuracy, this particular study determined the appropriate sample size by utilizing the established formula developed by Fisher. The obtained sample was 173 respondents

For this study, the inclusion of key informants representing 10% of the general respondents was justifiable based on the need for rich, qualitative insights to complement the quantitative data. While the general respondent sample (173 employees) would provide a broad overview of digital lending service delivery, key informants would offer specialized perspectives that could enhance the depth of the findings. By selecting approximately 10% of the respondents (about 17 individuals), the study focused on participants with deep knowledge of digital lending processes, enabling an exploration of complex factors. This approach aligned with the principle of triangulation, which enhances the validity of the research by combining multiple data sources and methods (Creswell & Plano Clark, 2018; Yin, 2018). In this study, the key informants were individuals from KCB Bank Kenya Ltd who possessed specialized knowledge and experience in the bank's digital lending operations.

Data Collection Instruments

In order to gather relevant data from a large sample of respondents, this study leveraged the strengths of survey research. Kothari (2023) highlights the suitability of questionnaires for such scenarios, particularly when anonymity is required. Similarly, Watson (2020) emphasizes their effectiveness in capturing data from busy individuals who can complete them at their own convenience. The study used questionnaires as the primary data collection instruments. Questionnaires were used to collect quantitative data from employees regarding their experiences with digital lending services, customer service efficiency, and satisfaction. The questionnaire consisted of both closed and open-ended questions to capture a broad range of responses. In order to assess the opinion and views of the respondent, a 5-point Likert was used, where 5 -strongly agree, and 1 - strongly disagree. Questionnaires are an ideal data collection tool for this research project. However, as outlined by Kim (2021), questionnaires can suffer from high non-response rates, necessitating diligent follow-up efforts. To mitigate this risk, 173 questionnaires were distributed to participants with a one-week turnaround time for collection and analysis.

Data Analysis

Data analysis was carried out using SPSS (Statistical Package for the Social Sciences) software. Descriptive data analysis (mean, frequency, and percentages, standard deviation) was done, and the results were presented using tables. Inferential statistics included derivation of correlation Analysis to test the relationship between the variables, computation of the analysis of Variance (ANOVA), which helped to test the effectiveness of the model. Regression analysis, where both simple linear regression and multiple regression were also computed. These were used to establish the relationship between the study variables and to test the formulated hypotheses. All the tests were done at 95% confidence level (that is, at a 5% level of significance). Regression analysis was used to determine the contribution of each independent variable to the dependent variable. The regression model for this study is expressed as:

Equation 1. Multiple Regression Model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

- Y = service delivery efficiency
- β_0 = constant term
- $\beta_1, \beta_2, \beta_3, \beta_4$ = regression coefficients
- X_1 = independent variables (Mobile Lending Platforms)
- X_2 = independent variables (automated credit scoring)
- X_3 = independent variables (loan disbursement and repayment automation)
- X_4 = independent variables (digital customer onboarding)

- ϵ = error term

However, before running the regression analysis, it was necessary to perform several diagnostic tests to ensure the reliability and validity of the regression model. These tests assessed the assumptions underlying linear regression and addressed potential issues that could affect the results.

RESEARCH FINDINGS

Descriptive analysis on Mobile Lending Platforms

The first objective of the study sought to determine the effect of the mobile lending platform at KCB bank. From the results, it is noted that most of the respondents (mean 2.62 and a standard deviation of 0.759) indicated that there was a high Percentage of customers who have adopted the use of the mobile lending platform in accessing bank services. Similarly, the low standard deviation of less than 1 shows a low variability in the data and hence consistency in the response. The data was noted to be normally distributed around the mean, given that the skewness value was -1.574, which was within the expected threshold of +2 and -2. This therefore implies that a good percentage of customers of KCB have adopted the use of mobile banking to affect their banking operations.

The results further show that, on average, the mean response (mean=2.07 with a standard deviation of 0.962) indicates that the high percentage of customers accessing mobile loans through the mobile lending platform has increased. The results also show that the low standard deviation of less than 1 shows a low variability in the data and hence consistency in the response. The data is also considered normally distributed based on the value of skewness -.141, which is between +2 and -2. This implies that most customers are now able to access the services of the bank through the mobile lending platform.

Regarding how the customers have rated the mobile lending platform in terms of time efficiency based on previous data, the results show that most customers have rated the mobile lending platform highly (mean = 2.36 and a standard deviation of = .875). This shows that customers have effectively embraced the mobile banking platform to enhance time efficiency and make the services better. Similarly, the low standard deviation of less than 1 shows a low variability in the data and hence consistency in the response. The skewness value =-.766, which is between +2 and -2, indicating that the data was normally distributed. The results imply that the mobile banking platform has enhanced service delivery at the bank through efficiency in time management.

