UNIVERSITY OF CAPE COAST

# DETERMINANTS OF RURAL BANKS PROFITABILITY IN GHANA: A CASE STUDY OF RURAL BANKS IN UPPER EAST REGION

TOBIL MARY NYAGPOKA

2021

UNIVERSITY OF CAPE COAST

# DETERMINANTS OF RURAL BANKS PROFITABILITY IN GHANA: A CASE STUDY OF RURAL BANKS IN UPPER EAST REGION

BY

TOBIL MARY NYAGPOKA

Dissertation submitted to the Department of Accounting of the School of Business Studies, University of Cape Coast, in partial fulfilment for the award of the Master of Business Administration Degree in Accounting

DECEMBER 2021

# DECLARATION

## Candidate's Declaration

I hereby testify that this dissertation is my original work; accomplished on my own effort and where it is indebted to the work of others, acknowledgement has duly been made. I confirm that this work has not been presented in this or any other University for award of a diploma or degree.

Candidate's Signature……. Date……

Name: Tobil Mary Nyagpoka

## Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Signature…… Date……

Name: Mr. Wisdom Astunyo

## ABSTRACT

According to the findings of this study, the profitability of Ghanaian rural banks in Ghana is being investigated. The rural bank's return on assets (ROA) and return on equity (ROE) are two of the most significant measures of profitability (ROE). Analysis includes an extra set of independent factors, including the size and quality of the bank's branch network, as well as the bank's capital adequacy and liquidity. Five years of panel data from five rural banks in Ghana's Upper East area are used to explore fixed and random effect models for fixed effect models. The Ghanaian Central Bank provides the statistics. Among the macroeconomic variables considered in this research are GDP, inflation and interest rates, as well as the currency rate. The profitability of the five banks studied (2014 to 2018) changes during this time, according to the report. As measured by ROAs, Ghanaian rural banks' capital adequacy ratio and operational efficiency have the greatest impact on their profitability, according to the study's findings (ROA). There is no correlation between rural bank profitability (ROA and ROE) as measured by macroeconomic factors (interest rate, inflation rate, exchange rate, GDP growth rate) and rural bank profitability (ROA and ROE). A growing economy, according to the findings of the research, will lead to increased profits for banks, which will in turn benefit the government.

## ACKNOWLEDGMENTS

Admittedly, I cannot say it was my personal effort alone that has culminated into this research piece. First and foremost, my profound gratitude goes to my supervisor, Mr. Wisdom Astunyo, for his invaluable guidance and directives in conducting this study. I sincerely appreciate his patience and efforts. Once more, I say thank you, Sir!

I am also thankful to the management and staff of, Bongo Rural Bank, Naara Rural Bank, Tuode Rural Bank, Bessfa Rural Bank and Builsa Community Bank Limited their support and cooperation in my search for the relevant materials for this study. I dully acknowledge all writers already quoted in this text. I am also indebted to my parents for their unflinching moral and financial support all through my life especially at the higher level of my educational career.

## DEDICATION

To my husband, Mr. Samuel Ataribanam and lovely children

# TABLE OF CONTENTS

# LIST OF TABLES

## LIST OF FIGURES

## LIST OF ABBREVIATIONS

| | |
|---|---|
| ARB | Association of Rural Banks |
| BoG | Bank of Ghana |
| GDP | Gross Domestic Product |
| IFAD | International Fund for Agricultural Development |
| RCBs | Rural and Community Banks |
| UER | Upper East Region |

# CHAPTER ONE

# INTRODUCTION

The banking industry's working environment has changed dramatically in Africa and the developed world as a whole. In a number of nations, the banking industry has undergone reform. Initially, they debuted as part of the country's economic recovery effort in the late 1980s (ERP). Interest rates were somewhat liberalized starting in 1987, and sectoral credit limits were removed the following year. Since foreign exchange access and foreign exchange office licenses have been liberalized, this has become required (Brownbridge & Gockel, 1996).

## Background to the Study

Economies in many countries are heavily reliant on the financial sector, with banks serving as the sector's primary focal point, particularly in countries with a limited capital market (Matthew & Laryea, 2012). An economy's performance is significantly influenced by the health of a country's banking system (Almaqtari, Al-Homaidi, Tabash & Farhan, 2019).

The performance of commercial banks in Africa has remained weak notwithstanding the reforms in the financial sector implemented in the 1990s with the goal of increasing productivity, efficiency, and profitability. Service delivery via private agents has severe flaws (Munyambonera, 2013). In addition to providing information on the state of the economy in any given year, profit analysis is critical since profits are a significant indicator of long-term development and employment in the United States. Businesses' spending and saving decisions are influenced by increased profits, which in turn contribute to economic growth. This is because an improvement in earnings

strengthens firms' cash flow status and creates more stability in the source of funding for company spending. (Ayanda, Christopher & Mudashiru, 2013).

Ghana has a universal banking system, which means that all banks, regardless of their size, are allowed to conduct banking activity. As a result of this, the following pieces of legislation have been enacted: the 1992 Constitution of Ghana, the Bank of Ghana Act, Amendment2016 (Act 918), the Banking Act (Act 738) and the Companies Act of 2019, Act (992). In particular, progress has been made in the banking industry in terms of the expansion of branches throughout countries, metropolitan areas, municipalities, and local government districts. The fact that the re-injection of money was unable to control the high interest rate on loans is worrisome. As far as I can tell, it's nothing more than a safety net for investors. It's been a long time since the central bank has cut its policy rate, which determines the interest rate, and thus the interest rate has not been cut. As a result, commercial banks are less appealing to specific economic regions, particularly rural ones (Boadi1, Li & Lartey, 2016).

A few years after 1976, the Bank of Ghana formally adopted the rural banking concept, allowing it to provide banking, credit, and other services to the country's small-scale farmers and other types of development projects throughout Ghana (Allen, Otchere & Senbet, 2011). Prior to the founding of the Association of Rural Banks (ARB) as the apex bank, there was a lack of coordination among the rural banking industry, which resulted in the Central Bank being overburdened in its regulatory responsibilities toward the rural banks. Between 1999 and 2000, a total of 23 distressed rural banks had their licenses revoked as a result of this action (Asiedu-Mante, 2011).

Rural Banks in Ghana are a network of more than 144 independent unit banks that work together to provide financial services to the rural poor (Bank of Ghana, 2018). They are supervised by the Bank of Ghana and, as such, fall within the jurisdiction of the financial sector. These banks are the most significant contributors to the development of small companies in Ghana, and they account for more than half of the country's total banking locations (Okyere, 2017). As a result, rural banks exist to provide financial intermediation in rural areas, allowing for the swift regulation of the payment system and the expansion of the practice of saving among the populace. (Owusu-Antwi, Antwi, & Crabbe, 2014; Crabbe, 2014).

Because of the significant contributions rural banks make to socio-economic development, it is essential that they continue to provide basic financial services to the poor while also being financially sustainable. This is evaluated by the financial institution's ability to carry out its activities on a consistent basis in order to achieve its stated objectives while remaining financially sound in the absence of domestic subsidies or foreign assistance, among other factors (Okyere, 2017; Filene, 2011).

**Statement of the Problem**

There has been an increase interest in developing a framework of micro and macro indicators for monitoring financial risk in recent years (Kanas, Vasiliou & Eriotis, 2012). After multiple financial and banking crises ravaged various countries, the government has taken action (Adusei, 2015). When it comes to creating these measures, the profitability of banks is at the forefront of the conversation. There are many reasons for this, but the most important is that an efficient and stable banking sector helps to strengthen the

overall financial system's resiliency (Athanasoglou, Brissimis & Delis, 2008). In order to maintain a stable financial system, bank viability and the factors that influence it are critical considerations (Borio, 2003; Mörttinen et al., 2005).

Ghana is one of West Africa's largest countries with a stable financial structure that is characterized by a diversified array of financial institutions. (Appiah, Asamoah & Narkotey, 2015), until the year 2018 where the minimum capital requirement of GH¢ 400 million imposed by Bank of Ghana made some of the banks to merge and others fold-up. As at August 2018, there were 34 commercial banks and 144 rural banks in Ghana before the clean-up in the banking sector in 2018 (Bank of Ghana, 2018). Specifically, the central bank schedule that rural banks have until 28 February, 2020 to meet a minimum capital requirement of GH¢1million. In view of that the current commercial banks have reduced from 34 banks to 23 banks after the clean-up.

In light of the preceding, uncovering the factors that influence bank profitability should be of interest to a variety of stakeholders, including academics, bank management, financial markets, and bank supervisors. That's why empirical assessments of bank profitability are so prevalent in the banking literature (Adusei, 2015; Appiah et al, 2015; Sufian & Habibullah, 2009; Dietrich & Wanzenried, 2014; Flamini, Schumacher & McDonald, 2009). According to studies, there is still no definitive solution to the issue of what elements contribute to a bank's profitability, since the statistical significance of the variables discovered varies depending on the country and time period studied (Kanas et al., 2012). The fact that previous research on bank profitability have mostly focused only on commercial banks is also

worth noting here. Through the use of evidence from Ghana's rural banking business, this research effort contributes to the ongoing intellectual discussion on bank profitability. As a result, bettering rural banks' performance and efficiency in emerging countries, notably in West Africa, would need identifying the elements that determine their profitability. That's why we set out to investigate the profitability of rural banks in Uganda's Upper East Region (UER) as a case study to show how our results may be applied throughout the country.

**Purpose of the Study**

The study examined the determinants of rural banks profitability in Ghana, an empirical study of rural banks in Upper East region.

