THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Digital Lending and Loan Portfolio of the Listed Commercial Banks in Kenya

Onyango Felix Ochieng
Postgraduate Student, Department of Accounting and Finance, Kenyatta University, Kenya
Dr. Salome M. Musau
Lecturer, Department of Accounting and Finance, Kenyatta University, Kenya

Abstract:
Digital lending has served to ease activities relating to the process of acquiring loans from various financial lending institutions in Kenya. Several concerns have been raised including the need to regulate the provision of digital loans to safeguard the banks from making losses and preventing customers from exploitation. Current studies have emphasized the effect of mobile lending on the Kenyan banks' financial performance. The study's general objective involved analyzing the effect of digital lending on the loan portfolio of the listed commercial banks. The project embraced a descriptive research design. The target population involved listed commercial Banks that embrace digital lending. The findings revealed that the length of digital lending had a favorable but statistically negligible influence on the loan portfolio of listed commercial banks. Also, the findings revealed that that the correlation between digital lending duration and amount of non-secured loans was positive and significant (r = 0.578, P = .000<.05). Also, the study underlined that digital lending costs (r = -0.622, P = .000<.05) had a negative and significant correlation with amount of non-secured loans.

Keywords: Unsecured loans, digital lending, loan portfolio, banks, financial technology, banking and financial institution act

1. Introduction

The development of technological innovations has led to changes in the financial lending sector. For instance, there has been an emergence of a new form of credit provision as underlined by digital lending which has embraced technological innovations to tap into the provision of digital products and service to the global digitized market (Wamalwa, Rugiri&Lauler, 2019). Digital lenders compete for the traditionally underserved and down-market customers(Accion Insights, 2018). According to Riasanow*et al.* (2018), the swift nature of the digital lending process is attractive to the users as it has negated the need to visit banking facilities to process loans.

Banks primarily aid in the development of the Fintech firms, given their financial support in cushioning the digital lenders in the course of their lending activities. Lending activities have both been complicated and controversial in equal measure. For instance, theyare concerned over the banks' continued losses due to increasing level of non-performing loans, while firms complain over the banks' high standards regarding lending (Kenya Bankers Association, 2019).The digital lending platform has ensured that borrowers do not have to access banks among other credit firms to process a loan as it does not require collateral. Banks have joined the increasingly attractive digital lending platform by availing loans to customers through both the mobile platform (Dermine, 2017). Moreover, the loan recovery process is digitalized, making it easier for the firms to track the repayment process. Different firms have set different loan durations depending on their policies.

Loan portfolio's value is dependent on both the interest rates and the likelihood that the principal and the interest rate will be paid. The World Bank survey (2012) outline that banks and other credit providers have delved into the provision of unsecured loans since it provides a sound growth strategy. Among banks, loan portfolio is fundamentally the most important asset as it is the primary source of income (Ngugi, 2017). Hence, loan portfolio management is critical as they address the prospect relating to overall performance and operational existence of banks. Digital lending has prompted banks to adjust their loan portfolio since they provide money to lending firms; for instance, in Kenya more than 27% of adult population has taken digital loans for diverse uses (Totolo, 2018). Several firms have since emerged to offer digital lending services, which include both the banks and non-banking institutions (Muthiora, 2015).

1.1. Statement of the Problem

Digital lending, which has a slow adoption rate in Kenyan market, has seen a tremendous growth since its inception as outlined by an increase in the number of people accessing unsecured loans (Gubbins&Totolo, 2018). The Kenya Bankers Association (2019) highlights those digital loans have increased the loan value held by banks. Unsecured loans pose several challenges given the relatively increasing trend of unsecured loan defaulters. For instance, the CBK

report (2020) underlined that more than 3.2 million people have been listed at the CRB for defaulting loans, a number that showed an increase from 2.7 and 1.8 million people in the year 2019 and 2018 respectively (Central Bank of Kenya, 2020).

The BFIA [Act No. 12/91: Sec 37(3-5)] prohibited banks from giving out unsecured loanslest they have undisputed approval of all the directors. Besides, the CBK should provide approval for the provision of the underscored loans. Nonetheless, CBK changed the clause as it allows banks to provide unsecured loans to customers (Saal, Starnes &Rehermann, 2017). Banks continue to embrace digital lending despite the challenges it poses, yet their profitability is critical for their existence. However, unsecured loans have underlying challenges relating to their repayment, recovery and default patterns among others, which have an effect on the overall loan portfolio of banks.