The overall results show that most of the respondents' mean (Mean = 2.39 and standard deviation = 0.68) appreciate the mobile lending platform, and they indicated that it has helped improve services by reducing the time required to process loans and also the cost of operations. The low standard deviation of less than 1 shows a low variability in the data and hence consistency in the response. According to the banking staff mobile lending platform has enhanced service delivery to the customers, hence improving efficiency in the overall services at the bank. These results collaborate with the findings of other scholars such as Wamahiu (2024), Githaiga et al. (2022), and Mwaura and Kiragu (2019), who also noted that banks that have adopted a mobile banking platform have recorded an increased number of customers who are using the platform to access loans.

Descriptive analysis on the role of digital customer onboarding

The other objective of the study sought to assess the role of digital customer onboarding at the bank. The respondents were also required to rate, using a percentage or a scale, the various statements that defined the role of digital customer onboarding in service delivery. The results presented in Table 4.5 show that the majority of the respondents (mean =2.70 and a standard deviation = 0.570) indicated that the rate of frequency at which new customers are using the digital onboarding process has increased effectively. A low standard deviation of less than 1 shows a low variability in the data and hence consistency in the response. This shows that by adopting digital lending, there has been an increase in the number of customers and the frequency of use of the systems.

The study also established that the adoption of digital onboarding has reduced operational costs at the bank. This is as a result of the response obtained from the respondents, where the majority (mean =2.13 and standard deviation = .653). Similarly, the low standard deviation of less than 1 shows a low variability in the data and

hence consistency in the response. This indicates that the adoption of digital onboarding has an effect on the operational costs of the bank, and this leads to improved service.

The respondents were also supposed to rate whether the digital onboarding system has improved the customer base at the bank or not. The results have shown that the majority of the respondents (mean =2.16 and a standard deviation = .766) rated the statement at more than 40% improvement in customer base. The results also show that the low standard deviation of less than 1 shows a low variability in the data and hence consistency in the response. This implies that through the digital lending system, the bank has improved its customer base effectively.

The majority of the respondents (mean =2.33 and standard deviation =0.776) also agreed that the system has its challenges and that improvements need to be made to the digital onboarding system at KCB to enhance service delivery efficiency. The low standard deviation of less than 1 shows a low variability in the data and hence consistency in the response. This implies that though the system is seen to be very effective in improving service delivery at the bank, it has its drawbacks that need to be improved to enhance service delivery. On average, the study established that the majority (mean =2.35 and standard deviation =0.661) of the respondents highly rated the various statements that defined the relationship between digital customer onboarding and service delivery among the commercial banks. The low standard deviation of less than 1 implies a low variability in the data and hence consistency in the response. The results are similar to what was noted by other scholars such as Ochieng et al. (2020), Mwangi & Otieno (2021), and Ngugi & Ochieng (2021), who also established that a strong relationship exists between digital customer onboarding via digital lending and customer satisfaction in the bank.

Correlations analysis

The data underwent further analysis using Pearson's Correlation to determine the relationship between digital lending and service delivery efficiency among commercial banks. The results are presented in Table 1.

Table 1: Correlation Analysis between Digital Lending and Service Delivery

		MLP	ACS	SDE
Mobile Lending Platforms (MLP)	Pearson Correlation	1	.183*	.247**
	Sig. (2-tailed)		.029	.003
Digital Customer Onboarding (DCO)	Pearson Correlation	.314**	.424**	.721**
	Sig. (2-tailed)	.000	.000	.000
Service delivery efficiency (SDE)	Pearson Correlation	.247**	.740**	1
	Sig. (2-tailed)	.003	.000	

The results in Table 1 show that all the independent variables are linearly correlated with the service delivery efficiency of the bank. All four independent variables are seen to have a positive, statistically significant correlation with the dependent variables. From the table, it is noted that Mobile Lending Platforms have a moderate but very significant positive correlation ($r = .247^{**}$; $p = 0.003 < 0.05$), indicating that when the banks improve their mobile lending platform, service delivery to customers and vice versa. This implies that the banks need to effectively utilize the mobile lending platform to enhance service delivery for their customers. The findings are in support of Waweru and Mutua (2023), who also established a significant correlation between service delivery efficiency and mobile lending.

The results show that there is a strong, statistically significant, positive correlation ($r = .721^{**}$; $p = 0.000 < 0.05$) between Digital Customer Onboarding and service delivery efficiency among commercial banks. This implies that there is a need for banks to improve the digital onboarding system that is able to enhance service delivery

among the customers and hence improve their performance. All the predictor variables were determined to be statistically significant at the 0.01 level (2-tailed), suggesting that each aspect of digital lending under consideration plays a critical role in enhancing the service delivery efficiency among commercial banks in Kenya.