**Objectives of the Study**

The objectives of the study are to:

1. determine the profitability of the rural banks from 2014 to 2018.
2. determine the relationship between bank-specific variables and rural banks profitability.
3. determine the relationship between macroeconomic variables and rural banks profitability.

**Research Questions**

To achieve the purpose of this study, the following research questions were used as a guide to the study.

1. What is the profitability of rural banks from 2014 to 2018?
2. What is the relationship between bank-specific variables and rural banks profitability?

3. What is the relationship between macroeconomic variables and rural banks profitability?

**Research Hypothesis**

The study formulates hypothesis as follows:

**Hypothesis 1**

Null Hypothesis (Ho): there is no significant relationship between bank-specific variables (bank size, capital adequacy ratio, asset quality, liquidity, deposits, asset management, operational efficiency, leverage and branches) and rural banks profitability (measured by ROA).

Alternative Hypothesis ($H_1$): there is significant relationship between bank-specific variables (bank size, capital adequacy ratio, asset quality, liquidity, deposits, asset management, operational efficiency, leverage and branches) and rural banks profitability (measured by ROA).

**Hypothesis 2**

Null Hypothesis (Ho): there is no significant relationship between macroeconomic variables (GDP growth rate, interest rate, exchange rate and inflation rate) and rural banks profitability (measured by ROA).

Alternative Hypothesis (Ho): there is significant relationship between macroeconomic variables (GDP growth rate, interest rate, exchange rate and inflation rate) and rural banks profitability (measured by ROA).

**Significance of the Study**

This research work will provide a meaningful contribution to several areas. It will have significant implications for managers of rural banks, government and prospective researchers. First of all, managers of rural banks will get to know about the impact of banks operational efficiency on

profitability. Increased research on rural and community banks would be good, since this is an area that has garnered little academic attention in the United States so far.

Again, rural banks are considered as playing an important in improving the living conditions of people in Ghana. Rural banks contribute significantly to rural growth, unlike commercial banks that offer financial services to international organisations. The sector, mainly rural people, is seen as the largest provider of financial services to the broader population (International Fund for Agricultural Development [IFAD], 2008). According to Okyere, rural banks account for approximately half of the total number of banking outlets in Ghana (2017). In view of the enormous role that rural banks play in Ghana, any research, especially those focusing on rural banks and their profitability, would enable government and academics to monitor how the sector operates in all areas of growth.

This research would contribute greatly to research and strategy. It statistically predicts, in terms of its research contribution, the various variables that could influence the viability of rural banks. Study would enable policymakers to critically define the basic variables that need to be based on in the development of policies to influence the financial viability of rural banks in terms of their policy contribution.

**Delimitation**

Five rural banks in Ghana are included by this research. Toende Rural Bank, Bongo Rural Bank Limited, Builsa Community bank and Naara rural bank are some of the financial institutions that make up the Bessfa rural banking system. All of the banks that were employed in this study are located

in Ghana's Upper East Region. For the purposes of this research, banks are included since they have been in the banking industry for a longer period of time than other types of financial organizations. The audited financial statements of rural banks were scrutinized in order to assess whether or not they were financially sustainable. Profitability indicators such as ROA and ROE were used to evaluate the profitability of rural banking organizations. This is due to the fact that these measurements have been employed in several investigations.

**Limitation**

Each human endeavour is responsible for variables that impede its development. Similarly, this research is likely to face certain drawbacks that will impede its development. The collection of data might be a difficult task. Some of the banks might not be willing to provide their financial statements for a period of five years.

The study will not cover all rural banks in Ghana. It will only be limited to rural banks in the UER instead of all the 16 regions in Ghana. This is therefore a limitation for generalization purposes.

Also, the researcher might face a difficult in reclassifying some of the accounts figures because of variations in the format of presenting the financial reports. For example, some reports may less current liabilities from current assets to arrive at working capital while other reports may add the current liabilities to the long-term liabilities to arrive at total liabilities. In spite of this, attempts will be taken to minimize the influence of these limits on the study's results.

**Organization of the Study**

The findings of the investigation will be organized into five major chapters. Sections to be included in this chapter include: The study's background; a summary of the issue; aims; research questions; importance; scope and limits; and methodological considerations. The study's literature review will be discussed in detail in Chapter Two. The seminar will address important topics related to the factors that influence bank profitability, both in Ghana and within a broader international framework. In this section, previous researchers' theoretical and empirical work will be reviewed in the context of the proceedings. Chapter 3 of the report will include the research strategies used to meet the researcher's goals. Design, sample size/sample of approaches, data collecting instruments/methods/analytical models are all examined in this section. A primary source's data was the focus of chapter four, which dealt with data presentation and analysis During this chapter, we focused on summarizing and recommending further study based on our results.

# CHAPTER TWO

# LITERATURE REVIEW

## Introduction

This article examines the research on the profitability of rural banks in the banking industry and the factors that influence it. An overview of the rural banking sector in Ghana, profitability, a theoretical assessment, internal and macro-economic variables that impact a bank's profitability, and a discussion of the rural banking industry in Ghana are some of the subheadings in this chapter. The study goes on to discuss the conceptual framework of the study in greater detail, and the chapter concludes with a summary and concluding remarks that are relevant to the study.

## Theoretical Review

Based on an existing theory in the field of study that is related to and repeats the research premise, it is a framework for doing research (Adom, Hussein & Adu-Agyem, 2018). According to Nkegbe and Ustarz (2015), there is a wide range of theories on what influences a bank's profitability. SCP, efficiency hypothesis, and market power (MP) theories have been used extensively in performance studies. Consequently, this research relied on the SCP model, the MP theory, and the efficiency hypothesis.

## The structure conduct performance model

It was developed and implemented a model of market structure, behavior, and performance that was developed and tested using a neoclassical study of several business sectors (Shaik, Allen, Edwards & Harris, 2009). Participants in the concept of structure conduct performance (SCP) believe that market performance is determined by market conduct (such as pricing

behavior, legal strategies, merger and acquisition activity), which is determined by market structure (such as the number of purchasers and merchants in a given market and whether or not there are barriers to entry) (Ahokpossi, 2013). According to Haron (1996), the SCP hypothesis was initially employed in the 1950s by analysts dealing with manufacturing business data, followed by researchers working on banking studies in the 1960s, and lastly by researchers working on banking studies in the 1970s and 1980s.

When it comes to an industry's structure, An and Baye (2010) found that it reflects features such as a high degree of market concentration as well as innovation and economic conditions. As a result of the operation of the market system, Grygorenko (2009) exposes performance to include both profits and social welfare. In order to close the loop on organizational behaviour, the SCP paradigm brings these three aspects of the company together. As a result, the fundamental characteristics of market asset allocation are formed by this behaviour. Enterprises operating in highly concentrated sectors are more productive than businesses operating in less concentrated industries, according to Bain (1951). There is a correlation between the concentration of a certain industry and productivity, according to Bain 1951; Sathye, 2005; Barathi, 2007 and Samad, 2008. An assumption of the SCP hypothesis is that an industry with higher degrees of concentration allows for the conspiracy of corporations, resulting in market control that is profitable.

**Efficiency hypothesis**

Larger earnings for companies are not primarily attributable to collusive activity, as per the efficiency hypothesis, but rather to their

effectiveness, which gives them a significant portion of the industry. In an unexpected twist, bank profitability is determined, in some form or another, by the institutions' competence rather than market concentration (Grygorenko, 2009). As stipulated by this concept, an institution that performs better than its competitors are compensated by its reduced operating expenditures and is considered a component of the entire industry. Therefore, contrasts at the degree of productivity make an inconsistent distribution of client base subsequently concentration and financial gains (Mensi, 2010).

**The market power (MP) theory**

Another hypothesis that clarifies banks execution is the market power (MP) theory. The MP hypothesis expresses that expanded outside market powers bring about financial benefit. Only enterprises with a significant market share and a very distinct product line may beat their rivals and achieve monopolistic economic advantages, according to theory (Ongore & Kusa, 2013).

Each of the three basic market conditions outlined below can be applied to a particular market or an entire economy. The first is the previously mentioned ideal condition of perfect competition. As well as a large number of businesses producing identical or nearly identical goods, a perfect market would have virtually no barriers to entry. Due to the lack of market power that can be gained by an agricultural commodity producer, agricultural markets are frequently cited as examples of markets that are close to perfect competition.

A monopoly occurs when a single company has a sway over all or a significant portion of the market for a product or service, allowing it to set its own prices. Although utility companies are granted limited monopolies, their

ability to raise prices is usually limited by government regulation. Small numbers of businesses dominate an oligopoly market, making it difficult for new players to enter. Market power is typically shared rather than concentrated in oligopolies. An example of an oligopoly is the cell phone service market, which is dominated by a few companies and has high barriers to entry.

**Conceptual Review**

Central Ghana's Asante Agona Nyarkrom was the site of Ghana's first rural bank that launched in 1976 after the Bank of Ghana put the Philippines' rural banking idea into an adequate financial framework and recognized it as such (Afriyie & Akotey, 2012). Rural and Community Banks (RCBs) in Ghana are run and owned by the people who live in the areas they serve. Although regional cooperative banks are permitted to participate in commercial banking operations on occasion, they are not permitted to operate full-fledged branches in other countries (Aboagye & Otieku, 2010). Formalized financial intermediation for rural communities (such as putting together rural savings and directing them as credit offices to inadequate units, the bulk of which are microenterprises) is legally required by local governments (Bank of Ghana, 2006).

