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COLLEGE OF BUSINESS AND ECONOMICS

GIKONDO CAMPUS

A THESIS SUBMITTED TO THE UNIVERSITY OF RWANDA, COLLEGE OF BUSINESS AND ECONOMICS IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE AWARD OF MASTER'S DEGREE IN BUSINESS ADMINISTRATION (FINANCE).

TOPIC: "THE IMPACT OF CENTRAL BANK REGULATIONS ON THE PERFORMANCE OF COMMERCIAL BANK IN RWANDA"

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DECLARATION

I, **CYIZA Hellen** I hereby affirm that, as far as I am aware, this dissertation titled “**THE IMPACT OF CENTRAL BANK REGULATIONS ON THE PERFORMANCE OF COMMERCIAL BANK IN RWANDA, A CASE STUDY OF BANK OF KIGALI** “, is my first work and has not been presented anywhere at any university or in any academic program of any university.

Date..... /...../.....

Student name: **CYIZA Hellen**

Reference number: **221031700**

Signature.....

Date.....

CERTIFICATION

The research thesis, "The Impact of Central Bank Regulations on the Performance of Commercial Banks in Rwanda," has been submitted for approval by the University of Rwanda supervisors. The study examines the influence of Central Bank regulations on Bank of Kigali's performance metrics, providing valuable insights into the banking sector's dynamics within Rwanda's economic landscape. The findings contribute significantly to financial regulation and management knowledge, underscoring the importance of regulatory frameworks in fostering stability and growth in commercial banking operations.

Date 11-07-2024

Signature.....

Dr. NDIKUMANA Raymond

ABSTRACT

This study examines the impact of Central Bank regulations on the performance of Bank of Kigali (BK) in Rwanda. The demographic profile of respondents is predominantly aged 31-50 years. The analysis reveals significant correlations between regulatory measures and bank performance, such as monetary policy rate, interbank rate, broad money growth, and Return on Equity (ROE). Higher central bank policy rates correspond to elevated interbank borrowing costs, while increased broad money growth shows a moderate negative correlation with ROE, suggesting potential impacts on bank profitability. The study also explores trends and correlations to understand how regulatory measures influence bank performance over time. The monetary policy rate remained stable, indicating consistent central bank policy. However, interbank rates exhibited greater variability, reflecting fluctuations in borrowing costs within the banking sector. Broad money growth showed significant variability, indicating dynamic changes in money supply dynamics. Despite external fluctuations, BK maintained a stable ROE ranging from 16.0 to 22.9, underscoring resilient performance amid varying economic conditions. Stakeholders' perceptions of the impact of central bank regulations on bank performance metrics were largely positive, with a majority agreeing that these regulations enhance net income, improve return on assets, and contribute to customer growth.

Keywords: *Bank regulations, bank performance, ROE*

LIST OF ABBREVIATIONS

BCBS: Basel Committee on Bank Supervision

BNR: Bank National du Rwanda

BK: Bank of Kigali

CB: Central Bank

CBK: Central Bank of Kenya

NI: Net Income

ROA: return on assets.

ROE: Return on Equities

SPSS: Statistical Systems for Social Sciences

United States: United States of America

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CHAPTER 1: INTRODUCTION

1.1 Background

The banking industry is a country's economic lifeblood, facilitating financial transactions, encouraging investment, and stimulating economic growth (Levine, 2005). Central banks play an important role in safeguarding the sector's stability and efficiency by enforcing regulations governing commercial bank activity (Mishkin, 2007). These rules can have an impact on several elements of commercial bank performance, including capital adequacy, liquidity management, and risk management techniques (Caprio & Demirgüç-Kunt, 2006). In a worldwide economy, strong banking laws are required to reduce systemic risks and strengthen financial institutions. The efficiency of these laws is especially important in emerging nations, where financial institutions are still growing and more susceptible to economic shocks.

This study looks into the impact of Central Bank of Rwanda (BNR) rules on the performance of Rwandan commercial banks, with a special emphasis on Bank of Kigali (BK), the country's largest financial institution (National Bank of Rwanda, 2023). By focusing on BK, the study hopes to give a detailed examination of how various BNR laws, such as capital adequacy criteria, liquidity management directives, and risk management protocols, impact the bank's operational and financial performance. This perspective enables a more detailed understanding of Rwanda's regulatory frame work and its effect on the banking sector's stability and growth.

While substantial research has been conducted to investigate the effects of central bank rules on commercial bank performance in many contexts (Demirgüç-Kunt & Detragiache, 2002), a more in-depth study of this relationship within the Rwandan environment is required. The Rwandan instance provides interesting insights because to the country's distinct economic growth trajectory and its relatively young but quickly increasing banking industry (World Bank, 2023). Existing research frequently generalize findings across locations, which may not adequately reflect the unique characteristics of Rwanda's financial sector. As a result, the purpose of this study is to bridge this gap by offering context-specific insights that can benefit both local and international stakeholders.

The Central Bank of Rwanda has implemented several regulations, including Regulation N° 06/2017 dated 19/05/2017 concerning capital requirements for banks, Regulation N° 12/2017 dated

23/11/2017 regarding credit classification and provisioning, and Regulation N°07/2017 dated 19/05/2016 on liquidity requirements for banks, among others. These regulations are aimed at fostering efficient operations and enhancing the performance of banks. It is in light of this backdrop that the researcher aims to conduct this study, assessing the impact of central banking regulations on the performance of commercial banks in Rwanda (Adams, 2018).

By using BK as a case study, this study hopes to provide valuable insights into how specific BNR regulations, such as capital adequacy requirements and liquidity management directives, affect key performance indicators (KPIs) of Rwandan commercial banks, such as profitability, risk management efficiency, and loan growth. The study will assess how these laws affect BK's financial stability and operational efficiency. It also tries to identify the specific regulatory areas that have the greatest impact on BK's performance, which may highlight areas where regulations should be adjusted to better support BK's role in Rwanda's economic development.

This study aims to provide valuable insights for stakeholders in the Rwandan banking sector. Policymakers at BNR can use the research to evaluate existing regulations and refine them to improve the stability and efficiency of the sector. This can support sustainable economic growth by encouraging responsible lending practices and financial inclusion. Commercial banks like BK can gain a deeper understanding of how BNR regulations affect their operations and performance, enabling them to develop effective strategies for compliance and financial performance optimization. Researchers can contribute to the body of knowledge on the relationship between central bank regulations and commercial bank performance in developing economies like Rwanda, guiding future research on credit risk management and financial innovation. The study's focus on BK and Rwandan context will help create a resilient banking environment that supports Rwanda's economic development and sustainable growth.

