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Loan Remodelling and Financial Performance of Commercial Banks in Kenya

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Abstract

The implementation of loan remodelling for a bank particularly during a pandemic is aimed at providing favourable terms that allow borrowers to repay and enable the banks to avoid high rates of non-performing loans. This study's general objective was to examine the effect of loan remodelling on the financial performance of commercial banks in Kenya. The theories underpinning the study included Financial Intermediation, Innovation Diffusion, Credit Risk, Modern Portfolio, and Modern Monetary Theory. An explanatory research design was espoused in the study. The 36 commercial banks operating in Kenya constituted the target population. The study used a census approach by collecting data from all the banks operating in Kenya. The study used secondary data from the 2016 to 2021 period drawn from the financial statements of the banks. Data analysis included descriptive and inferential statistics. A panel linear regression model was developed and analysed using STATA. The study findings from the regression analysis showed that digital lending had a positive and significant effect on financial performance ($\beta = 0.0822$, p-value = 0.003), loan loss provision had a negative but non-significant effect on banks' profitability ($\beta = -0.0255$, p-value = 0.301) while business model adjustment had a positive but a non-significant effect on the financial performance of the banks in Kenya ($\beta = 0.0915$, p-value = 0.415) during the period under study. Based on these findings, commercial banks should employ technology and innovate more digital products, especially those that facilitate digital lending to enhance their profitability. Banks should continue provisioning for loan loss in compliance with International Financial Reporting Standards and caution against non-performing loans for the sustainability of their business operation. Banks should continue diversifying their investment portfolio and adjust their business model to a point that it would significantly impact their profitability, by creating more non-interest income opportunities. Finally, the Central Bank of Kenya should continue providing a regulatory framework geared towards facilitating lending and improving the profitability of banks.

Keywords: *Loan Remodeling, Digital Lending, Loan Loss Provision, Business Model Adjustment, Financial Performance*

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1.0 Background of the Study

The commercial performance of institutions, especially commercial banks is a critical phenomenon all over the world considering the significant role banks play in the economy. Banks ensure the stable provision of financial resources, secure investment funds for their clients, administer the distribution of credit and money and create credibility in the operationalization of currency-related frameworks (Horwitz, 2012). The performance of commercial banks is normally measured by their profitability. Profitability denotes the number of earnings that investors get about the total investment made, mostly shown by the rate of yield or the turnover gained from the entire investment efforts applied in the course of a business undertaking. Kao and Liu (2014) stated that profitability is the most important measure of performance by commercial banks because any business entity can earn more when compared to the overheads or expenses incurred in production and operation. In performing their role of financial intermediation, banks have the capacity and the scope of moving and allocating financial resources to investments that are productive in the economy. Commercial banks, therefore, have to look at profitability, liquidity and solvency as the principal guide for their day-to-day operations in the process of bridging this credit gap (Maonga, 2017).

The availability of more money in the hands of financial institutions to lend prompts them to lower the interest rates and encourage borrowing by individuals, investors and companies to expand their business activities in the economy (Svetlana, 2014). Therefore, commercial banks' financial performance is as important as the sustainability of the economic growth of a given country. Credit risk management is one of the fundamental concerns that lending institutions across the globe focus on when designing their business models. Commercial banks focus on credit remodeling because their profitability is a very critical aspect, which many stakeholders of any firm use as a factor to measure its viability. Consequently, lenders are under obligation to use both effort and resources in credit management to optimize returns on their assets (Ally, 2014). Loan remodeling refers to the process of reviewing the terms, conditions, structure and accessibility of a loan to make the borrower acquire and repay their financial obligations within a reasonable time (Biery, 2016). The objectives of credit management practices in financial institutions (commercial banks) can be specified as the conservation of its investment in borrowers and boosting of the working capital. The firm must therefore apply policies and procedures in credit issuance to clients, payment collection, and nonpayment risk limitation (Aketch, 2017).

A bank that can closely monitor and manage the bulk of credit and include strategies to collect credit in its credit policy has the potential of realizing monumental earnings through credit offers, which eventually leads to financial sustainability (Kenya Bankers Association report, 2021). Debt collection strategy such as restructuring the loan ensures that clients pay and lead to financial sustainability (Aketch, 2017). The implementation of loan remodeling by a financial institution as an endeavor to evade the incidences of bad credit is most often achievable by several measures including lowering interest arrears of the loan, decreasing interest rates of the loan, rescheduling credit period or spreading out credit, lowering principal arrears of the loan, creating more loan products, turning the credit into provisional capital contribution, deferment or rescheduling of the credit repayment period (grace period/ moratorium) and an amalgamation of loans among others (Svetlana, 2014). According to Ally (2014), asset quality contributes significantly to the performance of banks, a situation compelling these lending firms to incur a considerable financial cost to manage credit risk to optimize profits. The loan remodeling strategy thus enhances liquidity in a bank, brings down the cost of capital, minimizes risk, and eliminates loss of control as well as improving the value of shareholders. Additionally, financial institutions require investment portfolios to allow for

the legitimate use of the assets in a greater way for optimal creation of benefits (Ayre & Luciano, 2015).