As of August 2018, there were 144 RCBs in existence (BoG, 2018). As shown in Figure 1, the northern part of the country, which includes the Northern, Savanah, North-East, Upper East and Upper West region, has about 11% of the total rural banks in Ghana. However, the regions with more than 20 RCBs are Ashanti, Bono/Bono East/Ahafo, and Eastern region. The regional distribution of licenced RCBs is presented in Figure 1.

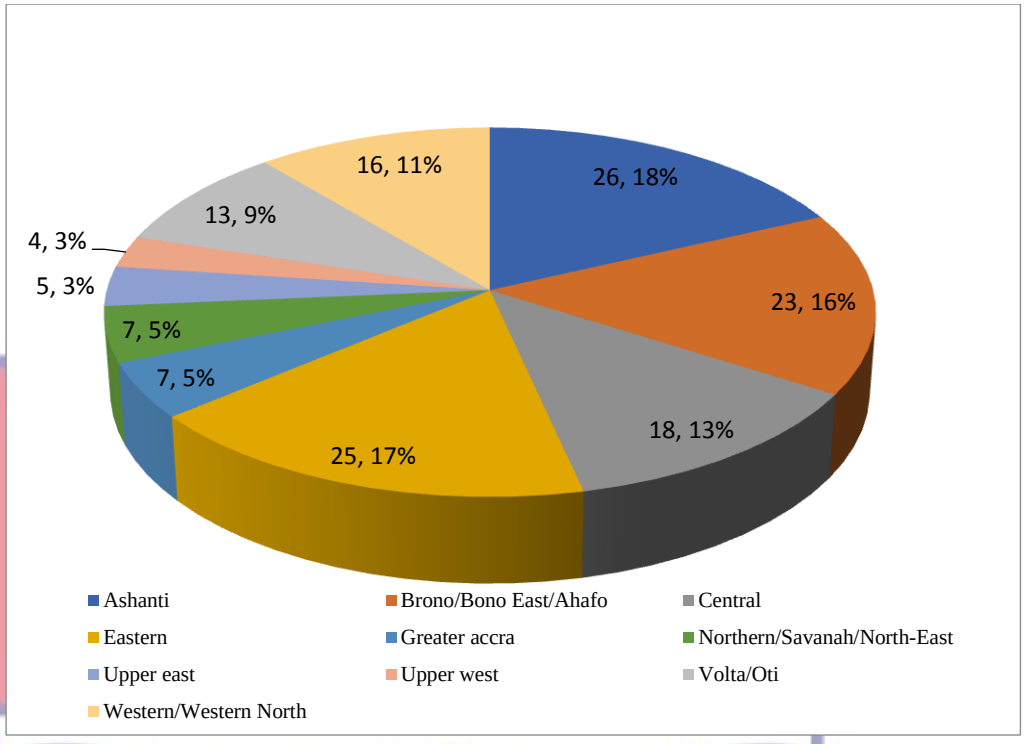


*Figure 1*: Regional Distribution of Licenced Rural and Community Banks

Source: Author's own construct from data compiled from the BoG (2019)

It's worth noting that the Ghanaian Central Banks (RCBs) have GH343.9 million in deposit, GH224.7 million in loan advances, GH63.3 million domestic cash transfers, and universal cash transfers worth GH9.3 million as of 2008. (Nair & Fissha, 2010). In spite of this, their combined benefit and total assets remained at $15.6 million and $622.3 million as of 2008. (IFAD, 2008).

However; in 2017, the RCBs boast of GH¢277,918 million in deposit, advanced GH¢29,907 million in loans, delivered GH¢613.3 million domestic cash transfers, GH¢92.3 million universal cash transfer and encouraged check clearance worth GH¢3,323.1 million. Notwithstanding, their combined profit and total assets remained at GH¢48,931 million and GH¢326,338 million respectively as at 2008 (ARB Apex Bank, 2017).

Initially recognized as a Filipino concept in 1960, the Bank of Ghana later incorporated it into the appropriate financial structure and made it officially operative in 1976 with the establishment of Ghana's first rural bank, located in the Central part of the country (Afriyie & Akotey, 2012). The members of the surrounding communities who own and manage local community banks (RCBs), ideally from the same geographical area, are known as community bankers. It is illegal for regional cooperative banks (RCBs) to build fully fledged branches in various areas outside of their jurisdiction, despite the fact that they occasionally operate as commercial banks (Aboagye & Otieku, 2010). RRBs are required by law to offer rural areas with institutionalized money-related intermediation; to promote the formal banking way of life among rural citizens; and to encourage rural dwellers and industrialization (Bank of Ghana, 2006).

**Bank Profitability**

The meaning of performance oscillates and it relies upon the setting wherein it is characterized. As per Yong-lin, and Ying-ying, (2012), performance is the methodology for receiving and dealing with the current asset to accomplish specified objectives and goals. That is, it is the ability to adopt strategies that could conquer difficulties so as to accomplish an objective within an arranged period.

According to Sanni (2009), financial performance is defined as the potential earning ability of a business in comparison to its costs. The return on assets (ROA), which is a proxy for money-related performance, measures an organization's overall profit performance, as well as its productivity in using resources. As a result, the proportion estimates a company's income before

interest and taxes in relation to its absolute net assets in this manner. It is regarded as a powerful indicator of how firms use their resources to generate income prior to making legally binding commitments to pay creditors (Appiah et al, 2015).

This gainfulness proportion distinguishes how well rural banks are really ready to settle on intuitive decisions on their expenditure on new assets. Here, ideal decision and productive utilization of total resource base is relied upon to expand bank benefit (Mehmet & Eda, 2009). Put in effect, return on absolute assets is an indicator of the firms' proficiency and viability to produce benefit from resource. However, majority of the earlier research works have estimated profit by ROA and return on equity (ROE).

Research has previously looked at bank profitability as a component in banks-explicit (inner) and macroeconomics-determinants-of-profitability (outer) (Chowdhury & Rasid, 2017; Singh & Sharma, 2016; Zampara, Giannopoulos & Koufopoulos, 2017; Appiah et al, 2015). Tiberiu (2015) proposes that internal components from financial statements of a bank, while outer components are systematic powers that mirror an economic situation.

**Empirical Review**

Empirical review involves the evaluation of a conclusion drawn from other related studies that are based on data gained from real-life experience or observations that can be used as objective proof (Kumar, 2011). It brings out the information and thoughts that have been set up on the study topic, and what their strength and shortcoming are. The impetus behind this section of the study is to unravelled the current gaps in literature and how the present research adds to resolving such gaps. The part additionally gives the premise

to comparison of the results of the present study to existing writing. It does along these lines concentrated on the factors that influence a bank's performance.

Despite the fact that the definition of profitability varies between studies, the determinants of profitability are heavily investigated experimentally in banking writing. Some studies have concentrated on a single country's bank profitability, while others have looked at a group of nations (Vong & Chan, 2009). Govori (2013) found that returns on assets and returns on equity are the primary determinants of bank profitability, which is consistent with earlier results. Nassreddine, Fatma, and Anis (2013) suggest that the factors that influence bank performance can be divided into two categories: those that affect the organization internally and those that affect the organization externally. Internal determinants are also referred to as microeconomic determinants when discussing microeconomic components. However, external determinants are those ones that relate directly to the bank's financial and legal surroundings.

There have been a variety of worldwide examinations into the elements that determine a bank's profitability, but the results have been varied on a global scale (Saona, 2016; Garcia & Guerreiro, 2016; Al-Homaidi, Tabash, Farhan & Almaqtari, 2018). Studies such as Rani and Zergaw (2017) and Zampara et al (2017) indicated that bank explicit determinants are identified with the immediate aftereffect of management decisions of a bank, for example, capital adequacy proportion, assets quality ratio, liquidity ratio, operating proficiency proportion, deposit proportion and bank size.

External factors accommodate the financial and legal conditions that influences the activities of banks, for example, inflation rate, exchange rat gross domestic product (GDP) growth rate, cocoa prices, crude oil prices and gold prices (Sanni, 2009; Tiberiu, 2015). However, despite the banking sector's tendency toward global diversification and the increased use of money-related engineering to monitor business cycle forecasting risk, Sufian and Chong (2008) claim that profitability in the industry is heavily dependent on macroeconomic circumstances.

Commercial banks in India have recently been studied by Al-Homaidi et al. (2018). Three major characteristics are taken into account when calculating the profitability of Indian financial institutions. A return on investment (ROA), a net present value (NIM), and a net present value (ROE) are acronyms for these concepts. It also makes use of a large number of independent variables, such as bank-explicit variables, which are variables that are specific to a particular bank and include factors such as bank size and asset quality as well as capital ampleness, liquidity, operational competence, deposits, leverage, resource management, and the number of branches.

Additionally, the rate of inflation, the interest rate, and the currency rate are all taken into account as macroeconomic factors in this research, on top of the GDP. Statistical significance was found in all bank-explicit characteristics, except for the number of branches, according to the findings and conclusions of the study by the National Institute of Management (NIM) (NIM). There was a negative correlation between Indian commercial banks' profitability and all of the study's macroeconomic variables, which were all found to be statistically significant. The connection between the two was

examined in a ground-breaking study. Fixed panel data analysis and the Dumitrescu and Hurlin Granger causality test were used by Rjoub et al., (2017) to investigate the link between Turkish bank stock price movements and a number of minor as well as larger scale factors from the third quarter of 1995 to the fourth quarter of 2015. Bank stock prices can be correctly valued by both large- and micro-scale variables. This research reveals that a variety of factors like asset quality, management quality, profitability, bank size, cash availability, and loan cost are all linked to total stock cost. Investors place a high value on this. As a result, the value of bank shares decreases when there is an economic downturn. For instance, Saona (2016) derives conclusions from commercial bank data collected in seven Latin American countries between 1995 and 2012. However, bank capital ratios have been found to be associated with a lower level of income diversification and profitability, as well as a higher level of market focus.