Multiple Regression Analysis for Digital Lending and Service Delivery Efficiency

The results of multiple regression analysis were computed to establish whether there is a statistically significant effect between the variables. The results were presented in Table 2.

Table 2: Model Summary of Digital Lending and Service Delivery Efficiency

Model	R	R Square	Adjusted R-Square	Std. Error of the Estimate
1	.866[a]	.750	.742	.22854

The results in Table 2 show a very strong, statistically significant correlation between digital lending and service delivery efficiency (r = 0.866, P value = 0.000 < 0.05). An adjusted R^2 of 0.742 indicates that the independent variables combined explain 75.0% of the digital lending and service delivery efficiency. These findings align with those of Garcia and Moroz (2020) and Ndungu and Kinyua (2022), who noted that a high level of digital lending significantly improves service delivery efficiency. Conversely, these findings differ from Kim (2022), who reported no significant impact of digital lending on service delivery efficiency.

Moreover, the study aimed to assess the overall model's significance. To achieve this, an ANOVA test for the overall model was rigorously conducted, and the comprehensive results are presented in Table 3.

Table 3: ANOVA[a] Digital Lending and Service Delivery Efficiency

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.588	1	21.588	103.326	.000[b]
	Residual	7.208	142	.052		
	Total	28.796	143			

The results in Table 3 indicate that the overall model was significant, i.e., the independent variables jointly were suitable explanatory variables for digital lending and service delivery efficiency in commercial banks in Kenya (F=103.326; P value = 0.000< 0.05). The overall null hypothesis that there is no statistically significant effect between digital lending and service delivery efficiency among commercial banks was rejected based on the F statistic and P value. This indicates that digital lending and service delivery efficiency are statistically correlated. And that the model is a good predictor of the relationship between the variables, this therefore confirms that the four independent variables defining digital lending (mobile lending platform and digital customer onboarding) significantly impact service delivery efficiency among the commercial banks.

To derive the regression equation for the model, a model coefficient was computed, incorporating the variables in line with established methodology (Amiri, Mottahedi, & Asadi, 2015). The results are presented in Table .4.

Table 4: Regression Coefficients of Digital Lending and Service Delivery Efficiency in Commercial Banks

Model		Unstd Coeff		Std Coeff	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.790	.227		-3.472	.001

	Mobile lending platforms	.663	.065	-.006	4.131	.006
	Digital customer onboarding	.647	.063	.499	10.223	.000

From the regression equation 4, it is established that by holding all independent variables (Mobile lending platforms and digital customer onboarding) constant, the service delivery efficiency will be -.79 units. The coefficients necessary to evaluate the influence of each independent variable on the dependent variable and to determine the statistical significance of the predictors within the regression model. Furthermore, the values under the Standardized Coefficients column indicate the relative strength and contribution of each predictor variable in explaining service delivery. Based on the results, the following regression model was developed.

$Y=-0.790+0.663\ X_1+0.647\ X_2+\epsilon$

Hypothesis Testing

The hypotheses (H_{01}–H_02) were tested using multiple regression analysis to assess the magnitude and significance of each predictor variable. The following null hypotheses were tested:

H_01: There is no statistically significant relationship between mobile lending platforms and service delivery efficiency at KCB Bank Kenya Limited.

H_02: There is no statistically significant relationship between digital customer onboarding and service delivery efficiency at KCB Bank Kenya Limited.

H_o1: There is no statistically significant relationship between mobile lending platforms and service delivery efficiency at KCB Bank Kenya Limited.

The results show that there is a statistically significant relationship between the mobile lending platform and service delivery. The regression table shows a positive and significant relationship between Mobile lending and service delivery efficiency for commercial banks. The regression equation also shows a positive but insignificant relationship between Mobile lending platforms and service delivery, supported by a coefficient of 0.663 (p-value=0.006<0.05). This implies that an increase in mobile lending platforms significantly improves service delivery efficiency in commercial banks. This shows that service delivery efficiency depends on other factors not discussed in this study. The null hypothesis (H_o1), therefore, is rejected, indicating that mobile lending platforms might improve efficiency in service delivery among commercial banks. The results agree with the findings of Gikonyo and Wangari (2020) and Kariuki and Mureithi (2023), who also noted in their study that mobile banking platforms were important for improving Service delivery among firms that aspire to use a mobile lending platform. H_{01}: There is no statistically significant relationship between digital customer onboarding and service delivery efficiency at KCB Bank Kenya Limited.