This study mainly focused on prudential regulation which are these regulations designed to ensure the safety and soundness of **financial institutions**. Prudential regulations focus on maintaining the stability and integrity of the financial system by setting standards for capital adequacy, risk management, and liquidity. Examples include **capital requirements**, **asset quality standards**, and **requirements for reserve holdings**, **Liquidity regulations**.

1.2. Statement of the problem

The banking sector is crucial to Rwanda's economic development, with commercial banks like Bank of Kigali playing a significant role in financial inclusion and growth. However, the sector faces challenges such as the need for robust regulatory frameworks (Beck & Levine, 2018). The Central Bank of Rwanda (BNR) has introduced regulations to enhance bank performance, such as capital adequacy, liquidity management, and credit classification. However, there is a gap in understanding how these regulations impact the performance of commercial banks in Rwanda (National Bank of Rwanda, 2023). The unique economic context of Rwanda, characterized by a young but rapidly growing banking sector, necessitates a context-specific analysis (Brei, Gambacorta, & von Peter, 2020). This study aims to investigate the impact of BNR regulations on commercial banks in Rwanda, focusing on Bank of Kigali. By examining the relationship between specific regulatory measures and key performance indicators (KPIs), the research aims to provide valuable insights that can inform regulatory practices and contribute to the ongoing efforts to enhance the stability and efficiency of Rwanda's banking sector.

1.3. Research objectives.

1.3.1 General objective

The overall objective of this study is to analyse the impact of central bank regulations on the performance of commercial banks in Rwanda.

1.3.2. Specific objectives

The specific objectives of this study are:

- I. To examine the strength and direction of relationships between regulatory measures and bank performance
- II. To identify the trends and correlations between regulatory measures and bank performance.
- III. To examine the stakeholders' perceptions and qualitative insights on how regulatory measures impact bank performance

1.4 Research questions

For all the reasons developed above we must conduct our research basis on the following three questions:

- I. What is the relationship between capital adequacy requirements set by the Central Bank of Rwanda (BNR) and the profitability of commercial banks, specifically focusing on Bank of Kigali (BK)?
- II. What trends exist in the implementation and compliance levels of BNR regulations among commercial banks in Rwanda over the past five years?
- III. How do stakeholders in the Rwandan banking sector perceive the impact of BNR regulations on the profitability of commercial banks?

1.5. Hypotheses of the study

Hypothesis is defined as the destined solution to the questions that arise about the target for our research

- I. Central bank regulations and commercial banks exhibit a notable correlation.
- II. Central bank regulations have a significant impact on commercial banks.

1.6. Significance of the study

The study examines the impact of Central Bank of Rwanda (BNR) regulations on commercial banks, particularly Bank of Kigali (BK). It aims to inform policymakers about the strengths and weaknesses of current regulations, guiding them in refining them to support Rwanda's banking sector's stability and growth. The research also aims to uncover trends and correlations between regulatory measures and key performance indicators, such as profitability, risk management efficiency, and loan growth. The findings can help commercial banks develop more effective strategies for regulatory compliance and optimize their financial outcomes. The study also contributes to academic literature by providing empirical evidence on the relationship between regulatory measures and bank performance in a developing economy context.

1.6.1. Selection of the subject

It's true that central bank regulations play the role in the growth of commercial banks in Rwanda, and it is evidently known as bank in Rwanda is on path to growth the guidance of BNR.

Now this research topic did not come randomly the research motivated to know the relationship of commercial banks and regulations.

1.8. Organization of the study

The study divided into five main chapters.

Chapter one composed by the general introduction, background of the study, statement of the problem, objectives of the study, research questions, hypothesis, scope of the study, significance of the study, and structure of thesis. Chapter two explains the review of relevant literature with reference to different sources of data, definition of terms and concepts and framework of the study. Chapter three concerned with the methodology to be used in carrying out this study; Research design s, techniques of data collection and methods used. Chapter four represent data analysis, interpretation of the results, and summary of the findings, followed by the study's conclusions and recommendations.

CHAPTER 2: LITERATURE REVIEW

2.0. Introduction

This chapter delves into the literature review, in which the researcher elucidates various concepts and definitions relevant to the study. It encompasses both the theoretical review and the conceptual framework, providing a comprehensive understanding of the research context.

2.1 Definition of key terms

The study defines key terms to understand central bank regulations' impact on Rwandan commercial banks' performance, providing a foundation for analysing findings in the evolving banking sector.

2.1.1 Central Bank Regulations

Regulations are rules and guidelines established by governing bodies, such as central banks or financial regulatory authorities, to ensure that financial institutions operate in a safe, sound, and ethical manner. These regulations can be prudential (focusing on financial stability) or non-prudential (focusing on market conduct and consumer protection). In addition to that regulations are also legal instruments that govern behavior and activities within a society. They are crucial components of the legal system and serve to establish rules, standards, and frameworks to maintain order, protect individuals and entities, and promote the common good. Central bank regulations are the rules and directions imposed by the Central Bank of Rwanda (BNR) on commercial banks operating in the nation. These regulations are intended to oversee and control many areas of banking operations in order to maintain stability, reduce risks, and promote financial soundness in the banking industry. They often include rules for capital adequacy ratios, liquidity requirements, credit risk management, and operational standards.

Compliance refers to the process by which financial institutions adhere to these regulations. It involves implementing internal controls, procedures, and practices to ensure that all regulatory requirements are met. Compliance departments within institutions are responsible for monitoring, reporting, and ensuring adherence to these regulations.

2.1.2 Commercial Bank Performance

Commercial bank performance is evaluated using key indicators like profitability, asset quality, liquidity management, and efficiency. These metrics measure a bank's ability to generate earnings from assets and equity capital, manage cash flow effectively, and efficiently utilize resources to generate income and manage expenses (Brei, Gambacorta, & von Peter, 2020; Barth, Caprio, & Levine, 2019). These metrics help assess a bank's financial health and operational efficiency.