According to Peiris et al. (2021), the output loss attributed to Covid-19 epidemic in the banking sectors across the globe in the year 2020-2021 stood at USD 9 trillion. It is the requirement of the government of the United Kingdom that banks should underwrite 20% of loans granted to long-term financially viable customers. Similarly, the Covid-19 virus has necessitated an in-depth remodeling of credit risk in many countries across the globe. In a survey by the European Investment Bank (EIB, 2021) approximately 50 per cent of banks in Africa were worried mostly about the value of their current assets while more than 20% of these institutions were most alarmed about the diminishing requests for loans and the increasing prevalence of the future lending risks in the market. Even though the financial sectors in Africa had exhibited incredible resilience and tenacity during the Covid-19 crisis with the emergency for liquidity in the banking sector being forestalled since the majority of financial institutions had adequate capitalization before the crisis in addition to the prompt response by policymakers to avert the crisis.

The upsurge in the volume of gross non-performing loans compared to the total loans in the year 2020 was primarily linked to the growing number of defaults as a result of the shock in the market (CBK, 2021). The default rate on loans went up by 29.6 per cent comparative to the 11.7 per cent upsurge in total loans. The average liquidity ratio of the banking sector at the end of 2020 was 54.5 per cent, higher that the 49.7 per cent recorded in the same period in 2019. Accordingly, this resulted in increased Loan Loss Provisioning in the finance industry to control risks in a proactive manner considering the hard economic circumstances. The NPL coverage rose to over 58 per cent in the first quarter of 2020 from 55.9% recorded in the same period in 2019. Moreover, the industry had projected growth in provisional requirements, which would further reduce profitability due to the coronavirus (CBK, 2020). The table below shows the profitability trends of financial institutions in Kenya for five years between 2016 and 2020;

Table 1*:* Financial Performance Trends of Commercial banks in Kenya

No.	Details	2016	2017	2018	2019	2020
1	Net interest income (Kshs. Billion)	264.5	245.3	253.3	259.2	289.3
2	Profit before tax (Kshs. Billion)	148.4	134.3	153.0	155.3	107.3
3	Return on Assets	4.0%	3.4%	3.5%	3.2%	2.0%

Source; (Kenya Bankers Association report, 2021)

1.1 Statement of the problem

Globally, the financial performance of banks acts as an essential measure of economic progress and prosperity of any country and is thus accorded much attention by governments and investors. Since commercial banks play the role of financial intermediation between investors and savers, their profitability is a positive signal of the health and productivity of the economy. Any interruptions in the economy such as war or natural calamities can interfere with savings

and investments thereby affecting the ability of commercial banks to issue credits consequently affecting their financial performance (Duong et al, 2020). This was evident during the 2008/2009 global recession that saw the closure of some banks and poor financial performance by many commercial banks as a result of reduced economic activity in the world (Andolfatto, 2015). The wake of Covid-19 also caused a shock in the banking industries worldwide leading to the poor financial performance of many banks with some recording lower profits while others getting losses.

The Kenya banking sector has gone through several transformations over the years including regulation, consolidation, asset quality management and capital conservation, all geared towards enhancing profitability in the sector (Cytonn, 2021). In the year 2016, an interest rate cap was introduced in Kenya that limited the amount of interest commercial banks were charging to 4 per cent above the CBK rate. This prompted the commercial banks to relook at their business model to survive in the market (Xinhua, 2017). According to CBK (2020), the finance sector in Kenya leapt into 2020 with higher expectations occasioned by the repealing of lending rate capping in 2019. During the first quarter of 2020 however, the Covid-19 pandemic landed in the country and transformed the discourse in the financial sector. According to the CBK banking circular No. 3 of 2020 to all commercial banks and mortgage finance companies, measures aimed at remodelling credit included guidance on the reorganization of loans and issuance of prolonged and rationalized loans to alleviate the likely adverse economic impacts of the virus as well as protect the integrity of the finance system.

The financial performance of commercial banks has been dwindling since 2016, after the interest rate cap, which was again compounded by the emergence of Covid-19 in 2020 (KBA, 2021). The return on assets of commercial banks has been dropping from 4.0% in 2016 to 3.4% in 2017 down to 3.2% in 2019. According to CBK (2021), the profitability in the finance sector also deteriorated in 2020 compared with 2019, which was attributed to the Covid-19 pandemic. The CBK report 2021 revealed that profit before tax for the industry dropped by 29.3% in 2020 compared to 2019. Since these banks act as the major credit source for both private and government domestic borrowing in Kenya, their sustenance is therefore very essential for supporting economic growth (Muthama, 2015). The provision of loans directly affects the profitability of commercial banks.