According to a study published in 2017 by Salike and Ao, asset quality is critical to the profitability of Asian banks. An analysis of the panel data of 947 Asian banks from 2001 to 2015 was carried out using fixed effect estimation. Because this was a panel study, fixed effect estimation was applied to the panel data. According to the conclusions of the research, poor asset quality has a considerable influence on financial institution profitability (banks). The profitability of financial institutions is affected by a variety of factors, some of which are specific to banks, such as capital sufficiency, revenue diversification, and operational inefficiencies. Real GDP growth has the largest influence on the financial sector's performance when it comes to macroeconomic challenges. According to Garcia and Guerreiro (2016), a five-

year study of 27 universal banks' profits in Portugal was completed from 2002 to 2011, and the results were released in 2016. Minimally square calculations of fixed outcomes are calculated using net income, ROAs, and ROE as three major profitability measures (NIM). This research employed a variety of independent criteria that were connected to both bank-specific as well as macroeconomic and industry-specific data that were not taken into account in past studies. It was also analysed for statistical purposes between 2008 and 2011. Independent factors included in this research have a statistically significant effect on the three profit indicators.

Sufian and Chong (2008) utilized the Philippines' rising economy as a case study to examine the variables that influence the profitability of Philippine banks over the period from 1990 to 2005. Overall financial institution profitability is influenced by all bank-specific determining variables, according to empirical findings. In this study, profitability is negatively affected by bank size, risk, and cost choice, whereas non-interest income and capitalization are positively affected. Even while macroeconomic variables including economic development, stock market capitalization, and money supply have not been adequately defined to completely explain the disparities in bank profitability, the research found a negative association between bank profitability and inflation. There's a direct association between bank profits and inflation.

In the Ghanaian setting, fewer investigations that have been undertaken concerning the determinants of banks profitability and their discoveries have also reported results. According to Nkegbe and Ustarz (2015), the Ghanaian banking industry's determinants of bank performance were examined between

the years 2000 and 2010 using trend graphs, panel data estimation methods, and equations. Using a variety of performance measurements, it was determined that the banks' performance has declined over time. A study based on the factors shows the market share of loans is positively linked to performance, thereby validating the idea of relative market power. Following a study conducted in Ghana, it was discovered that the country's banks are allegedly passing on their inefficiencies to customers by raising loan interest rates while simultaneously lowering deposit interest rates.

Using data from 112 rural banks, Adusei (2015) calculated the profitability of each institution. On the whole, the data indicate that the size of the bank, the risk of funding it, the diversification of its assets, the risk of liquidity and the stability of the bank are all major determinants of rural bank profitability. A bank's future profitability is reduced as financing risk rises over time; on the other hand, a bank's size, diversity, liquidity risk, and stability increase its future profitability.

Appiah and colleagues (2015) used panel data analysis to study the characteristics that impact rural banking profitability in Ghana. A rural bank's success is positively correlated with the quantity of deposits and liquidity it has accessible to it. Performance of rural banks, on the other hand, is inversely associated to the quality of assets and the size of the bank.

For instance, in Ghana's rural and community banks, Boadi et al. (2016) examined the association between bank-specific macroeconomic parameters and various risk indicators for bank profitability (RCBs). From 2005 to 2013, 114 RCB annual financial reports were subjected to a fixed effect panel regression analysis. The time period covered by the study is 2005-

2013. A variety of research suggests that RCB profitability is affected by a number of variables, including: capital adequacy, asset quality, liquidity management, investment, inflation (as measured by inflationary pressures), and funding risk (as measured by funding volatility). The findings also suggest that management efficiency and bank size are not significant contributors to RCB profitability, though they can be considered as such in some cases.

Gefli (2012) studied the elements that impact RCB's capacity to maintain a profitable financial position. A combination of internal and external elements was used in the evaluation. The analysis relies mostly on data from the financial institutions' annual financial statements. Researchers used a panel data set of 200 observations to study the performance of 50 rural banks in Ghana from 2006 to 2010. A wide range of sources were used to compile the data collection.

The empirical findings reveal some fascinating details about the factors that affect RCB profitability. Increasing non-interest income, asset size, and the expansion of GDP and money supply all have an effect on rural bank profitability, according to the conclusions of this report. On the other hand, rural bank performance was hurt by loan loss provisions, increased administrative costs and inflation.

**Conceptual Framework**

A conceptual framework consists of framing a concept regarding the connection concerning factors in a study and demonstrating the association diagrammatically (Mugenda & Mugenda, 2003). This framework examined a constantly shifting collection of elements that have an influence on bank profitability. The independent variables in this research are aspects of banking

and macroeconomics. The dependent variable, on the other hand, was estimated by the ROA and ROE. The framework for the research is portrayed in Figure 2.

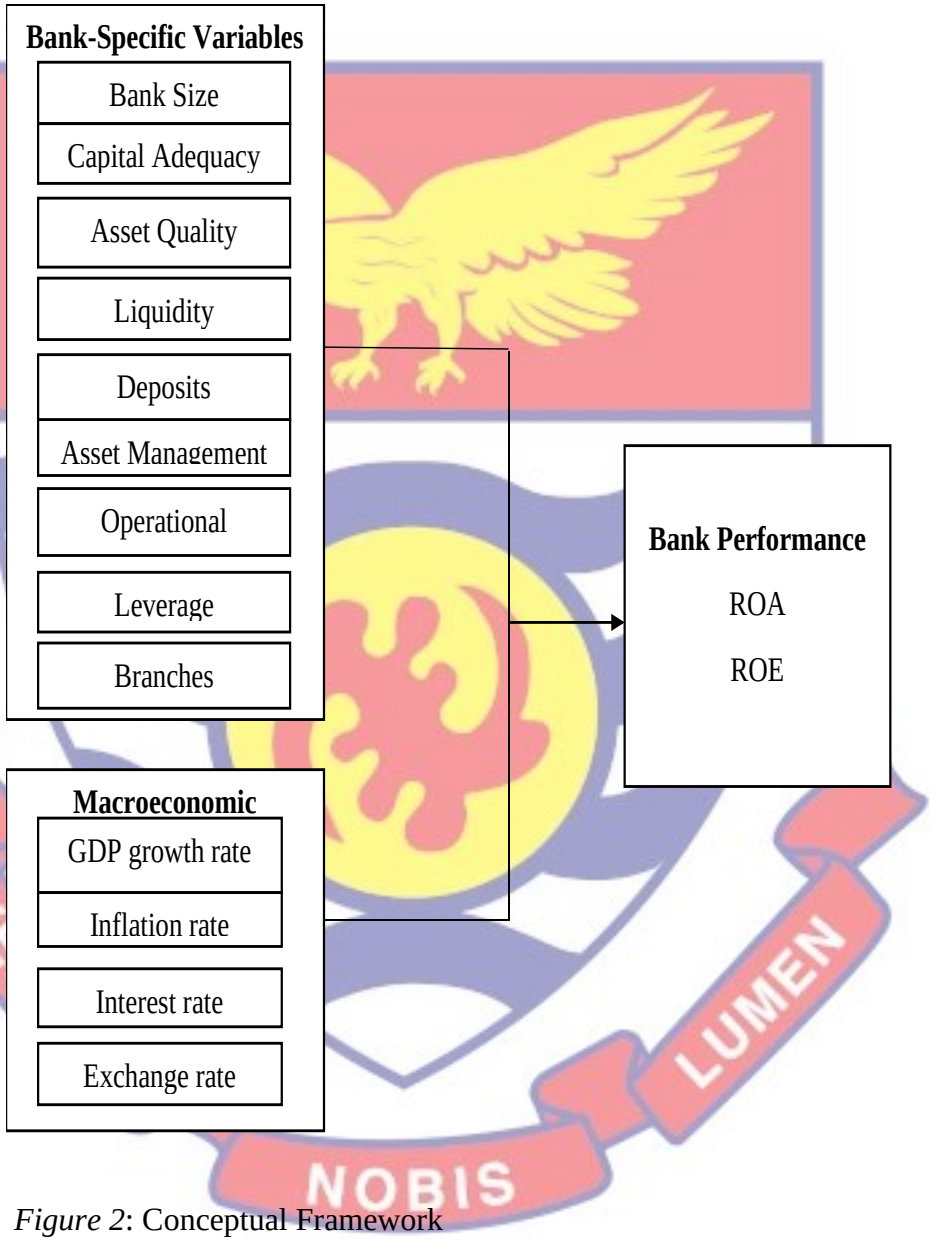


*Figure 2*: Conceptual Framework

Source: Constructed by researcher from available literature (2020)

The elements that influence the profitability of RCBs in Ghana have been discussed in detail, as depicted in Figure 2. Profitability is defined in this study as the ability to generate more revenue than is required to meet the

company's expenses. In addition to bank size and capital sufficiency, other bank-specific characteristics to consider are asset quality and liquidity; asset management; deposits; leverage; operational efficiency; and branch locations (Al-Homaidi et al, 2018; Boadi et al, 2016). As an example, macroeconomic factors such as the rate of real GDP growth as well as interest rates, inflation rates, and the exchange rate should be considered while assessing the data (Sufian & Chong, 2008). In the study, all of these factors are treated as independent variables because they have no relationship to one another. Bank profitability is measured using the two most popular financial ratios namely ROA and ROE. They were used as dependent variables in this study's analysis. Analysis of the effect of independent factors on dependent variables was done via multiple regression studies.