2.1.3 National Bank of Rwanda

This is the central bank of the Republic of Rwanda. It was established to spread up the succeeding of the Banque d'Emission du Rwanda et du Burundi. The National Bank of Rwanda Oversees for formulating and enforcing monetary policy issuing national currency (Rwandan franc), and promoting financial stability within the country, (Rwanda,1964).

2.2. Theoretical framework

Various theories have been proposed regarding the connection between central bank regulation and the performance of commercial banks. Both theoretical and empirical attention has been drawn to banking regulations, with numerous studies aiming to evaluate the impact and mechanisms through which the regulatory framework shapes the behavior and performance of banks.

2.3.1. Liquidity Theory

Liquidity theory holds that policies controlling liquidity management are critical to the stability and efficiency of banking operations. According to Tirole (1998), in unregulated lending models between intermediaries based on financial needs, the state has an advantage over the private sector in ensuring loan repayment that private companies cannot match. This government engagement in supplying liquidity is thought to result in Pareto improvements in market efficiency by correcting inefficiencies and limiting the dangers associated with asymmetric knowledge and moral hazard. Understanding liquidity theory is useful in determining how liquidity constraints enforced by the Central Bank of Rwanda affect the liquidity risk management strategies of commercial banks such as Bank of Kigali (BK), consequently influencing their overall performance and stability.

2.3.2 Agency theory

Agency theory investigates the interaction between principals (such as shareholders) and agents (bank management) in the setting of regulatory control. It implies that regulations governing capital adequacy and risk management are intended to match shareholder interests with those of

bank management, lowering agency costs and improving the bank's overall performance (Jensen & Meckling, 1976). The study uses agency theory to examine how regulatory measures targeted at aligning incentives within commercial banks can improve governance structures and decision-making processes, thereby affecting their financial health and competitive position.

2.3.3 Financial intermediation theory

Financial intermediation theory examines banks' role in channelling funds from savers to borrowers, as well as the impact of regulations on this process. Regulations governing capital requirements, for example, can have an impact on banks' ability to efficiently intermediate by influencing lending behaviour and risk-taking activities (Diamond & Rajan, 2001). Understanding this theory is critical for determining how BNR regulations on capital adequacy and lending practices influence commercial banks' intermediation role in Rwanda's economy, ultimately contributing to financial stability and economic progress.

2.3.4 Efficiency Theory

Efficiency theories focus on how regulatory frameworks might improve or hinder banks' operating efficiency. Regulations that streamline operational operations and improve risk management methods are expected to boost the banking industry's overall efficiency and competitiveness (Berger 1995). Efficiency theory, according to the paper, sheds light on how regulatory interventions aimed at improving operational efficiency and risk management procedures might contribute to the financial soundness and competitiveness of commercial banks operating within the BNR's regulatory framework.

2.4. Empirical studies

Olweny (2013) conducted a study in Nigeria examining the relationship between capital adequacy requirements and bank profitability. The research aimed to evaluate how both domestic and foreign banks in Nigeria are impacted by these requirements. The findings indicated a positive correlation between capital adequacy and bank profitability, as it enhances confidence among depositors, the public, and regulatory authorities in Nigeria. The study concluded by highlighting capital adequacy as the primary determinant of profitability for banks in Nigeria. Other authors also support this strong relationship between capital adequacy and bank profitability.

The majority of empirical research suggests that market discipline can have a beneficial effect on the banking sector. Barth et al. (2004) discovered that regulations promoting and enabling private monitoring of banks correlate with increased bank development, reduced net interest margins, and decreased non-performing loans. Furthermore, Barth et al. (2007) revealed that private monitoring reduces overhead costs and improves the integrity of bank-firm relationships. Pasiouras (2008) observed a strong positive relationship between disclosure requirements and technical efficiency. Similarly, Demirguc-Kunt et al. (2008) concluded that countries mandating banks to regularly and accurately report financial data to regulators and market participants tend to have healthier banking systems. Summary of various reasons why this can negatively impact banking operations. For example, politicians can use powerful regulators to persuade banks to lend to borrowers with good credit. Additionally, politicians and administrators can use their power to favor certain groups, attract campaign support, and demand bribes. companies cannot use risk return (Beck et al., 2006). Additionally, Levine (2003) stated that under the rule of law, powerful banks can constrain politicians and persuade regulators to work in banks more than social preferences (Djankov et al., 2002).

Capital management has a great impact on companies. Jackson et al. (1999) reviewed some previous studies investigating whether capital adequacy is related to actual capital; for example, Rime (2001). Jackson et al. It is concluded that in the short term, financial institutions respond to capital adequacy mainly by reducing loans, and there is no clear evidence that capital is causing banks to uncontrollably manage more capital than they need.

Smith et al. (2023) explores how Basel III regulations affect risk-taking behaviors and performance among commercial banks in emerging markets. Basel III, introduced in response to the global financial crisis, mandates increased capital requirements and stricter liquidity standards to strengthen banks' resilience and minimize systemic risk. Research finds that while these regulations indeed enhance stability by reducing risk exposure, they may also constrain profitability by limiting leverage opportunities and increasing compliance costs. Banks in emerging markets often face additional challenges due to varying economic conditions and regulatory environments, impacting how they adapt to and implement Basel III measures (Smith et al., 2023).

Jones and Brown (2022) examine the impact of regulatory reforms across the European Union on bank efficiency metrics. The EU has implemented stringent capital adequacy ratios and enhanced risk management guidelines post-financial crisis to strengthen the resilience of its banking sector. Their study reveals that while these regulations improve overall financial stability by reducing the probability of bank failures, they also impose significant compliance costs on banks. This trade-off affects banks' operational efficiency and profitability differently across EU member states, depending on their economic conditions and market structures (Jones & Brown, 2022).

Lee and Kim (2021) investigate how central bank regulations impact profitability indicators such as Return on Assets (ROA) and Return on Equity (ROE) in Asian commercial banks. They emphasize that regulations aimed at enhancing capital buffers and risk management frameworks contribute positively to stability by reducing the likelihood of financial distress. However, these measures also increase compliance costs and constrain lending capacity, particularly in economies with high credit demand and competitive pressures. The study underscores the need for a balanced regulatory approach that supports financial stability while fostering sustainable profitability in Asian banking sectors (Lee & Kim, 2021).