Aketch and Musoke (2021) conducted a study to assess how remodelling of loan recovery impacts the profitability of Ugandan Banks. The findings indicated that Stanbic bank's profitability was influenced by the remodelling of loan recovery. Duong, Phan, Hoang and Tien (2020) did a study to evaluate the impact of financial remodelling on the general profitability of Vietnamese banks. The outcomes of the research showed that remodelling bad debts to lower bad debts improved profits. In a study conducted by Waithaka and Kimencu (2018) to assess how remodelling approaches influence the performance of Kenya Commercial Bank, it was revealed that Business Model Adjustment, which is a portfolio restructuring strategy had a substantial and positive correlation with the bank's performance. A few studies have so far been conducted on loan remodelling and the financial performance of banks, especially in Kenya since the onset of the interest rate cap and the Covid-19 pandemic. This study thus explored the effect of Digital Lending, Loan Loss Provision, and Business Model Adjustment on financial performance by commercial banks in Kenya from 2016 to 2021 with a view to bridging the knowledge gap and informing loan remodelling policy in the Kenyan banking industry.

1.2 Objective of the study

To determine effect of loan remodelling and financial performance of commercial banks in Kenya

2.1 Theoretical Review

The section highlights the theories supporting the research variables, which include financial intermediation, Innovation diffusion, Credit risk, Modern portfolio Theory and Modern Monetary Theories.

2.1.1 Financial Intermediation Theory

It was advanced by Gurley and Shaw (1960) and advanced further by McKinnon and Shaw (1973). It states that banks are integral players in the financial sector by enabling reliable payment systems, marshalling savings, allocating credit and diversifying risks all geared toward economic development in a country. The financial intermediation theory draws its support from the information asymmetry and agency theories. Since there is information asymmetry in the monetary markets, financial institutions thus exist to bridge such market imperfection by eliminating the information gap, regulation, and transaction and transport costs when they link borrowers with lenders. On the other hand, the agency theory reiterates the importance of commercial banks because they act on behalf of those with resources (depositors) by lending to individuals and entities that require financial resources for investment in the economy.

This theory has however been criticized by the Arrow-Debreu traditional neoclassical theory, which argues that financial markets are perfect thus there is no need for financial intermediaries or middlemen. In the "Complete Markets Paradigm" advocated by the traditional Arrow Debreu model, borrowers (firms) and lenders (households) interact through markets in the resource allocation with financial intermediaries having no role to play. The intermediaries do not contribute to welfare improvement when markets are flawless since the allocation of resources takes the Pareto efficiency form. The financial intermediation theory nevertheless is significant because the financial market is not complete and perfect and therefore requires intermediaries to link borrowers and lenders. It implies that commercial banks should then be profitable to sustain their operation and remain in the market to act as agents of the depositors and minimize costs for investors. The theory has been applied in analyzing the significance of the financial performance of banks as a dependent variable that warranted investigation to inform policy decisions on ensuring that commercial banks remain profitable at all times.

2.1.2 Innovation Diffusion Theory (IDT)

The IDT was coined by Rogers (1962) and later advanced in 1995 as one of the technological models describing the process by which firms embrace innovations in their operations. Rogers defined innovation as a practice, an object, a product or an idea considered new by the adopting units or an individual while diffusion is defined as the process of communicating such a new way of doing things through certain channels for a specific period among a particular social system of people. Based on the conceptualization of innovation and diffusion, this theory, therefore, aims at explaining how commercial banks and other institutions can adopt new ideas and concepts on a large scale to make their service delivery better. The IDT reiterates that compatibility, complexity, relative advantage, observe-ability and trial-ability are the attributes linked with technological innovations that can affect the adoption rate by firms and individuals (Rogers, 1995).

The theory advocates for efficiency in operation and diversification of products that can lead to sustainable financial performance. However, its critics reiterate that the theory does not consider a participatory approach in adoption, only works better with the diffusion of behavior rather than prevention and it does not consider the availability of resources or social support for the adoption of an innovation (Wayne, 2019). This theory was significant in this research because it reinforced the significance of banks applying new technology to enhance their services and to create new platforms where they can engage with their customers at a lower cost for the improvement of profitability. It was used to analyze the Digital Lending variable in the study.

2.1.3 Credit Risk Theory

The CRT was presented by Melton in 1974 as a theory explaining the loan default phenomena by borrowers. It explains that any non-payment occurrence emanates from the development of a company's asset modelled by a transmission process with constant factors. Accordingly, any loan defaulting is viewed as a put option, which borrowers can exercise anytime whenever the economic situation can attract them to do so. So far, only three quantitative approaches have been qualified in analysing credit risk, which include the incomplete information approach, structural approach and reduced form appraisal. The changes resulting from these categories of analysis are denoted by a set of models where the loss emanates from factors outside the control of the firm. CRTs application is anchored in the fact that banks must factor in the borrower's capacity to repay before issuing a loan and in the event of a change in the circumstances in the business environment, an analysis of default should inform provision for loan loss (Mabonga, 2017).