Several studies have been conducted locally regarding digital lending services. For instance, Oromo (2015) conducted a study to determine the nature of the relationship between loans issued by commercial banks and mobile money in Kenya. Further, Ngugi (2017) undertook a study to determine the effect that practices regarding mobile-based loan management have on Kenya's commercial banks' financial performance. The studies point at the fact that digital lending and loan portfolio has not been fully exploited. Therefore, this study seeks to address the gap through delving into determining the effect of digital lending on loan portfolio of listed commercial banks by considering challenges relating to the loan recovery, the default patterns and duration on the overall composition and performance of unsecured loans as part of the loan portfolio.

1.2. Research Objectives

The study's objectives include:
- To analyze the effect of digital lending duration on the loan portfolio of listed commercial banks in Kenya.
- To determine the effect of digital lending costs on the loan portfolio of listed commercial banks in Kenya.
- To analyze the effect of digital lending risk profiles on the loan portfolio of listed commercial banks in Kenya.

1.3. Research Hypotheses
- H_{01} Digital lending durations have no significant effect on the loan portfolio of listed commercial banks in Kenya.
- H_{02} Digital lending costs have no significant effect on the loan portfolio of listed commercial banks in Kenya.
- H_{03} Digital lending risk profiles have no significant effect on the loan portfolio of listed commercial banks in Kenya.

2. Literature Review

2.1. Digital Lending Duration and Loan Portfolio

Ngugi (November, 2017) studied the management practices of mobile loans and their impact on banks' financial performance. The survey used descriptive and inferential research design with 52 financial institutions forming the target population for the study. The survey underlined that credit scoring and the credit repayment period positively influenced the banks' financial performance. This sought to determine the effect of digital lending on loan portfolio of listed commercial banks in Kenya.

Anderson, Reynolds, and Klawitter (2018) undertook a study on Digital Credit Products in India, Kenya, Nigeria, Tanzania, and Uganda. The study highlighted that the emergence of digital lending services has led to the emergence of several firms providing service in different parts of the globe. Despite the increase in the number of MNOs, there is a similarity between the terms of service among the firms in Tanzania, Uganda, India and Kenya. The similarities underlined that there was an increase in the repayment duration for the loans as well as the unsecured nature of the loans offered for a significant fraction of the firms. Moreover, the review denotes that the emergence of internet borrowing has served to reduce the need for borrowers to visit banks regarding issues relating to overdrafts and other forms of cash advances.

Siabei (2019) conducted a study to determine mobile-based lending's influence on microfinance banks' performance within Nairobi County. The study adopted a correlational research design with a scope of one year (2019). The target population for the study involved 13 microfinance institutions. The findings underlined that loan disbursement process through mobile platform positively affects the performance of microfinance banks. Also, the findings highlighted that a strict loan repayment scheduled and related policies impacted the financial performance of commercial banks negatively in Kenya.

2.2. Digital Lending Costs and Loan Portfolio

Oromo (2015) studied the relationship between mobile money and loans issued by Kenya's commercial banks. The study embraced a descriptive research design with 43 commercial banks forming the target population. The study disclosed that the transaction value had a significant positive impact on the loans provided by commercial banks in Kenya. Moreover, the study denoted that deposits made as a result of mobile money positive effect on the loans provided by commercial banks.

Murunga (2018) studied the effect that mobile-based lending has, on the loans, been offered by banks, a study that delved on non-Performing loans within Nakuru Town. The study embraced a descriptive research design with commercial banks within Nakuru Town, forming the target population. The findings of the study underlined that banks have prioritized lending through the mobile platform. However, the survey revealed that mobile credits were primarily inconsequential to the commercial banks' NPL. Further, the findings underscored the fact that monitoring and evaluation process had an insignificant effect on the loans provided.

Kithinji (2018) studied the effects that mobile lending has on the quality of the loan portfolio of banks. The study based its objectives on the roles of credit information sharing, economic conditions, bank sizes as well as interest rates with regards to quality of loan portfolio. The results from the survey underlined that the interest rate impacted commercial banks' loan portfolio quality significantly. Also, the findings underlined that increase in interest rates, credit information sharing, economic conditions and bank sizes positively impacted the quality of loan portfolio of commercial banks.

2.3. Digital Lending Risk Profile and Loan Portfolio

Ndegwa (2014) studied the effects of mobile money on the non-performing loans of commercial banks in Kenya. The study embraced a descriptive research design with 43 commercial banks forming the target population for the study. The study revealed that mobile money is integral in the banking industry as it has led to a reduction intransaction costs and inherent risks relating to money handling. Also, the findings showcased the existence of a direct relationship between NPL and interest rates. For instance, a unit increase in interest rate led to a 3.189 units increase in NPL.