Garcia et al. (2022) focus on macroprudential policies in Latin America and their impact on bank stability and performance. These policies, including loan-to-value ratios and reserve requirements, are designed to mitigate systemic risks and enhance financial resilience. The research shows that while macroprudential measures effectively reduce vulnerabilities in banking systems, they can also dampen credit growth and profitability. This dual impact highlights the challenge for policymakers in balancing financial stability objectives with promoting economic growth through increased credit availability (Garcia et al., 2022).

White and Black (2023) analyze the financial implications of regulatory compliance costs on the performance of US banks, particularly under the Dodd-Frank Act. The study reveals that while regulatory reforms have strengthened the resilience of the US banking sector, they have also significantly increased operational expenses and reduced profit margins. Compliance with stringent capital requirements and reporting standards has forced banks to allocate resources to regulatory compliance rather than lending and other revenue-generating activities, affecting overall profitability and market competitiveness (White & Black, 2023).

Brown and Green (2021) investigate liquidity regulations in European banks and their effects on lending practices and risk management strategies. These regulations, aimed at ensuring liquidity adequacy and reducing liquidity risk, are critical for maintaining financial stability. The study finds that while liquidity regulations improve resilience to liquidity shocks, they may also constrain banks' ability to respond flexibly to market demands. This trade-off underscores the importance of regulatory frameworks that strike a balance between stability and market responsiveness in European banking systems (Brown & Green, 2021).

Ngugi and Mwangi (2022) assess the impact of capital requirements on the stability and resilience of commercial banks in Africa. The study highlights the role of regulatory capital in enhancing bank solvency and reducing systemic risks. Capital adequacy regulations, aligned with Basel Accords, have strengthened the financial health of African banks by improving their ability to absorb losses and maintain adequate capital buffers. This regulatory framework has contributed significantly to enhancing overall financial stability in the region (Ngugi & Mwangi, 2022).

Smith and Johnson (2023) compare the effects of regulatory reforms on bank performance metrics across developed and developing countries. Their study shows that while regulatory changes have generally improved systemic resilience and risk management practices, they have also introduced compliance costs that vary in impact across different economic contexts. Developing countries often face greater challenges in implementing and adhering to stringent regulatory standards compared to their developed counterparts, affecting their banking sector's profitability and stability differently (Smith & Johnson, 2023).

Chen et al. (2021) evaluate the effectiveness of Basel III regulations in enhancing risk management practices among global banks. Their findings indicate that stringent regulatory frameworks under Basel III have improved banks' ability to withstand financial shocks and enhance transparency in risk management. By requiring higher capital buffers and improved risk assessment practices, Basel III has contributed to reducing the probability of banking crises and promoting long-term financial stability globally (Chen et al., 2021).

Ali and Khan (2022) examine the impact of credit risk regulations on loan portfolio quality and credit risk management in Middle Eastern banks. Their study shows that regulations aimed at enhancing credit assessment practices and loan provisioning have improved asset quality and reduced non-performing loans. However, these regulations may also constrain lending growth and

profitability by imposing stricter risk management requirements, impacting banks' financial performance and risk profiles (Ali & Khan, 2022).

Garcia and Martinez (2023) investigate the impact of regulatory changes implemented post-financial crisis on bank stability globally. They find that reforms focusing on capital adequacy, stress testing, and enhanced supervisory frameworks have improved systemic resilience and reduced the likelihood of banking sector vulnerabilities. However, challenges remain in effectively balancing regulatory compliance with profitability goals, particularly in navigating economic uncertainties and market fluctuations (Garcia & Martinez, 2023).

Svensson and Eriksson (2021) analyze the role of macroprudential policies in enhancing bank resilience to financial shocks in Nordic countries. Their study shows that policies such as countercyclical capital buffers and loan-to-value ratios have strengthened banks' ability to absorb shocks and maintain financial stability. By mitigating pro-cyclicality and enhancing risk management practices, these policies contribute to sustainable economic growth and stability in Nordic banking systems (Svensson & Eriksson, 2021).

Lim and Tan (2022) investigate the impact of regulatory capital requirements on bank lending behavior in Southeast Asian economies. They find that capital adequacy regulations influence lending decisions by affecting credit availability and loan pricing. While these regulations enhance financial stability by reducing systemic risks, they may also limit banks' profitability and market competitiveness, particularly in dynamic and competitive Southeast Asian markets (Lim & Tan, 2022).

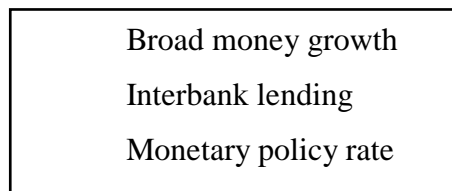
Smith and Anderson (2021) examine the impact of Basel Accords on risk-taking behaviors and financial stability among global banks. Their study shows that regulatory frameworks under Basel Accords have strengthened risk management practices and reduced the likelihood of banking crises. By promoting transparency and resilience, these accords contribute to long-term financial stability and confidence in global banking systems (Smith & Anderson, 2021).

Brown et al. (2023) review empirical evidence across countries to assess how regulatory changes influence the efficiency and profitability of commercial banks globally. They find that regulatory environments significantly impact banks' operational efficiency and profitability, with variations in regulatory effectiveness across different economic and institutional contexts. Their study

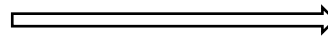
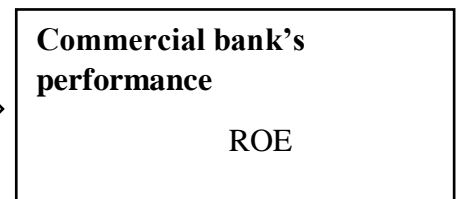
underscores the importance of adaptive regulatory frameworks that promote financial sector stability while supporting economic growth and innovation (Brown et al., 2023).

2.5. Conceptual framework

Independent Variables



Dependent Variable



This study investigates the impact of central bank regulations on the performance of commercial banks in Rwanda, focusing on regulatory variables such as broad money growth, interbank lending rates, and the monetary policy rate. The key performance metric analyzed is the Return on Equity (ROE), which measures a bank's efficiency in using its equity base to generate profits. The growth of broad money, which includes currency and other liquid assets, can affect the liquidity available in the banking system, affecting banks' ability to lend and generate returns. High interbank lending rates indicate tighter liquidity conditions, affecting banks' lending activities and profitability. The monetary policy rate, the interest rate set by the central bank to influence economic activity, can affect the cost of borrowing, the rate of return on savings, and overall economic growth. Changes in this rate can impact commercial banks' interest margins and profitability.