The critiques of CRT contend that the factors applied in borrower's credibility determination are very flexible and occasionally explicit to a specific business and therefore it is not the best practice to avail such generic parameters without recognizing the fact that every commercial bank might be facing unique conditions in the business environment. Moreover, it's not proper to assume that the lending environment can function under the pretext that every commercial bank could be steered by specific parameters in determining the creditworthiness of a borrower (Mabonga, 2017). This theory was useful in the study in the analysis of the Loan Loss Provision variable, which is a credit risk management strategy by commercial banks when dealing with non-performing loans.

2.1.4 Modern Portfolio Theory

The MPT was advanced by Harry Markowitz in 1952. It was later modified in 1990 and is concerned with the importance of portfolios, risks, diversification and the correlation between different securities. The theory has been regarded as one of the most influential and imperative contributors to finance and economics because it deals with both investment decisions and financial management. It draws its proposition from the fact that investors who fear taking risks can create portfolios to enhance or capitalize on expected returns given any level of market risk. MPT emphasizes the fact that for higher reward, the game must factor in risk inevitably. This theory advocates for the diversification of securities and asset classes to mitigate risk. It is also based on the assumption that investors normally fear risks thus, would pick a combination of assets that offer the same expected return but has less risk and leave another with high risk (Ali, 2019). Consequently, higher risk will only be considered by an investor if the compensation expected is equally higher returns. On the contrary, any investor looking for higher returns must be willing to accept more risk.

The theory assumes that all investors have the same precise trade-off. However, in reality, different investors analyse their benefits differently depending on specific risk avoidance characteristics. Commercial banks have effectively used the Modern Portfolio Theory (MPT) to market risk exposure and the interest rate charged. Commercial banks also diversify their investments between risk-free government bonds and risky loans issued to the private sector. Similarly, commercial banks diversify investment to other non-interest incomes such as insurance and real estate investment as a way of developing a portfolio to mitigate risks (Ayre and Luciano, 2018). Even though this theory is significant in analysing investments, its opponents argue that it is not a worthy investment tool, because its assertion of the ideal financial markets does not conform to the realities of the world in several considerations including the fact that it is very difficult to find risk-free securities, finding the right mix of the diversified portfolio is a challenge, and there are no assets whose performance is independent of others in the market (Ali, 2019).

Additionally, banks ought to consider the problem of moral hazard and adverse selection in their attempt to maximize revenue since it is hard to focus on borrower type with certainty at the time of initiating a client relationship. The high-interest rate might trigger adverse selection problems since the high rates will be most acceptable to high-risk borrowers. Once these categories of borrowers receive the loans, they may likely develop moral hazard behaviour as a result of venturing into highly risky projects and investments (Lindner, 2013). MPT was important in this context because it was applied in analysing the Business Model Adjustment variable by establishing how commercial banks are diversifying their investments amid the risks prevailing in the market.

2.1.5 Modern Monetary Theory

The MMT was coined by Warren Mosler in 1995. The theory's key proposition is that the government is in control of its currency at any given time in the economy and thus can determine the price of its currency. According to Mosler (1995), the price level of money is a function of the prices paid by the government when it spends and the collateral it demands when lending. Consequently, it reiterates that the state is in a position to determine and regulate steady and viable growth and development in the economy, unwavering prices, a balance of payments, full employment, environmental protection, and a rigorous public finance system and equitable distribution of income. All these aspects of the modern economy inform the economic policies that different countries undertake to solve economic problems and spur economic growth (Burnett, 2016).

The MMT can be applied by governments to control the exchange rate, interest rate and inflation rate through the implementation of monetary and fiscal policies. The government controls the money supply in the economy through monetary policies issued through the Central Bank as the regulator (Andolfatto, 2015). Since it is the responsibility of CBK to ensure the financial stability of the economy, it has the mandate and can exercise the various tools within its capacity to control the direction of the economy in the short run such as implementing monetary policies. To escalate the quantity of cash in supply and cut the cost (rate of interest) for borrowing, the CBK can purchase bonds, bills, or other government-issued notes. On the other hand, when it is necessary to minimize cash supply to ease inflation, CBK can sell the bills or bonds in the finance market, thereby raising the cost of borrowing and depressing borrowing.

Open market manoeuvres, however, constitute the main channels through which it manages prices, inflation, and the supply of currency. This shows that government monetary policies affect the cost (interest rates) charged by banks in the financial market (Burnett, 2016). The

critiques of MMT claim that it is not conventional for a government to be at liberty of spending by either choosing to borrow or have currency printed. Additionally, advocating taxation as an instrument of monetary policy overlooks the efforts advanced for many years to put a distinction between monetary policy pronouncements and the decisions on spending since each is having a particular political impetus. Even though MMT has endeavoured to change the view of the world regarding fiscal and monetary policies, it abandons countercyclical fiscal and monetary policies in the market for targeted centralized management of resource allocation (Wray, 2015).

2.2 Empirical Review

In this segment, the studies that have been conducted in the past relating to specific objectives of the study have been highlighted.