**Chapter Summary and Research Gap**

In this chapter, we'll look at some of the theoretical, empirical, and conceptual aspects of the profitability of banks. The chapter looked at the theoretical underpinnings connected with the investigation. The empirical studies established that both firm physiognomies and macroeconomic factors are key factors in influencing the financial performance of banks. Based on data from prior studies, academics have reached diverse conclusions on the elements that determine financial institution profitability. The literature reviews clearly found a research gap in Ghana as studies done on the subject used only ROA as a performance measure in the banking industry. However, this study is to narrow the gap by including ROE as a proxy for banks' profitability.

# CHAPTER THREE

# RESEARCH METHODS

## Introduction

From 2014 to 2018, five small rural banks in Ghana will be studied in order to determine the factors that influence their profitability over a five-year period from 2014 to 2018. This section of the study outlines the methodology that will be used to conduct the research. The chapter is divided into thematic sub-headings, which are organized as follows: the research design, the study's subjects, the samples they used, and the sampling process itself, sources of data, data collection procedures, data analysis technique, the empirical model for study as well as the definition of research variables.

## Research Approach

It is critical to use the most appropriate statistical approach in order to achieve more reliable statistical results (Silverman, 2011). The approach used in research might be either quantitative or qualitative. In this study, the drivers of rural bank profitability are investigated using a panel model, which was judged to be the most appropriate technique in the given context because it is quantitative in nature. In the quantitative approach, systematic empirical research is carried out, with the aid of mathematics and statistics, and the results are quantified (Bryman & Bell, 2007).

Furthermore, quantitative techniques reduce the amount of guessing and lead to a more solid result. In part, this is because quantitative measurements rather than simplistic interpretations allow for future use and comparisons with other studies. Once again, the quantitative method provides a more comprehensive description of a sequence of events since data from a

bigger sample are pooled (Amaratunga, Baldry, Sarshar & Newton, 2002). It is also simpler to generalize research findings in various contexts because of the quantitative approach's emphasis on the use of statistical data analysis techniques.

The fact that this technique to study lacks flexibility makes it extremely difficult to use the same when analysing or judging human behaviour, as should be emphasized (Crotty, 1998). Research methods should be tailored to each individual study, according to Silverman (2011), and should be determined by the nature of the topic. This study's objectives and nature necessitate the use of a quantitative research method since most of its analyses will be quantitative in nature.

**Research Design**

The design of a research can be described as the plan of circumstances for gathering and analysis of data in a way that intends to consolidate pertinence of issues to the tenacity of the study (Saunders, Lewis & Thornhill, 2009). In that capacity, the research made used of a panel research design. A panel study consists of time-series and cross-sectional studies (Kumar, 2011). A cross-sectional study embroils looking at elements that differ on one key characteristic at a specific point in time (Saunders et al), while time series looks at events over period of time. The longitudinal research method known as panel studies is described by Neuman (2007) as a powerful form of longitudinal research in which a researcher examines the same people, group, or organization over a period of time. It is the goal of this research to bring together observations made on a cross-section of units over a five-year period (2014-2018).

**Population**

Population is characterized as every individual from an actual or conjectural arrangement of individuals, occasions or items to which an analyst desires to take a broad view about the aftereffects of a research study (Borg & Gall, 1989). In order to conduct any scientific investigation, it is necessary to first identify a population. In order to complete the study by the end of 2018, the target population will consist of all five rural banks in Ghana's Upper East area as well as their customers. They are Bessfa Rural Bank Limited, Bongo Rural Bank Limited, Builsa Community Bank Limited, Naara Rural Bank Limited, and Toende Rural Bank.

**Sampling Procedure**

A sample refers to a sub-gathering of components of a whole populace that is chosen to take an interest in a study to fulfil the study objectives (Saunders et al, 2009). The study wilt utilized a census sampling strategy. Censuses are conducted by randomly selecting individuals from all aspects of the community. As a result of the small size of the population in this study, a census is an appropriate method of gathering information. Specifically, as shown in Appendix I, the sample size consisted of all five rural banks in Ghana's Upper East region that filed financial reports between the years 2014 and 2018. In addition, all five rural banks in the Upper East region that filed financial reports between 2014 and 2018 were included in the sample size. This sampling criterion is expected to yield an unbalanced dataset. This is to make sure that all the banks are represented in the sample.

**Source of Issues**

The research used secondary data. This type of data portrays information earlier gotten for commitments other than the current investigation (Kumar, 2011). The data sources comprised of the audited financial statement for the five banks. The duration for the study spanned from the year 2014 to 2018. This makes a total observation point of 25 for the study. Furthermore, macroeconomic parameters such as interest rates, inflation rate, and currency rate will be protected against manipulation by the World Bank and Ghana's central bank, the Bank of Ghana (BoG), as well as the website. Data was obtained from these two major institutions because they are institutions that published major credible economic and financial indicators in an economy.

**Model Specification**

Multiple studies have built a panel research framework (Al-Homaidi et al, 2018; Chowdhury & Rasid, 2017; Brooks, 2014). The present research, using the following profitability function, follows the same framework and meaning of these studies:

$$Profitability = f(Bank\ specific\ variables, macroeconomic\ variables)$$

Thus, the full models for the empirical investigation for the study are given as follows:

Model I

$$\begin{aligned} ROA_{it} = {} & \alpha_i + \beta_1 BSize_{it} + \beta_2 CAR_{it} + \beta_3 AQ_{it} + \beta_4 LIQ_{it} + \beta_5 DEP_{it} \\ & + \beta_6 AM_{it} + \beta_7 OPEF_{it} + \beta_8 LEV_{it} + \beta_9 BRANCH_{it} \\ & + \beta_{10} GDP_t + \beta_{11} IntR_t + \beta_{12} ExcR_t + \beta_{13} InfR_t \\ & + \mu_{it} \end{aligned} \quad (1)$$

Model II

$$ROE_{it} = \alpha_i + \beta_1 BSize_{it} + \beta_2 CAR_{it} + \beta_3 AQ_{it} + \beta_4 LIQ_{it} + \beta_5 DEP_{it} + \beta_6 AM_{it} + \beta_7 OPEF_{it} + \beta_8 LEV_{it} + \beta_9 BRANCH_{it} + \beta_{10} GDP_t + \beta_{11} IntR_t + \beta_{12} ExcR_t + \beta_{13} InfR_t + \mu_{it} \quad (2)$$

With, I designating an individual bank, t denoting the calendar year, 1-13 designating the coefficients of determinant variables, and denoting the error term; and all other variables are described in the next section, in 3.6. It was determined to build these three models in order to have a better understanding of the elements that may have an impact on the sustainability of rural banks in Ghana, and to do so, three models were developed. The models are based on the viability of banks as a feature in Ghana and are depending on both bank specifics and macroeconomics. Using clustered, fixed and random effects models, each regression model was predicted.

It was also feasible to compare fixed and random effect estimates using the Hausman test in order to decide which model was the most appropriate for the data. It is best to use a fixed effects model when the Hausman test yields a result smaller than 0.05 chi-squared values (Torres-Reyna, 2007). A comparison of fixed and random effect models will be done using the Hausman test, as shown in this figure.

**Definition of Variables**

A description of variables is provided in the sections that preceded it.

***ROAs***

The ratio of operational profit to total assets is taken into account while calculating a company's ROA. This statistic assesses the capacity of a bank's

management to make profits from its limited resources by examining the amount of profit generated by the bank. An increase in the ROAs and the capacity to convert assets into net income are indicators of improved management efficiency and ability to convert assets into net income for a financial institution (Asare, 2015).

***ROE***

ROE, as well as the researcher's ROE, were also included in the study (ROE). How much money shareholders have made from their investment in the company is measured by this figure. This study used the ROE as a measure of profitability because it has been widely used by researchers and chartered accountants to evaluate the profitability of companies (Taipi & Ballkoci, 2017). The efficiency with which management uses the funds that shareholders have invested in a firm is shown by the ROE of the company.

Two types of explanatory variables are given in Figure 2: determiners that are bank- and macroeconomic-specific. Other variables that are unique to a bank include its size, consistency of assets, adequacy of resources, profitability and operational performance as well as the amount of branches that it has. Gross domestic product (GDP), inflation, interest rates, and the value of the currency are among macroeconomic variables that affect bank profits. A summary of both types of explanatory variables is given below.

***Bank size***

Past investigations used bank size (*Bsize*) as an explanatory variable to explain the influence on bank profitability (Poudel, 2012; Kargi, 2011). According to some researchers, larger banks benefit from economies of scale, while others argue that smaller banks are just as profitable. A natural

logarithm of the total sales value or total value can be used as a proxy for firm size. Following studies of Taipi and Ballkoci (2017), Asare (2015) and Adusei (2015), this examination utilized the common logarithm of total assets as proportions of the size of each bank.

***Capital adequacy ratio***

Risk-weighted exposures to a bank are converted into CARs, which show how well-capitalized that bank is relative to its overall risk (Asare, 2015). It was chosen as a control variable due to regulators' belief that it is the best predictor of a bank's financial health. The profitability of a bank is greatly enhanced by a high CAR. It also helps to keep the financial system as a whole stable and effective. The Bank of Ghana mandates that banks maintain a minimum capital adequacy ratio of 10 percent of total assets in order to continue operating successfully (BoG, 2018).