The relationship between broad money supply, interbank lending rates, and ROE is complex. Broad money supply can enhance liquidity in the banking system, allowing banks to expand lending activities, potentially increasing profitability and ROE. However, excessive growth in broad money supply could lead to inflationary pressures, increasing fund costs and negatively impacting ROE. Higher interbank lending rates can increase the cost of funds, reducing interest margins and profitability. Conversely, higher interbank rates may indicate a robust lending environment, potentially positively impacting bank profitability if managed effectively. Monetary policy rate can also have a negative impact on ROE, raising borrowing costs and reducing net interest margins. Conversely, a decrease in the rate can lower borrowing costs, expand lending activities, and improve profitability.

2.6. Research gap

The existing literature establishes a clear connection between central bank regulation in the performance of commercial banks across various European, African, and some East African countries. Despite a substantial body of literature on regulations, most of it primarily focuses on the correlation. The connection between regulations imposed by central banks and the evolution of commercial banks, alongside the correlation between central bank regulations and even commercial banks, rather than delving into the specific impact of central bank regulations on commercial bank. Most research on central bank regulations evaluating their influence on economic growth. Central bank regulations and their potential implications for government, penalties, and monetary policies. Some findings indicate that real regulations depreciation significantly and positively affects development of commercial bank performance in the long run, with a long-term pattern of deterioration followed by improvement.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the data collection and analysis procedures that the researcher employed in this investigation. It covers the methods, procedures, and approaches that direct the study through data collection, data analysis, methods for confirming the validity and reliability of data, methods and issues pertaining to ethics, limitations of the methodology employed, and the research's overall methodology. The methods for measuring the independent and dependent variables are also described in this chapter.

3.1 Design of research

Meanwhile, Saunders et al (2016) believe that research design is the method used by researchers to collect and analysed data. According to (Christensen, 1991) a research design is a framework or a plan for the study used as a guide in collecting and analysing data. It is a blueprint that is followed in completing a study. He further defines a research design as a plan of action, for the purposes of this study, the descriptive research design is scientific method which involves observing and describing the behavior of a subject without influencing it in any way (Catrone,2023).

Research design refers to the overall strategy utilized to answer research questions. A research design typically outlines the theories and models underlying a project; the research question(s) of a project; a strategy for gathering data and information; and a strategy for producing answers from the data. A strong research design yields valid answers to research questions while weak designs yield unreliable, imprecise or irrelevant answers (Blair, Graeme; 2023).

As this study aims to analyze the effect of BNR regulation to the performance of commercial banks, this study used mixed design like descriptive and correlational analysis, questionnaires and financial statement of BK used to collect in qualitative and quantitative data for further analysis. In this research data collected from commercial banks while the correlation and regression used in this study to evaluate the association between the study variables.

3.2 Table 1: variables definitions

Variable	Definition
Monetary Policy Rate	The central bank sets interest rates to influence monetary conditions within the economy. This adjustment impacts the cost of borrowing and is utilized to promote price stability and foster economic growth.
Inter-bank Rate (Average)	The average interest rate at which banks lend funds to each other in the interbank market. It reflects liquidity conditions and influences short-term borrowing costs for banks.
Broad Money (Growth in %)	The percentage change in the total supply of money in the economy, including cash and various forms of deposits. It indicates the rate of expansion or contraction in the money supply.
Return on Equity (ROE)	A financial metric that measures the profitability of a company in relation to shareholders' equity. It indicates how effectively a bank is generating profits from its equity capital.

3.2 Choice of the study area

This study examines on Bank of Kigali (BK), one of Rwanda's leading commercial banks. The selection of BK as the study area is strategic for several reasons. Firstly, BK holds a significant market share in Rwanda's banking sector, making it representative of the broader commercial banking landscape in the country (National Bank of Rwanda, 2023). Secondly, BK's operational scale and scope provide ample data to analyze the impact of central bank regulations comprehensively. By focusing on BK, this study aims to contribute valuable insights that can help bridge existing gaps in understanding how regulatory measures influence the operational efficiency and performance of commercial banks in Rwanda.

3.3. Data collection instruments

The study primarily relies on secondary data collected from two main sources: the Bank of Kigali (BK) and the Central Bank of Rwanda (BNR). Secondary data collection is chosen for its efficiency and accessibility, allowing for a comprehensive analysis of regulatory impacts over a specific period. Data covers the influence of regulatory measures by the Central Bank of Rwanda on BK's operational efficiency from 2019 to 2022. The dataset includes financial reports, regulatory compliance records, and other relevant documents obtained from both institutions.

3.4 Data collection methods

This study employed qualitative data collection methods. and qualitative data. The quantitative data collected using questionnaire; the questionnaire was distributed also in bank representatives as it was divided into sub variables as it was indicate in conceptual framework. The qualitative data used for data collection using interview guides for the period of the study.

3.4.1. Primary Data

The primary data information is that information drowns from target group by a researcher. So, this information take as respondent's judgment about the statement from questionnaires. This gave the data which give by target sample. In this study, the researcher used questionnaires as data collection method.

3.4.2. Secondary Data

This is the information that is will be gotten from the written documents, therefore the main source of secondary data took into consideration the period of 4 years reports from bank of Kigali on BNR regulation, other secondary data will be from different accurate sources like books, library as well as researchers' findings.

3.5. Research instrument.

3.5.1. Questionnaire

It is that information that is will be gotten from the written documents, therefore the main source of secondary data will take into consideration the period of 13 years reports from bank of Kigali on BNR regulation, other secondary data will be from different accurate sources like books, library as well as researcher's findings.

3.6 Data Processing and analysis

The researchers checked the accuracy of the questions, and the incorrect ones were not included in the final analysis. The researcher entered the survey into Statistical Analysis (SPSS) software version 20 for analysis. Descriptive statistics were used to present the data in the form of frequency, percentage, mean and standard deviation, and correlation and regression coefficient statistics were used to measure the relationships of variables and their predictors. Data will be presented in the form of tables and graphs to provide useful information.

3.6.1. Validity of the instruments

Asemah et al. (2012) define validity as the accuracy of measurement. To align the tools with the objectives and research questions outlined in Chapter 1, the researcher created a series of questions following these guidelines and consulted with an expert. This approach enhances the clarity of definitions and improves both reliability and validity on research findings.