Wright *et al.* (2017) undertook a survey deducing the experiences of customers concerning digital credit in Kenya. The study revealed that digital lending was highly preferred due to the privacy it accords the users. Also, mobile lending has served to substitute the shop credits, loans from family members as well as money lenders. The study denoted that although a large number of people have opted to use digital lending platforms, there is an increase in the number of defaulters who have led to a rise in NPLs since most customers service multiple loans.

Gathergood, Guttman-Kenney and Hunt (2019) conducted a survey to determine the effect that payday loans have on the United Kingdom borrowers. The survey highlights that a large number of people, who use payday loans, often borrow from other multiple sources. The researchers underline that the UK market has a large number of internet lenders, an aspect that has led to a decline in the number of people who access payday loans. An increase in digital loans and the interest charged has played a significant role in increasing the customers' credit unworthiness and subsequent increase in non-performing loans.

3. Research Methodology

3.1. Research Design

A research design is a blueprint that is used in conducting a survey since it ensures maximum control is embraced over the factors that are likely to interfere with the validity of the results under consideration (Polit&Hungler, 1999). This study will embrace a descriptive research design. The design choice was attributable to the fact that it aids in describing the phenomena under consideration in the study without manipulating the information provided.

3.2. Target Population

A population denotes an entire group of objects or individuals or even events having common or similar observable characteristics (Mugenda&Mugenda, 2003). The target population for this study comprised ten listed commercial banks in Kenya which relate to the study's scope.

3.3. Sampling Design

According to Kothari (2004), a sample refers to selected respondents who are representative of the entire population. This study embraced a census sampling where all the listed commercial banks were considered.

3.4. Data Collection Instruments

The study used quantitative secondary data relating to the listed commercial banks. The secondary data were obtained from the NSE, CBK, and from the specific commercial banks' financial statements. Information such as the amount of unsecured loans, which was recorded but not availed to the public, was obtained by visiting the specific banks.

3.5. Data Analysis

The collected data was coded and tabulated according to the independent and dependent variable. This study used panel regression analysis since it takes into consideration the impact of time on the independent variables. Tests sought to ensure the model assumptions regarding the classical linear regression are not violated (Wooldridge, 2012). The tests undertaken included: multicollinearity, normality, heteroscedasticity, autocorrelation and the Hausman test. This study incorporated an empirical model that considered the three elements of the loan portfolio under consideration. The regression model involved:

$Y = B_0 + B_1X_{it} + B_2X_{2it} + B_3X_{3it} + \varepsilon$

Where:

Y- Unsecured loans

B_0- Constant

t = time

X_1- digital loan duration for bank i at time t.

X_2- cost of digital lending for bank i at time t.

X_3= Digital lending risk profile for bank i at a given time t.

ε = error term.

B_1, B_2, B_3 are the coefficients of variables X_1, X_2 and X_3 respectively.

3.6. Descriptive Analysis

Descriptive statistics are used to describe the main characteristics of the research data. They provide simple summaries of samples and actions. The specific descriptive statistics used in this study include: means, minimum, maximum and standard deviation. Descriptive analysis results are shown in Table 1.

	Non-Secured Loans	Digital Lending Duration	Digital Lending Costs	Digital Lending Risk Profiles
Mean	55048.76	35.28571	1.16	5218.821
Std. Dev.	30182.08	12.12512	0.148714	3643.854
Maximum	163451.1	60	1.4	20043
Minimum	18203.1	15	0.9	359.7
Observations	70	70	70	70

Table 1: Summary of Descriptive Statistics
Source: Researcher (2021)

The findings revealed that the listed banks' average annual amount of non-secured loans for the period from 2014-2020 was Kes 55, 048.76 M. The minimum value was Kes 18203.1 M and the maximum value was 163451.1 M. The average digital lending duration for the listed banks was 35 days, with the minimum duration being 15 days and maximum duration being 60 days. The average annual digital lending cost for the listed banks was 116%, with the minimum cost being 90% days and maximum cost being 140%. The average annual contribution of mobile loans to bad debt provisions for the listed banks was Kes 5,218.821 M. The minimum value was Kes359.7 M and the maximum value was 20, 043M.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Digital lending duration	2.19158	1.65416	1.32489	0.1898
Digital lending costs	-1.88	0.49041	-3.8335	0.0003
Digital lending risk profiles	-0.0871	0.08616	-1.0114	0.3155
C	13.4449	0.83404	16.1203	0.000
R-squared	0.27622			
Adjusted R-squared	0.24332			
F-statistic	8.39578			
Prob(F-statistic)	0.000083			

Table 2: Digital Lending and Loan Portfolio, Random-Effect Model
Source: Researcher (2021)

The statistical model was as follows:
Loan portfolio=13.4449 -1.88Digital lending costs.