***Assets quality***

The asset quality (AQ) percentage of total assets, as established by a number of prior research, may be used to measure the overall quality of a portfolio of assets. Even if a bank is exposed to excessively high levels of risk, it is expected to have a negative effect on its profits, which is why it is enacted (Rani & Zergaw, 2017).

***Liquidity***

In order to compute the liquidity index (also known as the LIQ), total assets are divided by the amount of liquid assets in the portfolio (Bougatef, 2017; Menicucci & Paolucci, 2016; Chowdhury & Rasid, 2017). The larger the percentage of liquidity, the greater the price to pay for higher rates of return. Furthermore, inadequate liquidity levels may play a role in the demise

of a financial institution. Previous studies have produced inconsistent findings about the impact of liquidity on the functioning of financial institutions (Loh, 2017; Issn, Ebenezer, Ahmad & Bin, 2017).

***Deposits***

Since its inception, deflationary deposit (DEF) has been used as a proxy for the deposit-to-asset ratio numerous times (Menicucci & Paolucci, 2016; Zampara et al, 2017). We found that bank profitability and deposit ratio are negatively correlated with each other.

***Asset management***

The asset management (AM) ratio is defined as the relationship between operational income and total assets. More asset management ratios are associated with higher bank profitability, according to research done by Masood and Ashraf (2012), for example.

***Operating efficiency***

Operating efficiency (OPEF) is the ratio of operating expenses to interest revenue divided by interest income, as defined by Rashid and Jabeen in their 2016 article. The smaller the ratio of operational performance to total performance, the better the managerial efficacy.

***Leverage***

According to Bose, Saha, Zaman, and Islam, the ratio of total debt to total assets is known as leverage (2017). For example, Athanasoglou et al. (2008) found that the higher the ROA, the lower the ROE.

***Branches***

When referring to a bank's branches, the total number of locations (BRNCH) is used (BRNCH). The bank's portion of the market and regional reach are shown.

***Gross domestic product***

A bank's financial health is evaluated using a variety of macroeconomic indicators, one of which is GDP. That's because it's used to gauge a country's overall economic activity. According to Bikker and Hu's (2002) findings, there should be some kind of connection between the two.

***Interest rate***

Interest rate (IntR) is considered as the rate money lenders charge money borrowers in an investment relationship. Bank profitability is expected to improve as a result of an increase in interest rates (Asare, 2015). This means that as interest rates rise, banks will see an increase in the amount of money they lend out. Therefore, a rise in the interest rate has a higher effect on borrowing expenses than it does on saving costs. The burden on borrowers will rise as a result of this increase, which could lead to a decrease in asset quality. Banks are forced to raise interest rates to compensate for their exposure to credit risk as a result (Vong et. al, 2009). According to Kyereboah-Coleman and Agyire-Tettey, the 91-day Treasury bill rate is currently used to measure the official lending rate for the year (2008).

***Exchange rate***

This happens whenever an overseas transaction is connected to a foreign currency exchange. It's the rate at which one country's money is exchanged for another country's currency, known as the exchange rate

(Atugeba, 2019). This variable is also used in the banking industry to assess the impact of various environmental factors. Exchange rate is therefore expected to have association with firm financial performance. This study therefore used the end of year annual Ghana Cedi per US dollar rate. It measured using the natural logarithm of Ghana Cedi per US dollar rate of each year.

***Inflation rate***

This represents a rising trend in the average cost of prices for goods and services. It also shows how much a currency is worth in terms of purchasing power (Singh & Sharma, 2016). In the past, bank profitability reports have frequently included inflation rates as a measure of profitability (Chowdhury & Rasid, 2017; Masood et al., 2012). In this research, the inflation rate (InfR) is determined using the yearly percentage change in the consumer price index (CPI).

**Data Collection Procedures**

The data gathering process started with a meeting with the managers of the five rural bank managers to brief them about issues concerning the data collection and to introduce the intention of the researcher of using their audited statements for academic purpose. During the research, an introduction letter from the University of Cape Coast (UCC) was provided to the managers of the individual banks in order to get consent for the release of their financial data for the study.

**Data Processing and Analysis**

Figures from the financial statements will be entered into Microsoft Excel to calculate the various ratios of the study variables. The data will then

be fed into STATA programming version 12 to generate the results of the study variables. The results that were generated by the STATA tool was then tabulated and interpreted. The ability of this package to generate descriptive statistics and regression results efficiently made it the preferred choice.

In order to examine the information, correlation and regression methods were used. In this study, the researcher was able to correctly determine the index of direction and the extent to which two sets of scores were associated via the use of correlation analysis, without asserting that the link was causal. In order to establish whether or not there was a link between the independent and dependent variables, a regressive model was used.

**Chapter Summary**

The method and methodology used in the processing and analysis of data is discussed in this chapter. It was necessary to utilize both numerical and narrative data to answer the research goals, which is why this study used a mixed method technique in order to answer them. The research used statistical tools for data processing, such as multiple regression analysis and correlation. Chapter four explores the outcomes of using these strategies and techniques.

# CHAPTER FOUR

# RESULTS AND DISCUSSION

## Introduction

It is discussed in this part how the conclusions of a study on the elements that determine the profitability of rural banks in Ghana were used. A five-year period from 2014 to 2018 was used to gather the data that was used in the analysis. The data are discussed in accordance with the research goals, and attempts are made to establish connections with earlier literature relevant to the investigation. The chapter comprised of two main sections; presentation of research findings and discussion of results.

## Presentation of Research Findings

Here are the results of the inquiry, as provided by the investigators. As a consequence, descriptive statistics of the findings, the degree of correlation between the variables, and a regression analysis of the research variables are shown.

## Profitability of the Rural Banks from 2014 to 2018

Profitability is the margin on sales revenue (Appiah et al, 2015). In the banking business, it is derived by subtracting your cost of operations from your net income. This section of the study reports the profitability (net profit before interest and tax) in a period from 2014 to 2018, and the finding is presented in Table 1.

**Table 1: Profitability of the rural banks from 2014 to 2018**

| Year | BRBL GH¢ | BoRBL GH¢ | BucoBank GH¢ | NRBL GH¢ | TRB GH¢ | Average GH¢ |
|---|---|---|---|---|---|---|
| 2014 | 103,324.00 | 545,493.00 | 257,931.00 | 940,699.00 | 150,001.00 | 399,489.60 |
| 2015 | 257,931.00 | 103,324.00 | 292,295.00 | 859,193.00 | 298,673.00 | 362,283.20 |
| 2016 | 292,295.00 | 257,931.00 | 496,058.00 | 545,493.00 | 348,075.00 | 387,970.40 |
| 2017 | 346,463.00 | 292,295.00 | 561,870.00 | 804,495.00 | 304,030.00 | 461,830.60 |
| 2018 | 859,193.00 | 346,463.00 | 150,001.00 | 493,665.00 | 233,355.00 | 416,535.40 |

Notes: BRBL = Bessfa Rural Bank Limited; BoRBL = Bongo Rural Bank Limited; BucoBank = Builsa Community Bank Limited; NRBL =Naara Rural Bank Limited; TRB = Toende Rural Bank

Source: Author's Computation (2020)

As can be seen from Table1, rural banks profitability over the years have been fluctuating from 2014 to 2018. Specifically, the average net profit amounted to GH¢399,489.60 in 2014 but declined to GH¢362,283.20 in 2015. In 2016 the average profit level of rural banks increased by 7.1% to GH¢387,970.40. The year 2017 further saw an increased in an average profit of GH¢461,830.60, but slightly decline to GH¢416,535.40 in 2018. From the analysis, it can be deduced that rural banks experienced their minimum profit in 2015 and highest profit in 2017.

**Descriptive Statistics**

Data from this investigation are shown in Table 2, which includes descriptive data. It gives maximum, mean, minimum, and standard deviation information on the dependent and explanatory variables. It also provides details on the variable's independence. In the years 2014 to 2018, profitability projections have increased, as have estimates of ROA and ROE. The findings

for the same time period include descriptive data for bank-specific and macroeconomic variables.

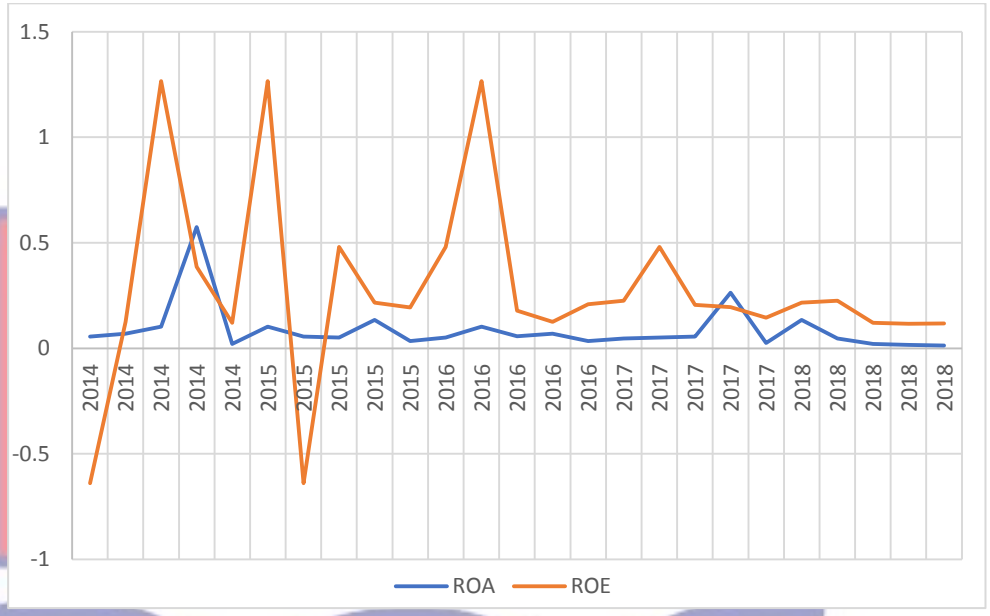


*Figure 3*: Performance of Banks

Source: Author's Computation (2020)