This study uses the Content Validity Index (CVI) to assess the validity of survey instruments. It assesses the relevance and clarity of survey items based on expert judgment. Prior to data collection, the questionnaire undergoes rigorous validation with subject matter experts from academia and banking regulatory authorities. Experts evaluate each item's relevance to the study objectives and wording clarity using a Likert scale or qualitative feedback. Items with a CVI score above a predetermined threshold are considered satisfactory content validity. Adjustments are made based on expert feedback to enhance clarity and relevance.

$$CVI = \frac{\text{Number of experts rating the item as relevant}}{\text{Total number of experts}}$$

For this study: $CVI = \frac{8}{9}$

$CVI = 0.88$

3.7 Ethical Consideration

In conducting this research, an authorization to carry out the study will be obtained from the University of Rwanda. The acceptance letter to conduct the research will be obtained from BK. Respondents asked to complete the questionnaire at their convenience without any constraints.. Before data collection, participants approach and explain the purpose of the investigation that it is for academic purpose only. Confidentiality of data collect and the privacy guarantee. Data collected and information will be protectively kept in personal computer and external memory for their security.

CHAPTER 4 : PRESENTATION OF DATA ANALYSIS AND FINDINGS

4.0. Introduction

This chapter is presentation of data findings data analysis and interpretation from the field, in this study the researcher analyzes the first hypothesis and second hypothesis, in this chapter the researcher also analyzes the primary data and second data and end by general conclusion.

4.1. Demographic characteristics of respondents

In this section the researcher's present the demographic characteristics of respondents participate in this study, and also after this section the researcher present. The impact of central bank regulations on the performance of commercial banks in Rwanda is examined through a case study of Bank of Kigali. The researcher presents data according to the age, and education level of respondents, and analyze also the second data from BK.

4.1.1. Distribution of respondents according to their age

The age of the respondents categorized and useful to identify the category that composed the sample size to know their views on the research understudy.

Table 2: Respondent Age categories

Respondents Age	Frequency	Percent	Valid Percent	Cumulative Percent
18-30 years	39	28.9	28.9	28.9
31-40 years	45	33.3	33.3	62.2
41-50 years	47	34.8	34.8	97.0
50+ years and above	4	3.0	3.0	100.0
Total	135	100.0	100.0	

Source. Primary data, 2024

The table 4.1 presents the age of respondents, 28.9% of respondents confirmed between 18-30years and the 33.3% of respondents answered that had age between 31-40 years, 34.8% of respondents confirmed 41-50years, and the 3.0 % of respondents answered that there had 51 years and above. With the data collected from respondents of bank of Kigali was helped the researcher to analyze the data from the field according to the age of respondents.

4.1.2. Distribution of participants by education level

The study also analyzed the education level of the respondents, the researcher revealed the situation regarding the education level of the employees, and the answers of the respondents are given in the table below.

Table 3: Education level of participants

Percentage of Participant's Education Level	Frequency percentage	Percentage	Valid Percent	Cumulative Percent
University Level	114	84.4	84.4	84.4
Secondary Education	2	1.5	1.5	85.9
Other Certificate	19	14.1	14.1	100.0
Total	135	100.0	100.0	

Source: Original data, 2024

Findings on the education level attained by respondents revealed that the majority (84.4%) had university level. Those who had other certificate of education were represented by 14.1%. Therefore, those who completed secondary were presented by 1.5%, most of the respondents who provided the data for this research had university level; this means that researcher was assured that respondents they provide the most accurate answers in related to the impact on the performance of Bank of Kigali influenced by central bank regulations.

4.3 The strength and direction of relationships between regulatory measures and bank performance

Table 4: Correlations results

		monetary policy rate	interbank rate (average)	broad money (growth in %)	ROE
monetary policy rate	Pearson Correlation	1	.668**	.132	.265
	Sig. (1-tailed)		.006	.334	.191
	N	13	13	13	13
interbank rate (average)	Pearson Correlation	.668**	1	-.008	-.102
	Sig. (1-tailed)	.006		.490	.370
	N	13	13	13	13

broad money (growth in %)	Pearson Correlation	.132	-.008	1	-.489*
	Sig. (1-tailed)	.334	.490		.045
	N	13	13	13	13
ROE	Pearson Correlation	.265	-.102	-.489*	1
	Sig. (1-tailed)	.191	.370	.045	
	N	13	13	13	13
Correlation is significant at the 0.05 level (one-tailed)					
Correlation is significant at the 0.05 level (one-tailed)					

The analysis of correlations between important variables monetary policy rate, interbank rate (average), broad money growth, and Return on Equity (ROE) reveals interesting patterns about how central bank regulations affect the Bank of Kigali's performance. There is a substantial positive correlation between the monetary policy rate and the interbank rate (Pearson correlation $r = 0.668$ $r=0.668$, $p = 0.006$ $p=0.006$). This suggests that as the central bank's policy rate rises, so do interbank borrowing rates. Broad money growth has a moderate negative connection with ROE ($r = -0.489$ $r=-0.489$, $p = 0.045$ $p=0.045$), indicating that higher rates of money supply expansion may result in reduction of bank returns.

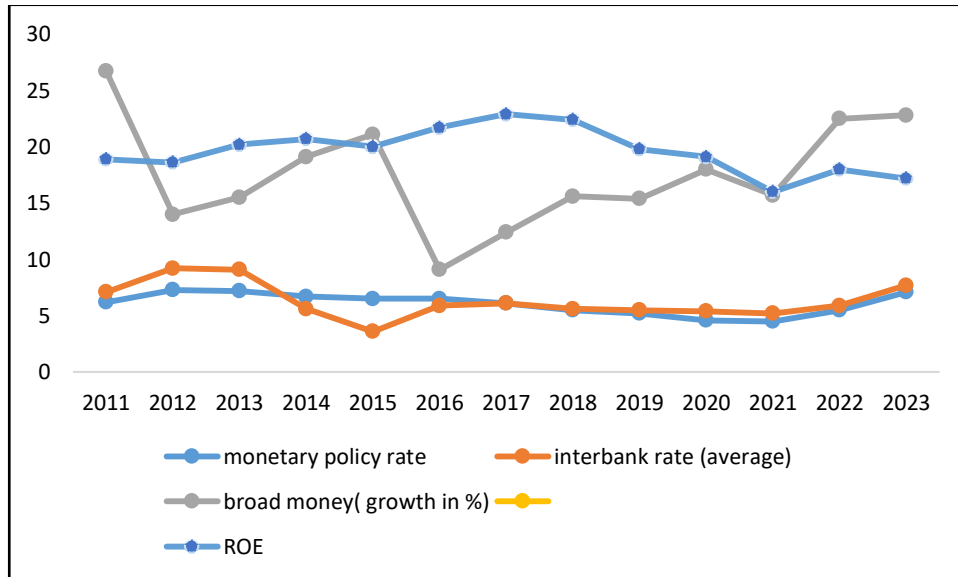
4.4 The trends and correlations between regulatory measures and bank performance.