2.2.1 Digital Lending and Financial Performance

Masolo and Wanjohi, (2021), carried out research to assess the impact of digital loans on the profitability of selected financial institutions in Kenya. The study targeted 10 of 38 commercial banks in Kenya that had their digital credit solutions from the year 2012. The study collected secondary data and used descriptive statistics. The research findings showed that there was a substantial and affirmative correlation between the research variables, which were app-based loans, loans based on mobile network operators and website-based loans on the profitability of the banks. The research however separated the Digital Lending platforms and analysed them independently. The current study combined them into one and treated them as one variable in the loan remodelling. Ouma and Ndede (2020), examined the influence of digital banking technology innovations on the profitability of Kenyan banks. The research embraced a descriptive survey design and adopted a questionnaire to collect primary data from over 42 financial institutions in Kenya as of 2018. The findings showed that the ease of access to such digital financial services using modern innovations had a substantial positive impact on the profitability of the banks at the time. This study had no moderating variable on financial performance and only focused on digital banking.

The current study included the moderating effect of CBK regulation and examined Loan Loss Provision as well as Business Model Adjustment as factors affecting the profitability of the Kenyan financial institutions. Nzayisenga (2017) researched to examine how mobile lending affects the profitability of Kenyan financial institutions. The assessment focused on commercial banks that have adopted Digital Lending and used their audited financial reports to collect secondary data. The assessment showed that mobile lending substantially affected the profitability of Kenyan banks. The study did not specify the timeframe from which data was collected and had no moderating variable in the study. This study bridged this gap by investigating Digital Lending from 2016 to 2021 and using CBK regulation as a moderating variable. The literature reviewed confirmed that Digital Lending was a variable in the modern loan remodelling endeavour that significantly affects the profitability of banks globally. This assessment thus aimed at establishing the effect of Digital Lending on the financial performance of commercial banks in Kenya, particularly from the time the interest rate cap was introduced, a period that was not captured by the past studies reviewed.

2.2.2 Loan Loss Provision and Financial Performance

In a study by Siriba (2020), examining how credit risk influenced the performance of financial institutions in Kenya between 2014 and 2018, the researcher used secondary data drawn from the annual financial reports of the banks. To explain the characteristics of the variables of the research, descriptive statistics were applied including the use of mean and standard deviation.

The researcher also employed multiple regression to establish how credit risk impacts the bank's profitability. The outcome of the enquiry revealed a weak and negative impact of Loan Loss Provision and defaulted loans on the profitability of the banks. Duong et al (2020) in their assessment of how financial remodelling measures and influence the general profitability of banks in Vietnam, collected survey data drawn from reviewed annual statements of financial records of the 28 banks between 2008 and 2018 (10 years). They applied four models namely fixed effect (FEM), pooled ordinary least square (POLS), generalized method of moments (GMM) and random effects (REM). The assessment indicated that the remodelling of bad debts to lower the level of bad debts improved the profitability of these banks. The financial remodelling however deteriorated profitability between 2012 and 2015 as well as between 2016 and 2018.

Khangalah (2016) researched to find out the determinants of Banks' lending behaviour in Kenya. Focusing on asset quality, which is Loan Loss Provisions over the aggregated loans, the finding of the study revealed that asset quality, inversely affected credit creation of the state-owned commercial banks and consequently the financial performance. The asset quality is affected by the Loan Loss Provision with increased LLP leading to adverse influence on the viability of the banks. Ayodele Thomas and Alabi (2014) an enquiry into how credit policy affects the productivity of Nigerian financial institutions and discovered that banks could minimize the cases of bad debts by enacting and mainstreaming better policies on lending. In research by Kolapo et al. (2012) to examine how credit risk influenced the Nigerian bank's profitability between 2000 and 2011, the findings established that allowance for a doubtful account and bad debt ratio hurt the viability, while the rise in loan advanced accounted for an affirmative influence on profitability. The literature reviewed confirms that Loan Loss Provision is a factor that affects the profitability of financial institutions. This study thus aimed to assess the effect of Loan Loss Provision on the profitability of commercial banks in Kenya in the period between 2016 and 2021, which was not captured by the past studies reviewed.

2.2.3 Business Model Adjustment and Financial Performance

In a research conducted by Waithaka and Kimencu (2018) to discover how the remodeling approaches influenced the bank's viability in Kenya, the study used a case study to look at the effect of financial remodeling, portfolio remodeling, and organizational remodeling on the profitability of Kenya Commercial Bank (KCB). Using 71 respondents as the sample size, the researcher used primary data analyzed over graphic and inferential statistics. The findings showed that portfolio remodeling approaches had a substantial and positive correlation with the bank's profitability. Thus, making Business Model Adjustment to develop a good portfolio for a bank has a major effect on the financial performance. Karanja (2015) researched the restructuring strategy and performance of KCB Bank. The research used KCB as a case study to establish how its organizational remodeling affected its profitability. Administering the interview schedule by having a one-on-one with the bank's staff as respondents totaling 15 in number, the researcher interviewed directors, managers and departmental heads of KCB bank to obtain primary statistics.