The regression results in Table 2 show R squared and adjusted R squared values of 0.276 and 0.243, respectively. As a result, the modified coefficient of multiple determinations, which offers the explanatory power of the created statistical model, is 0.243. The finding correlated with Kithinji (2018) who contends that although interest rates play a vital role in determining the quality of a loan portfolio, there are various factors that impact mobile lending.

The results also show that the created statistical model had a strong fit for the observed set of data, with an F-statistic of 8.396 and a reported p value of 0.000083, which was less than.05 at the 95 percent level of confidence. These statistical findings indicated that the explanatory power of digital lending on loan portfolio was completely coincidental.

3.7. Effect of Digital Lending Duration on the Loan Portfolio of Listed Commercial Banks in Kenya

The output of regression analysis revealed that digital lending duration had a positive though statistically insignificant effect on loan portfolio (β= 2.19158, p=0.1898) at 5% level of significance. The implication is that increasing digital lending duration would result to increase in loan portfolio of listed commercial banks though minimally. The findings (p=0.1898>.05, the null hypothesis (H01) that digital lending durations have no significant effect on the loan portfolio of listed commercial banks in Kenya were not rejected. This suggested that digital lending duration insignificantly affect loan portfolio of listed commercial banks in Kenya.

The conclusions of the study agreed with those of Ngugi (2017) who indicated that credit repayment time favorably improved the financial performance of banks. Additionally, Siabei (2019) revealed that a strict loan repayment schedule impacted the financial performance of commercial banks negatively.

3.8. Effect of Digital Lending Costs on the Loan Portfolio of Listed Commercial Banks in Kenya

At the 5% level of significance, the results of the regression analysis revealed that digital lending expenses had a negative and statistically significant influence on loan portfolio (= -1.88, p=0.0003). The upshot is that raising digital lending expenses by one-unit results in a 1.88-unit decline in the loan portfolio of listed commercial banks. Based on the findings (p=0.0003<.05), the null hypothesis (H02) that digital lending costs have no significant effect on the loan portfolio of listed commercial banks in Kenya was rejected. This confirmed that digital lending costs significantly affect loan portfolio of listed commercial banks in Kenya.

The study findings contradicted Oromo's (2015) claim that transaction value has a favorable and considerable impact on loans given by Kenyan commercial banks. Further, Kithinji (2018) concluded that increase in interest rates positively impacted the quality of loan portfolio of commercial banks.

3.9. Effect of Digital Lending Risk Profiles on the Loan Portfolio of Listed Commercial Banks in Kenya

The output of regression analysis revealed that digital lending risk profiles had a negative though statistically insignificant effect on loan portfolio (β= -0.0871, p=0.3155) at 5% level of significance. Based on the findings (p=0.3155>.05), the null hypothesis (H03) that digital lending risk profiles have no significant effect on the loan portfolio of listed commercial banks in Kenya was not rejected. This suggested that digital lending risk profiles insignificantly affect loan portfolio of listed commercial banks in Kenya.The study's findings agreed with Ndegwa's (2014) discovery of a direct association between interest rates and NPLs. This suggested that increase in risk profile negatvely affected the quality of loan portfolio.

4. Summary

According to the findings of the regression study, the length of digital lending has a favorable but small effect on loan portfolio. As a result, digital lending duration has a beneficial, albeit minimal contribution to the loan portfolio of Kenya's listed commercial banks. According to the results of the regression study, digital lending charges have a negative and considerable impact on the loan portfolio. Also, digital lending risk profiles have a negative though insignificant effect on loan portfolio.

5. Recommendations

The study found out that digital lending duration has a positive effect on loan portfolio. The management of commercial banks should consider revising the digital lending duration to accommodate more customers, who would wish to borrow but are unable to make the repayment within the current lending duration. The management of the banks should also create a platform where customers can express or channel their views relating to digital lending duration. The management can then review the suggestions and make necessary policy adjustments.