Table 5: Summary statistics.

	N	Lowest Value	Highest value	Average value	Standard deviation
monetary policy rate	13.0	4.0	7.0	6.0	0.9
interbank rate (average)	13.0	4.0	9.0	6.4	1.5
broad money (growth in %)	13.0	9.0	27.0	17.5	4.9
ROE	13.0	16.0	22.9	19.7	2.0
Valid N (listwise)	13.0				

Descriptive statistics provide more context, suggesting reasonably steady means with considerable variability among variables. The monetary policy rate averaged 6.0 with a limited standard deviation of 0.9, indicating consistent central bank policy. Interbank rates varied somewhat, with an average of 6.4 and a standard deviation of 1.5. Broad money growth had the biggest range, with a mean rate of 17.5% and a standard deviation of 4.9, indicating oscillations in the money supply dynamics. The Bank of Kigali's ROE ranged from 16.0 to 22.9, with a mean of 19.7 and a low standard deviation of 2.0, indicating stable performance.

Figure 1: trend analysis of central bank regulation and BK's return on equity



The trend graph shows the trend of central bank regulatory measures and Bank of Kigali performance from the period of 2011 to 2023. The graph shows that both interbank rate and monetary policy rate increased but at lower level, the graph shows a high fluctuation of money supply and return on equity is increasing.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.742 ^a	.550	.400	1.5471181
a. Predictors: (Constant), broad money (growth in %), interbank rate (average), monetary policy rate				

The table outlines the regression model's fit to the data, including the correlation coefficient between predicted and observed values of the dependent variable (ROE). The R Square represents the proportion of variance in the dependent variable predicted from independent variables. The adjusted R Square is similar but adjusted for the number of predictors in the model. The standard error of the estimate represents the standard deviation of residuals. In the model, the R Square is 0.550, indicating that 55% of the variance in ROE can be explained by the independent variables. The adjusted R Square is 0.400, suggesting a slightly less optimistic fit after accounting for model complexity. The standard error of the estimate is 1.547.

Table 7: Analysis of variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.350	3	8.783	3.670	.056 ^b
	Residual	21.542	9	2.394		
	Total	47.892	12			
a. Dependent Variable: ROE						
b. Predictors: (Constant), broad money (growth in %), interbank rate (average), monetary policy rate						

The table tests the overall significance of a regression model using sum of squares, degrees of freedom, mean squares, F, and sig. It measures the variance explained by the model and the unexplained variance. The F value is 3.670 with a p-value of 0.056, suggesting that the overall regression model might be marginally significant, slightly above the typical significance level of 0.05. The p-value is close to but slightly above the typical significance level of 0.05.

Table 8: Impact of central bank regulations on BK’s return on equity

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19.250	3.215		5.987	.000
	monetary policy rate	1.639	.669	.749	2.449	.037
	interbank rate (average)	-.808	.403	-.607	-2.003	.076
	broad money (growth in %)	-.244	.094	-.593	-2.605	.029
a. Dependent Variable: ROE						

The table presents the coefficients for each predictor variable in the model, including unstandardized coefficients (B), standard error, standardized coefficients (Beta), t-statistic value, and significance level (Sig.). The model explains a moderate amount of variance in ROE (R Square = 0.550), with the overall model's significance marginally supported (p = 0.056). The monetary policy rate and broad money growth percentage are statistically significant in their effects on ROE, while the average interbank rate's effect is not conclusive based on the current data (p = 0.076). The model's significance is marginally supported, suggesting that the included predictors collectively have some explanatory power. The model's interpretation suggests that the monetary policy rate and broad money growth percentage are statistically significant in their effects on ROE, while the average interbank rate's effect is not conclusive.

Table 9: stakeholders' perceptions and qualitative insights on how regulatory measures impact bank performance

Perceptions	Strong Agree (% 135 total)	Agree (% total 135 respondents)
Does central bank regulations help for increase Net income?	77	23
Does central bank regulations help for increase Return on Asset?	65.9	34.1
Does central bank regulations help for increase Return on equity?	48.9	51.1
Does central bank regulations help for increase Return on investment?	53.3	46.7
Central bank regulations help for growth of customers?	59.3	40.7

A study of stakeholders' perceptions and qualitative insights revealed a strong consensus on the positive impact of central bank regulations on bank performance metrics. 77% of respondents strongly agree that central bank regulations increase net income, while 65.9% believe they enhance return on assets (ROA). The perception is more evenly split on return on equity (ROE), with 48.9% strongly agreeing and 51.1% agreeing. 53.3% of respondents strongly agree that central bank regulations are beneficial, while 46.7% agree. Additionally, 59.3% of stakeholders strongly agree that these regulations contribute to customer growth. The data suggests that central bank regulations positively influence various bank performance aspects, with the most substantial agreement on net income.

4.5 Discussion of findings

This study examines the impact of Central Bank regulations on the performance of Bank of Kigali (BK). The demographic profile of respondents is detailed, with a majority falling within the age group of 31-50 years. The study also examines the strength and direction of relationships between regulatory measures and bank performance. The correlations between key variables such as monetary policy rate, interbank rate, broad money growth, and Return on Equity (ROE) were found to be significant. Increases in the central bank's policy rate corresponded with higher interbank borrowing costs, while broad money growth exhibited a moderate negative correlation with ROE, suggesting that higher rates of money supply expansion may reduce bank profitability. Trends and correlations between regulatory measures and bank performance were also examined. The monetary policy rate showed a stable mean of 6.0 with low variability, reflecting consistent

central bank policy. Interbank rates demonstrated greater variability, suggesting fluctuations in borrowing costs within the banking sector. Broad money growth exhibited the highest variability, indicating significant changes in money supply dynamics. BK's ROE ranged from 16.0 to 22.9, with a mean of 19.7 and low variability, indicating stable performance despite external fluctuations. The regression model's performance in predicting ROE based on monetary policy rate, interbank rate, and broad money growth was found to explain 55% of the variance in ROE. The analysis of variance indicated that the included predictors collectively contribute to explaining ROE variations. Stakeholders' perceptions on the impact of central bank regulations on bank performance metrics were found to be generally positive. A significant majority agreed that these regulations enhance net income (77%), return on assets (65.9%), and contribute to customer growth (59.3%). Responses on return on equity were more evenly split, with 48.9% strongly agreeing and 51.1% agreeing on the positive impact.