The study revealed that remodeling enhanced the capacity to track loans thereby lowering the rate of nonpayment. The findings revealed that strategies of remodeling led to a higher rate of recovering loans as seen in the debt and portfolio remodeling dipping the defaulted loans and lowering the expenses and consequently resulting in higher earnings in profit of the bank. The study also indicated that portfolio remodeling enhanced the management of asset quality, improved the making of resolutions, eliminated role replication, improved in-house adeptness, elimination of risks of losses and increased the bank's yield on equity and yield on assets. The

studies reviewed above underpinned the impact of Business Model Adjustment on the profitability of financial institutions. A reduction in risky loans would reduce the non-performing loans and increase the profitability of a commercial bank. This study determined the effect of Business Model Adjustment on the financial viability of Kenyan banks.

2.3 Conceptual Framework

The figure below denotes a framework displaying the link between independent variables that included Digital Lending, Loan Loss Provision and Business Model Adjustment; and the dependent variable, which was the financial performance of commercial banks in Kenya;

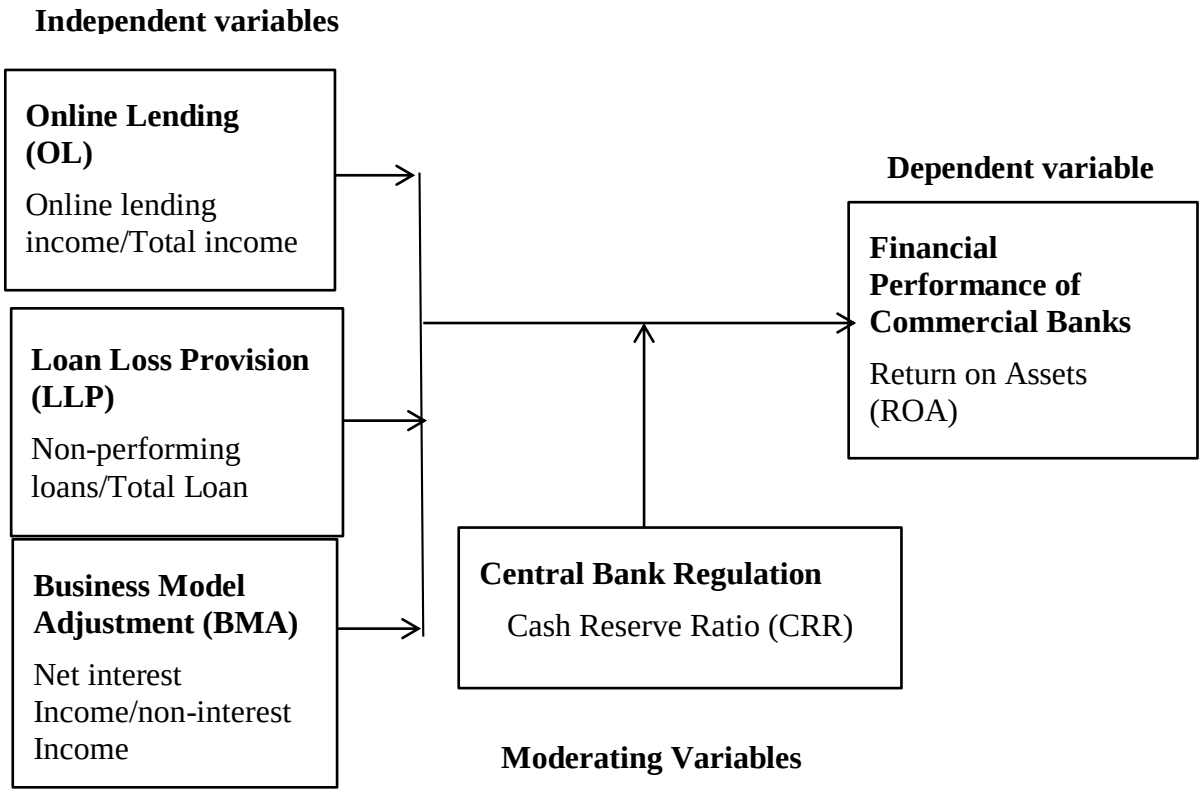

Figure 1: Conceptual framework

3.0 Methodology

The study adopted pragmatic research philosophy in the conduct of the research in which concepts were accepted as relevant only if they were supporting action (Saunders, et al. 2012). The study adopted an explanatory research design and focused on explaining the aspects of the study in detail and determining the why the aspect of the correlations. It was a research design mainly concerned with the causes or why factors of some phenomenon (Tankersley, 2015). This research design was ideal when using secondary data to statistically test the hypotheses with no manipulation. A panel linear regression model was applied to establish the association existing between loan remodelling and the financial performance of commercial banks in Kenya from the 2016 to 2021 period. The panel data regression model was as follows:

The target population in this research was the profit-making banks in Kenya. The study used a census approach. Out of the 39 profitmaking banks operating in Kenya during the study period, two had merged into one (NCBA group), while two had been acquired (National Bank of Kenya and Jamii Bora Limited) leaving 36 profitmaking banks as the actively operating banks as at 31st December 2021 (CBK, 2021). The study used Data Extraction Form to collect secondary data necessary for this research. Data extraction form is ideal when collecting secondary data (Kombo & Tromp, 2006). The audited financial reports and records of the corresponding banks under study for the period under the review were used to draw secondary data obtained from either Kenya Bankers Association (KBA), CBK or Capital Market Authority (CMA) for the 2016 – 2021 period. The researcher collected secondary data. Panel data from a cross-section of profitmaking banks in Kenya for the period between 2016 and 2021 was used in the study.