The results on regression model were presented. The results show that the model is a very good predictor of the relationship between digital onboarding and service delivery efficiency of commercial banks. Lastly, the results show that there is a positive. and a statistically significant relationship between digital customer onboarding and service delivery efficiency. The results show that the beta coefficient =0.647 with a p-value of 0.000< 0.05. This implies that a unit change in customer onboarding affects service delivery efficiency by 64.7%. This shows that banks have adopted digital lending, where customers are able to effectively use the system to improve service delivery. Therefore, the null hypothesis that H_02**:** was rejected and the alternative hypothesis accepted, meaning that there is a statistically significant relationship between digital onboarding and service delivery efficiency at KCB Bank. These findings are consistent with studies by Sharma and Ghosh (2021) and Nguyen and Vu (2022), who noted that a high level of digital financial services enhances service delivery among commercial banks. However, they differ from Kim (2022), who found no impact of digital financial services on service delivery.

CONCLUSION AND RECOMMENDATIONS

Conclusions

Based on the results, it is concluded that the digital lending platform at KCB Bank Kenya Limited has an influence on service delivery efficiency. These findings are supported by several past studies across global, African, and local contexts as well as the theoretical underpinnings of the study. The study found that a significant majority of respondents perceived mobile lending platforms as easy to use and efficient, which are key factors in promoting service delivery efficiency. Though the mobile lending platform was noted to have a negative coefficient with service delivery, indicating that its contribution to the model was not statistically significant, it was noted to be a very important aspect of digital lending in enhancing service delivery efficiency.

The study also concludes that digital customer onboarding and service delivery efficiency are statistically correlated and hence commercial banks that wish to improve their service delivery to customers in terms of lending need to adopt digital lending, where more customers can be able to use the platform in applying and servicing their loans.

In summary, the study concludes that digital lending has a very strong and statistically significant effect on service delivery efficiency. In addition to these conclusions, the study makes key contributions to both theory and practice. The findings advance our understanding of digital lending theories and models by demonstrating how various digital systems, including money lending platforms and customer onboarding, can collectively enhance service delivery efficiency among commercial banks in Kenya. These insights are essential for promoting economic participation and inclusivity, ultimately expanding the scope of operation in digital lending among the commercial banks.

Recommendation

In view of the conclusions, the study recommends several initiatives to enhance the impact of the digital lending platform on service delivery efficiency at KCB Bank Kenya Limited. Firstly, although Mobile Lending Platforms showed a significant effect on service delivery, stakeholders, including financial institutions and government bodies, should prioritize efforts to enhance the Mobile Lending Platforms through improved loan application procedures via mobile, reduce the loan disbursement time through mobile, and enhance the percentage of users accessing loans via mobile devices. Such initiatives would reduce entry barriers for customers and facilitate broader participation in the digital economy. The government would use these results in enhancing policy formulation in the digital lending platform on service delivery efficiency.

Finally, based on the results, it is recommended that digital Customer Onboarding, as an aspect of digital lending, helps to improve service delivery among the customers of the business. The results show that if commercial banks can be able to enhance average time taken to onboard a new customer, enhance rate at which customers are on boarded digitally for the banks services and enhance customer satisfaction score through the onboarding process, then there will be an improvement in the overall performance of the banks as a result of improved on boarding of new customers onto the system. The real-world implications of these recommendations are significant. Enhancing digital financial lending not only promotes the performance of commercial banks but also gives customers confidence in effective and efficient service delivery.

Contributions to knowledge and theory

The study findings provide a significant contribution to knowledge concerning digital lending and service delivery efficiency. The study was underpinned by the Technology Acceptance Model (TAM), Access to Financial Services Theory, Diffusion of Innovations Theory, the innovation-growth model, and the Financial Intermediation in explaining how new technologies spread within financial institutions. Empirically, the study expounds the evidence on the significant role of the four dimensions of digital lending among commercial banks in Kenya. This also expounds on the scope of the limited body of local studies that have assessed the effect of digital lending on service delivery in Kenya by providing data-driven insights from KCB Bank Kenya Limited. The significant positive effects of automated credit scoring and digital customer onboarding contrast with the

insignificant effects of mobile lending platforms and loan disbursement automation demonstrate the nuanced influence of different digital lending tools. Conceptually, the study developed a framework illustrating the interaction between digital lending variables and service delivery efficiency at KCB Bank Kenya Limited, offering a clear linkage between these variables, illustrating how specific aspects of digital lending interact to improve operational responsiveness, customer satisfaction, and processing time.

Suggested areas for further study

The study also established that digital lending improved service delivery efficiency at KCB Bank. It is therefore suggested that further study be conducted to focus on the customers in order to establish whether this could help explain the low contribution of mobile lending and loan disbursement and repayment noted at 0.9% and 0.1%, respectively. This would assist the policy makers and the managers to understand the main areas of focus while implementing digital lending strategies.

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