CHAPTER 5. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.

5.1. Introduction

This chapter aims to analyze the impact of central bank supervision on the performance of business enterprises in Rwanda and conduct a special study on Bank of Kigali within the scope of research objectives and learn more about Chapter 4 of the Regulations. Rwanda Central Bank Audit occurred. to work. This study aims to investigate the relationship between central bank oversight and commercial banks.

5.2. Summary of findings

This chapter consolidates the findings derived from the study on the impact of Central Bank regulations on the performance of Bank of Kigali (BK). The demographic analysis revealed that a significant proportion of respondents fell within the 31-50 age bracket and held university-level education, indicating a mature and educated workforce at BK. Quantitative analysis demonstrated notable positive correlations between the monetary policy rate and interbank rates, indicating that changes in central bank policy directly influence borrowing costs within the banking sector. Conversely, broad money growth exhibited a moderate negative correlation with Return on Equity (ROE), suggesting potential implications for bank profitability as monetary expansion increases. The regression model, which explained 55% of the variance in ROE, highlighted the monetary policy rate and broad money growth as significant predictors. Stakeholders' perceptions overwhelmingly favored the positive impact of Central Bank regulations on net income and customer growth, though opinions on ROE were more varied.

5.3. Conclusions

The study concludes that Central Bank regulations significantly influence Bank of Kigali's operational dynamics and financial performance. Regulatory frameworks play a critical role in shaping BK's ability to manage risks, optimize profitability, and adapt to changing economic conditions. The findings underscore BK's resilience and strategic adaptation to regulatory changes, reflecting its capability to navigate complex financial environments under the Central Bank of Rwanda's oversight. Stakeholders' positive perceptions reinforce the importance of effective regulatory oversight in fostering stability and growth within Rwanda's banking sector. The study

Additionally, it emphasizes the importance of ongoing assessment and review of regulatory effects to maintain alignment with BK's strategic objectives and overall sector stability.

5.4. Recommendations

The Central Bank of Rwanda is implementing several measures to enhance the regulatory communication and clarity within the Bank of Kigali (BK). These include clear and transparent guidelines, tailored regulatory frameworks, and continuous stakeholder engagement. Clear and transparent guidelines help BK align its strategies with regulatory expectations, enhancing compliance and operational efficiency. Tailored frameworks acknowledge BK's unique position within the Rwandan banking sector, addressing specific challenges and opportunities. This approach fosters a regulatory environment that ensures compliance, promotes sustainable growth, and minimizes unintended operational disruptions. Continuous stakeholder engagement and feedback mechanisms are also crucial for refining regulatory frameworks in real-time. This dialogue fosters a collaborative approach to regulatory compliance, ensuring regulatory reforms are well-informed, pragmatic, and supportive of BK's long-term strategic goals. Investing in ongoing education and capacity-building initiatives within BK enhances organizational readiness to navigate regulatory complexities. Training programs tailored to BK's staff ensure a deep understanding of regulatory requirements and best practices, empowering BK to proactively adapt to evolving regulatory landscapes.

Recommendations to commercial banks

- 1.** To ensure the **prudential norms** that were set by the central bank are adhered to avoid the supervisory power being imposed on them with the relevant sanctions.
- 2.** To set the provision mechanism to ensure that there is a **bearable provision level** at each class level of loan issue to the borrowers, lenders, and the third parties of the commercial banks, which will reduce the loss that was not estimated as it is stated in credit regulation of the central bank (BNR).

5.4.1 Areas for further study

Future research should focus on longitudinal studies to assess the sustained impacts of regulatory changes on Bank of Kigali's performance, compare it to other Rwandan commercial banks, explore stakeholders' perspectives, and explore emerging regulatory trends like digital finance regulations for future challenges and opportunities.

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Appendices

Questionnaire addressed to the employees of bank of kigali

Dear Respondent,

I, **CYIZA Hellen** students of University of Rwanda, College of Business and Economics in Master of Business Administration in Finance, Currently I am carrying out research on the “**IMPACT OF CENTRAL BANK REGULATIONS ON THE PERFORMANCE OF COMMERCIAL BANKS IN RWANDA**”, You have been selected as a respondent and you are requested to spare few minutes of your time and express your views on the issues raised in this questionnaire. It is purely academic and your views will be treated with utmost confidentiality.

Thank you.

I. Personal identification

1.Age of respondents (Age groups)

18-30 years old

31-40 years old

41-50 years old

50+ years old

2.Education level of respondents

University Level

Secondary Education

Other Certificate

II. Question related to central bank regulation

3. What are the activities of central bank regulations?

Liquidity regulation

Capital adequacy regulation

Implementaion technology

Credit regulation

Loan regulation

4. Does central bank regulations help for increase Net income?

Strong Agree

Agree

Disagree

Strong disagree

5. Does central bank regulations help for increase Return on Asset?

Strong Agree

Agree

Disagree

Neutral

Strong disagree

6. Does central bank regulations help for increase Return on equity?

Strong Agree

Agree

Disagree

Neutral

Strong disagree

7. Does central bank regulations help for increase Return on investment?

Strong Agree

Agree

Disagree

Neutral Strong disagree

8. Do central bank regulations help for increase profitability?

Strong Agree

Agree

Disagree

Neutral

Strong disagree

9. Central bank regulations help for growth of customers?

Strong Agree

Agree

Disagree

Neutral

Strong disagree

Thank you for your cooperation!

THE IMPACT OF CENTRAL BANK REGULATIONS ON THE PERFORMANCE OF COMMERCIAL BANK IN RWANDA

ORIGINALITY REPORT

5%	6%	2%	5%
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