Data were presented in tables. The study built panel data by combining data series over the period from 2016 to 2021 of data collected from yearly financial records of the banks in Kenya. Applying F-test statistics, the study used regression analysis at a 5% significance level (Cooper & Schindler, 2014). Statistical analysis included panel unit root test, t-test, and panel linear regression model analysis using the STATA software. Clearance from the university and NACOSTI was sought to be able to collect data for the targeted banks in Kenya. The researcher safeguarded the just and legal processing of data collected for analysis and applied the data only for the outlined objectives. The study complied with every ethical concern essential in the steering of research as was sanctioned by the supervisors and Kenyatta University.

4.0 Findings and Discussions

4.1 Descriptive Statistics

This section describes the basic characteristics of the variables used in the study. The analysis has illustrated data on the number of observations, and mean, maximum, minimum, and standard deviation of the study variables. The table below shows the results of the study.

Table 2: Descriptive Statistics

Variables	N	Mean	Std. Deviation
Financial performance	204	0.96	2.28
Digital Lending	204	46.49	10.40
Loan Loss Provision	204	12.58	10.47
Business Model Adjustment	204	3.22	2.69

Source: Research Data (2022).

The results above showed that there were 204 observations drawn from the 34 commercial banks that have been in constant operation in the six-year study period between 2016 and 2021. It indicated that during the period, the financial performance of commercial banks had been growing at a mean of 0.96 per cent. The Return on Assets (ROA) had a minimum of -20.08, and a maximum of 7.04%, which indicated a wide variation of profitability among different commercial banks operating in Kenya with a standard deviation of 2.28%. Further, Digital Lending had a minimum of 13.95 cents, a maximum of 85.91 with a mean of 46.49 per cent and a standard deviation of 10.40%, which showed that the majority of commercial banks in Kenya had adopted the use of technology to leverage their performance. Moreover, Loan Loss Provision had a minimum of 0.00, and a maximum of 57.89 per cent with a mean of 12.58 and a standard deviation of 10.47 per cent, an indicator that non-performing loans were affecting

the banks in Kenya. The results also show that Business Model Adjustment had a minimum of 0.29%, a maximum of 15.92 per cent with a mean of 3.22 per cent and a standard deviation of 2.69%, suggesting that during the period there were some adjustment in the business model to meet the prevailing circumstances in the business environment.

These results are in agreement with the CBK (2021) innovation survey that put the average technological adoption in the banking industry in Kenya at 63 per cent. The findings also agree with a study conducted by Mulwa (2015) that found that policies on money supply such as CBK rate (CBR), open market operations, and cash reserve ratio (CRR) affected the productivity and viability of Kenyan financial institutions significantly and in a positive manner. Similarly, the findings concur with the modern portfolio theory (MPT) that suggests that diversification of securities and asset classes is critical when trying to mitigate against risks and remain profitable in the ever-transforming and competitive business environment.

4.2 Regression Analysis

The research study conducted the regression analysis after determining the suitability of the research study after conducting the diagnostic tests. Panel regression analysis model was used to examine the effect of loan remodeling on the financial performance of commercial banks in Kenya.

The results below showed the fixed effects panel regression model on the impact of loan remodeling on the financial performance of commercial banks in Kenya.

Table 3: Fixed Effects Panel Regression Results

ROA	Coef.	Std. Err	t	P>|t|	[95% Conf.	Interval
Constant	3.8354	1.9675	1.95	0.053	-0.0492	7.7201
Digital Lending	0.0822	0.0272	3.02	0.003	0.1359	-0.0284
Loan Loss Provision	-0.0255	0.0246	-1.04	0.301	-0.0741	0.023
Business Model Adjustment	0.0915	0.1119	0.82	0.415	-0.1295	0.3127

The results above illustrated that without including the independent variables, the financial performance (ROA) of commercial banks increased by 3.8354. It indicated that a unit increase in Digital Lending lead to an increase in financial performance by 0.0822 times which was statistically significant at a p-value of 0.003. However, at a 5% level of significance, the findings showed that a unit increase in Loan Loss Provisions caused a decline in the financial performance of commercial banks by 0.0255, which was not statistically significant with a p-value of 0.301. Similarly, a unit increase in Business Model Adjustment caused an increase in the financial performance of commercial banks by 0.0915, which was not statistically significant with a p-value of 0.415. The overall R squared was 0.5270 implying that Digital Lending, Loan Loss Provisions and Business Model Adjustment variables accounted for 52.70 per cent of the financial performance of commercial banks in Kenya without the inclusion of the moderating variable. Therefore, the panel regression equation for the study was;

$ROA = 3.8354 + 0.0822 Digital\ Lending - 0.0255 Loan\ Loss\ Provision + 0.0915 Business\ Model\ Adjustment + 0.5469\ \varepsilon_t$

4.5 Hypothesis Testing

This was a detailed discussion of the study variables at five percent level of significance anchored on the panel regression results above.