6. References

i. Accion Insights. (2018). Demystifying Digital Lending. Accion Insights, 3-23.
ii. Anderson, C., Reynolds, T., &Klawitter, M. (2018). Review of Digital Credit Products in India, Kenya, Nigeria, Tanzania, and Uganda. Journal of Business Economics, 9(3), 1-21.
iii. Central Bank of Kenya. (2012). Annual Bank supervisory Report. Nairobi: Central Bank of Kenya.
iv. Central Bank of Kenya. (2018). Annual Bank Supervisory Report. Nairobi: Central Bank of Kenya.
v. Dermine, J. (2017). Digital disruption and bank lending. European Economy, 1(2), 63-76.
vi. Gathergood, J., Guttman-Kenney, B., & Hunt, S. (2019). How do payday loans affect borrowers? Evidence from the UK market. The Review of Financial Studies, 32(2), 496-523.
vii. Gichuki, J., &Jagongo, A. (2017). Electronic Banking and Accessibility of Financial Services in Commercial Banks: Theoretical and Empirical Literature Review.
viii. Gubbins, P.,&Totolo, E. (2018). Digital Credits in Kenya. Financial Sector Deepening-Kenya, 3-72.
ix. Kenya Bankers Association. (2019). State of the Banking Industry Report. Kenya Bankers Association Journal, 1-36.
x. Kithinji, N. L. (2018). Effect of Mobile Lending on the Quality of Bank Loan Portfolio: A Case of Selected Commercial Banks in Kenya (Doctoral Dissertation, School of Business, University Of Nairobi).
xi. Kothari, C. (2004). Research methodology: methods & techniques, 2nd edition. New age International Publishers, New Delhi, India.
xii. Mohajan, H., (2017). Two criteria for good measurement in research: validity and reliability. Annals of SpiruHaret University, 17(3), 58-82.
xiii. Mugenda, O. M., &Mugenda, A. G. (2003). Research Methods. Qualitative and quantitative approaches.
xiv. Murunga. D. L. (2018). Effect of Mobile-Based Lending Process on Non-Performing Loans in Commercial Banks in Nakuru Town, Kenya (Doctoral dissertation, JKUAT-COHRED).
xv. Muthiora, B. (2015). Enabling mobile money policies in Kenya: Fostering a digital financial revolution. GSMA Mobile Money for the Unbanked.
xvi. Ndegwa, Raphael. (2014). Effect of mobile money on non-performing loans of commercial banks in Kenya. MBA Project, University of Nairobi.
xvii. Ngugi, J. W. (2017). Mobile Based Loan Management Practices and Financial performance of Commercial Banks in Kenya. Nairobi: Kenyatta University.
xviii. Nzayisenga, A. (2017). Effect of Mobile Lending on the Financial Performance of Commercial Banks in Kenya. Nairobi: University of Nairobi.
xix. Oromo, M. A. (2015). The relationship between mobile money and loans issued by commercial banks in Kenya (Doctoral dissertation, University of Nairobi).
xx. Polit, F., &Hungler, B. (1999). Nursing Research: Principles and Methods (6th Ed.) Philadelphia: Lippincott press.
xxi. Reilly, F. K., & Brown, K. C. (2011). Investment analysis and portfolio management. Cengage Learning.

xxii.   Riasanow, T., Flötgen, R., Setzke, D., Böhm, M., &Krcmar, H. (2018). The Generic Ecosystem and Innovation Patterns of the Digital Transformation in the Financial Industry. In PACIS (p. 77).

xxiii. Saal, M., Starnes, S., &Rehermann, T. (2017). Digital financial services: Challenges and opportunities for emerging market banks (No. 118736, pp. 1-9). The World Bank.startups-by-region/

xxiv.   Siabei, R. (2019). Influence of Mobile-Based Lending on The Financial Performance of Microfinance Banks in Nairobi County, Kenya (Doctoral dissertation, Kabarak University).

xxv.   Totolo, E. (2018, April 3). Kenya's digital credit revolution 5 years on. Retrieved from Financial Sector Deepening: https://fsdkenya.org/blog/kenyas-digital-credit-revolution-5-years-on/

xxvi.   Wamalwa, P. Rugiri, I.,&Lauler, J. (2019). Digital Credit, Financial Literacy and Household Indebtedness. Kenyan Bankers Association, 1-44.

xxvii. World Bank Survey, 2012 unsecured credit in the mortgage market. World Development 2012: Building Institutions for Markets. Washington, DC: The World Bank/Oxford University Press. Report

xxviii. Wright, G., Bersudskaya, V., Nanjero, W., Mustafa, Z., &Wachira, M. (2017). Where Credit Is Due–Customer Experience of Digital Credit in Kenya. MicroSave, March, 22.