**Table 2: Descriptive statistics**

| Variable | Observations | Mean | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|---|
| ROA | 25 | 0.088 | 0.114 | 0.014 | 0.574 |
| ROE | 25 | 0.283 | 0.455 | -0.639 | 1.266 |
| BSIZE | 25 | 6.802 | 0.334 | 6.259 | 7.602 |
| CAR | 25 | 0.324 | 0.232 | -0.290 | 0.751 |
| AQ | 25 | 1.043 | 1.469 | 0.272 | 6.455 |
| LIQ | 25 | 0.891 | 0.097 | 0.533 | 0.965 |
| DEP | 25 | 1.905 | 2.171 | 0.695 | 9.187 |
| AM | 25 | 0.342 | 0.409 | 0.011 | 2.168 |
| OPEF | 25 | 1.556 | 2.718 | 0.662 | 10.846 |
| LEV | 25 | 1.784 | 1.812 | 0.198 | 8.648 |
| BRANCH | 25 | 0.451 | 0.245 | 0.000 | 0.698 |
| GDP | 25 | 0.054 | 0.019 | 0.037 | 0.085 |
| INTR | 25 | 0.199 | 0.053 | 0.133 | 0.248 |
| EXCR | 25 | 0.603 | 0.058 | 0.505 | 0.662 |
| INFR | 25 | 0.145 | 0.029 | 0.098 | 0.175 |

Notes: ROA=return on assets, ROE=return on equity, BSIZE=bank size, CAR-capital adequacy ratio, AQ=assets quality, LIQ=liquidity, DEP=deposits, AM=assets management, OPEF=operational efficiency, LEV=leverage, BRANCH=branch, GDP=GDP growth rate, INTR=interest rate, EXCR=exchange rate, INFR=inflation rate
Source: Author's Computation (2020)

In accordance with the data shown in Table 2, the ROA and the ROE each range between the lowest and highest values of 0.014 and -0.639 and the lowest and highest values of 0.574 and 1.266, with a mean of 0.088 and 0.283 for each, respectively. Table 2 shows that the mean value and standard deviation of both profitability indicators are different from one another, as can be observed from the data in the table.

Bank specific determinants have a mean of 6.802 (std. dev. = 0.334) for BSIZE; CAR, AQ, OPEF, LEV, BRANCH, LIQ, DEP, and AM are 0.324, 1.043, 0.891, 1.905, 0.342, 1.556, 1.784 and 0.451 respectively with standard deviation of 0.232, 1.469, 0.097, 2.171, 0.409, 2.718, 0.409, 2.718, 1.812, and 0.245 respectively. In all variables, there is a considerable discrepancy between the mean and standard deviation values, which indicates that the selected banks exhibit significant variability.

From a macroeconomic perspective, the GDP growth rate fluctuates between a low of 0.037 and a maximum of 0.085, with a mean value of 0.054 and a minimum of 0.037. A similar pattern can be observed in inflation, which swings between 0.098 at the lowest end and 0.17 at the highest end of the scale with a mean of 0.145 at the midpoint. According to these figures, the average annual interest rate is 0.199 percent, with a standard deviation of 0.053 percent and a range of (Minimum: 0.133, Maximum: 0.248%). Averaging 0.603 (min. = 0.505, max. = 0.662), the exchange rate is likewise the lowest of the three possible values (min. = 0.505, max.

**Correlation Analysis**

Please refer to Table 3 to examine the connection matrix between bank-specific and macroeconomic parameters. The correlation coefficient, in

this situation, gives a measure of the direction and magnitude of the association between two sets of scores without implying that the two sets of scores are causally related to one another. The direction of the relationship is shown by the sign of the coefficient, whilst the quantity of the link is expressed by the absolute value of the coefficient (or the coefficient's value) (Zikmund, Babin, Carr & dan Griffin, 2010).

Bank-specific variables have positive correlations with ROA but negative correlations with ROE. Similarly, CAR and LIQ have a negative correlation with ROA but a good correlation with ROE. Only BSIZE was shown to have a negative relationship with ROA and ROE. This might indicate that the profitability of Ghanaian rural banks is influenced by their size. Regarding macroeconomic factors, the results show a negative connection between GDP and EXCR and profitability metrics ROA and ROE (ROA and ROE).

**Table 3: Correlation analysis**

| VARIABLE | ROA | ROE | BSIZE | CAR | AQ | LIQ | DEP | AM | OPEF | LEV | BRANCH | GDP | INTR | EXCR | INFR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROA | 1 | | | | | | | | | | | | | | |
| ROE | 0.151 | 1.000 | | | | | | | | | | | | | |
| | (0.470) | | | | | | | | | | | | | | |
| BSIZE | -0.503 | -0.183 | 1.000 | | | | | | | | | | | | |
| | (0.010)** | (0.382) | | | | | | | | | | | | | |
| CAR | -0.160 | 0.269 | 0.545 | 1.000 | | | | | | | | | | | |
| | (0.444) | (0.194) | (0.005)*** | | | | | | | | | | | | |
| AQ | 0.932 | -0.022 | -0.294 | -0.093 | 1.000 | | | | | | | | | | |
| | (0.000)*** | (0.918) | (0.154) | (0.659) | | | | | | | | | | | |
| LIQ | -0.889 | 0.109 | 0.333 | 0.117 | -0.939 | 1.000 | | | | | | | | | |
| | (0.000)*** | (0.603) | (0.104) | (0.578) | (0.000)*** | | | | | | | | | | |
| DEP | 0.919 | -0.014 | -0.386 | -0.158 | 0.982 | -0.916 | 1.000 | | | | | | | | |
| | (0.000)*** | (0.949) | (0.057) | (0.449) | (0.000)*** | (0.000)*** | | | | | | | | | |
| AM | 0.881 | 0.057 | -0.386 | -0.162 | 0.796 | -0.790 | 0.709 | 1.000 | | | | | | | |
| | (0.000)*** | (0.787) | (0.057) | (0.435) | (0.000)*** | (0.000)*** | (0.000)*** | | | | | | | | |
| OPEF | 0.137 | -0.100 | 0.241 | -0.018 | 0.293 | -0.201 | 0.375 | -0.212 | 1.000 | | | | | | |
| | (0.512) | (0.633) | (0.247) | (0.931) | (0.155) | (0.336) | (0.065) | (0.308) | | | | | | | |
| LEV | 0.451 | -0.069 | -0.216 | -0.131 | 0.642 | -0.520 | 0.713 | 0.165 | 0.511 | 1.000 | | | | | |
| | (0.024)* | (0.744) | (0.299) | (0.534) | (0.001)*** | (0.008)*** | (0.000)*** | (0.431) | (0.000)*** | | | | | | |
| BRANCH | 0.256 | 0.001 | 0.211 | 0.062 | 0.349 | -0.309 | 0.314 | 0.195 | 0.308 | 0.241 | 1.000 | | | | |
| | (0.217) | (0.999) | (0.311) | (0.768) | (0.087) | (0.132) | (0.126) | (0.349) | (0.134) | (0.246) | | | | | |
| GDP | -0.096 | -0.127 | 0.377 | 0.376 | 0.012 | -0.008 | 0.028 | -0.261 | 0.351 | 0.101 | -0.000 | 1.000 | | | |
| | (0.649) | (0.547) | (0.063)* | (0.064)* | (0.956) | (0.968) | (0.894) | (0.207) | (0.085)* | (0.632) | (1.000) | | | | |
| INTR | 0.145 | 0.148 | -0.448 | -0.399 | 0.038 | -0.056 | 0.032 | 0.283 | -0.362 | -0.076 | 0.000 | -0.966 | 1.000 | | |
| | (0.491) | (0.479) | (0.025) | (0.048)* | (0.855) | (0.789) | (0.879) | (0.169) | (0.075)* | (0.717) | (1.000) | (0.000)*** | | | |
| EXCR | -0.323 | -0.023 | 0.531 | 0.418 | -0.211 | 0.208 | -0.216 | -0.414 | 0.266 | 0.025 | 0.000 | 0.650 | -0.721 | 1.000 | |
| | (0.115) | (0.914) | (0.006) | (0.038)** | (0.312) | (0.318) | (0.299) | (0.039)** | (0.199) | (0.905) | (1.000) | (0.000)*** | (0.000)*** | | |
| INFR | 0.099 | 0.179 | -0.444 | -0.364 | 0.009 | -0.043 | 0.019 | 0.179 | -0.337 | -0.033 | -0.000 | -0.830 | 0.922 | -0.566 | 1.000 |
| | (0.638) | (0.391) | (0.026) | (0.074) | (0.967) | (0.837) | (0.926) | (0.393) | (0.099)* | (0.875) | (1.000) | (0.000)*** | (0.000)*** | (0.003) | |

*** p<0.01, ** p<0.05, * p<1

Source: Author's Computation (2020)

**Diagnostic of multicollinearity**

To verify the regression model's fitness, regression assumptions were taken into account. As a result, the researcher used a diagnostics test called multicollinearity to see whether any explanatory factors are too related, which might make it difficult to figure out which one is impacting the dependent variables.