H_{O1}: The effect of Digital Lending on the financial performance of commercial banks in Kenya

The first objective of the study was to determine the effect of Digital Lending on the financial performance of commercial banks in Kenya. The null hypothesis of this thesis was that Digital Lending does not have a significant effect on the financial performance of commercial banks in Kenya. The study results revealed that Digital Lending had a significant and positive effect on the financial performance of commercial banks in Kenya ($\beta = 0.0822$, p-value = 0.003, which was less than a 5% level of significance). Therefore, at a five per cent level of significance, the null hypothesis was rejected and it was concluded that Digital Lending had a significant effect on the financial performance of commercial banks in Kenya. The study results were in concurrence with the findings by Masolo and Wanjohi (2021) and Nzayisenga (2017) that established that Digital Lending had a positive and significant effect on the financial performance of commercial banks in Kenya.

Ho_2: The effect of Loan Loss Provisions on the financial performance of commercial banks in Kenya

The second objective of the study was to investigate the effect of Loan Loss Provision on the financial performance of commercial banks in Kenya. The null hypothesis was that Loan Loss Provision does not have a significant effect on the financial performance of commercial banks in Kenya. The results of the study demonstrated that Loan Loss Provision had a negative and non-significant effect on the financial performance of commercial banks in Kenya ($\beta = -0.0255$, p-value = 0.301 which was greater than a 5% level of significance). Thus, at a five per cent level of significance, the null hypothesis was not declined and it was concluded that with a 95% confidence, Loan Loss Provision did not have a significant effect on the financial performance of commercial banks in Kenya during the 2016-2021 period. These result findings were by Siriba (2020) and Duong et al (2020) study findings showed that Loan Loss Provision had a negative but non-significant effect on the financial performance of banks.

H_{O3}: The effect of Business Model Adjustment on the financial performance of commercial banks in Kenya.

The third objective of the research study was to examine the effect of Business Model Adjustment on the financial performance of commercial banks in Kenya. The null hypothesis of the study was that Business Model Adjustment does not have a significant effect on the financial performance of commercial banks in Kenya. The results of the study indicated that Business Model Adjustment had a positive but non-significant effect on the financial performance of commercial banks ($\beta = 0.0915$, p-value = 0.415 which was greater than a 5% level of significance), therefore, at a five per cent level of significance the null hypothesis was not rejected and the conclusion was that Business Model Adjustment (BMA) did not have a significant effect on the profitability of the banks. This finding corresponded with Waithaka and Kimencu (2018) in their study findings that revealed that Business Model Adjustment had a positive correlation with the financial performance.

5.0 Conclusion

Several conclusions have been drawn from the study after analysing the findings. On the effect of digital lending on bank profitability, the study concluded that digital lending adoption has a

positive and significant effect on the financial performance of commercial banks operating in Kenya. Therefore, banks must continue to invest in technology to capitalize on the opportunity available in the digital lending space for increased profitability. The study determined that, while Loan Loss Provision reduced profitability, it was not significant enough to warrant any future changes to improve profitability. Banks, on the other hand, can continue to make loan loss provisions by IFRS as a compliance mechanism and by the current business environment. The study also discovered that Business Model Adjustment had a positive impact on bank profitability, though the effect was not statistically significant. The conclusion was that banks had not sufficiently diversified their investment portfolios by investing in non-interest income to mitigate interest risk to the level that could significantly affect their profits.

6.0 Recommendations

Based on the findings, the study recommended several financial management policies, practices, and research. Banks should use digital lending more to adapt to changing business environments, meet customer needs, and improve financial performance. Banks' digital lending to remodel loans has increased profitability. Banks should use technology as a matter of policy to cut costs by eliminating manual processes such as hiring staff to process loan applications at branches. Commercial banks should continue to make loan loss provisions by IFRS and regulations even in difficult economic times. Loan loss provisions would discourage non-performing loans. Commercial banks should diversify their investment portfolios to include more non-interest income as a hedge against the high risks of interest income.

The more they redesign their business model, the higher their profitability and business sustainability will be. CEOs of commercial banks should experiment with digital products, particularly online lending apps. This will expand their customer base, improve customer convenience, and reduce their manual lending costs. For convenience and privacy, the majority of Kenyan adults own smartphones and prefer online lending platforms. Many FinTech-powered online lending platforms continue to pose a threat to commercial banks that have yet to embrace digital lending. This study did not include microfinance institutions or Savings and Credit Cooperatives (SACCOs), which have also been impacted by changing business conditions and should be investigated further. In future studies, credit and operational restructuring may have an impact on the financial performance of Kenyan financial institutions. More research could be conducted to examine how loan remodelling affects Kenyan commercial banks by size, listed status, and non-listed status.

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