The variance inflation factor (VIF) was performed on the predictors (, BSIZE, CAR, AQ, LEV, INTR, LIQ, OPEF AM, DEP, BRANCH, GDP, EXCR, and INFR) to check the existence of multicollinearity problems. As a rule of thumb, a VIF in excess of 10 is considered as an indicator of harmful multicollinearity (Zikmund et al, 2010). The results of VIF suggest that multicollinearity is not an issue since the independent variables VIFs were all below 10 and with an average of 1.60. The result is presented in Table 4.

**Table 4: Diagnostic of multicollinearity**

| Variable | VIF | Tolerance (1/VIF) |
|---|---|---|
| BSIZE | 1.71 | 0.584 |
| CAR | 1.27 | 0.788 |
| AQ | 1.60 | 0.624 |
| LIQ | 1.12 | 0.890 |
| DEP | 1.32 | 0.936 |
| AM | 1.17 | 0.580 |
| OPEF | 1.42 | 0.711 |
| LEV | 1.55 | 0.652 |
| BRANCH | 1.06 | 0.945 |
| GDP | 2.41 | 0.413 |
| INTR | 3.75 | 0.275 |
| EXCR | 1.48 | 0.677 |
| INFR | 2.08 | 0.479 |
| Mean VIF | 1.60 | |

Source: Author's Computation (2020)

**Multivariate Regression Analysis**

**Regression Results for Model -I**

The research estimated the panel regression analysis for model I using both fixed and random techniques. The Haussmann test was used to select the preferability between the two models. As indicated by the Haussmann test (*chi2(12) =7.46* and *p-value = 0.826*). Because the p-value of the Hausman test is more than 5% (p>0.05), the random effect model is statistically better than the fixed effect model in this circumstance. Table 5 displays the findings of model I.

**Table 5: Results for bank characteristics, macroeconomic variables and performance (ROA)- Model-I**

| | Fixed-effect | | Random-effect | |
|---|---|---|---|---|
| *Variable* | *Coef.* | *p-value* | *Coef.* | *p-value* |
| Constant | -0.154 | 0.799 | 0.436 | 0.429 |
| BSIZE | -0.027 | 0.724 | -0.090 | 0.227 |
| CAR | 0.079 | 0.008 | 0.058 | 0.015** |
| AQ | -0.149 | 0.278 | -0.007 | 0.958 |
| LIQ | 0.097 | 0.488 | 0.158 | 0.292 |
| DEP | 0.101 | 0.178 | 0.035 | 0.608 |
| AM | 0.352 | 0.023 | 0.163 | 0.142 |
| OPEF | 0.012 | 0.007 | 0.007 | 0.032** |
| LEV | 0.005 | 0.575 | -0.008 | 0.231 |
| BRANCH | 0.125 | 0.245 | 0.015 | 0.398 |
| GDP | 0.182 | 0.881 | -0.445 | 0.735 |
| INTR | -0.248 | 0.726 | -0.425 | 0.587 |
| EXCR | 0.139 | 0.296 | 0.062 | 0.659 |
| INFR | 0.589 | 0.283 | 0.395 | 0.490 |
| Observations | 25 | | 25 | |
| R-square | 0.991 | | 0.986 | |
| Prob > F | 0.000 | | | |
| Prob > chi2 | | | 0.000 | |
| Haussmann test | chi2(12) =7.46 | | | |
| | Prob>chi2 =0.826 | | | |
| | *(random effect model is preferred in model I)* | | | |

*** p<0.01, ** p<0.05, * p<1

Source: Author's Computation 2020

Only CAR (p-value=0.015) and OPEF (p-value=0.032) among bank-specific variables have a statistically significant impact on ROA, as shown in Table 5. The remaining bank-specific variables, such as BSIZE (p-value=0.227), AQ (p-value=0.958), LIQ (p-value=0.292), DEP (p-value=0.608), AM (p-value=0.142), LEV (p-value=0.231), and BRANCH (p-value=0.398), were found to be statistically insignificant in determining rural banks' ROA. Despite this, all of the other variables, with the exception of BSIZE, AQ, and LEV, have a positive impact on rural banks' ROA.

Regarding the impact of Ghanaian rural banks' ROA on macroeconomic variables, the results in Table 5 demonstrate that all macroeconomic factors are unimportant. Even though ROA had a negative relationship with GDP and INTR, which showed an opposing contribution to the profitability of Ghanaian rural banks as assessed by ROA, EXCR and INFR had a favorable relationship with rural banks' ROA. Overall, as observed from Table 5 of Model (I), the $R^2$ is 0.986 for random effect model. Meaning that banks and macroeconomics both contribute to the overall picture about 98.6% of the variation of rural banks' ROAs. In addition, the model has a p-value of 0.000, which is less than one percent, showing that it is well-fit and statistically meaningful.

**Regression Results for Model -II**

The research estimated the panel regression analysis for model II using both fixed and random techniques. The Haussmann test was used to select the preferability between the two models. As indicated by the Haussmann test (*chi2(12) =0.15* and *p-value = 1.0000*). For example, the results of the Hausman test indicate an alpha level of over 5 percent, indicating that random

effects are favored statistically over fixed effects. The results for model II is presented in Table 6.

**Table 6: Results for bank characteristics, macroeconomic variables and performance (ROE)- Model-II**

| | Fixed-effect | | Random-effect | |
|---|---|---|---|---|
| *Variable* | *Coef.* | *p-value* | *Coef.* | *p-value* |
| Constant | -25.604 | 0.150 | -1.091 | 0.942 |
| BSIZE | 1.292 | 0.548 | -1.475 | 0.463 |
| CAR | 1.779 | 0.020 | 1.223 | 0.059 |
| AQ | -3.846 | 0.308 | 0.854 | 0.803 |
| LIQ | 6.057 | 0.139 | 5.638 | 0.164 |
| DEP | 2.018 | 0.315 | -0.486 | 0.793 |
| AM | 5.596 | 0.145 | 0.324 | 0.914 |
| OPEF | 0.157 | 0.139 | 0.093 | 0.303 |
| LEV | 0.295 | 0.235 | -0.019 | 0.921 |
| BRANCH | 0.125 | 0.245 | 0.218 | 0.655 |
| GDP | 37.483 | 0.279 | 24.727 | 0.485 |
| INTR | 16.217 | 0.413 | 13.840 | 0.512 |
| EXCR | 4.505 | 0.225 | 3.471 | 0.359 |
| INFR | 4.393 | 0.7633 | -3.338 | 0.829 |
| Observations | 25 | | 25 | |
| R-square | 0.7060 | | 0.5614 | |
| Prob > F | 0.2568 | | | |
| Prob > chi2 | | | 0.6467 | |
| Haussmann test | chi2(12) =0.15<br>Prob>chi2 =1.0000<br>*(random effect model is preferred in model II)* | | | |

*** p<0.01, ** p<0.05, * p<1

Source: Author's Computation (2020)

Table 6 shows the random effect model for ROE, as an example all the bank specific factors; CAR (p-value=0.059), OPEF (p-value=0.303), BSIZE (p-value=0.463), AQ (p-value=0.803), LIQ (p-value=0.164), DEP (p-value=0.793), AM (p-value=0.914), LEV (p-value=0.921), and BRANCH (p-value=0.655) were found to be statistically insignificant determining the ROE of Ghanaian rural banks. This not with withstanding, with the exception of BSIZE, DEP, and LEV; all the other variables have a positive effect on rural banks ROE.

There is no correlation between the ROE of rural Ghanaian banks and any of the macroeconomic parameters shown in Table 6. It has a significance level of less than 1%, which means the model is both fit and significant.

Overall, as shown in Table 6 of Model (II), the R2 for the random effect model is 0.5614, which is a good result. Thus, both bank-specific and macroeconomic variables are responsible for about 56.14 percent of the variation in the return on equity of rural banks, according to our analysis. In this case, the model is not fit for analysis and is negligible; a p-value of 0.6467 shows that the model is not fit for analysis and is unimportant; a p-value more than 5 percent indicates that the model is not fit for analysis and is insignificant.

**Hypothesis testing**

The results of hypothesis tests are summarized on the bases of the main research objectives. The result is demonstrated in Table 7.

**Table 7: Summary of hypothesis testing**

| | Hypothesis | Results | Decision |
|---|---|---|---|
| | ***Bank-Specific Variables*** | | |
| $H_{01}$ | there is no significant relationship between bank size rural banks ROA. | p-value = 0.010 | Reject |
| $H_{02}$ | there is no significant relationship between capital adequacy ratio rural banks ROA | p-value = 0.444 | Fail to reject |
| $H_{03}$ | there is no significant relationship between asset quality and rural banks ROA | p-value = 0.000 | Reject |
| $H_{04}$ | there is no significant relationship between liquidity and rural banks ROA | p-value = 0.000 | Reject |
| $H_{05}$ | there is no significant relationship between deposits and rural banks ROA | p-value = 0.000 | Reject |
| $H_{06}$ | there is no significant relationship between asset management and rural banks ROA | p-value = 0.000 | Reject |
| $H_{07}$ | there is no significant relationship between operational efficiency and rural banks ROA | p-value = 0.512 | Fail to reject |
| $H_{08}$ | there is no significant relationship between leverage and rural banks ROA | p-value = 0.024 | Reject |
| $H_{09}$ | there is no significant relationship between branches and rural banks by ROA | p-value = 0.217 | Fail to reject |
| | ***Macroeconomic Variables*** | | |
| $H_{010}$ | there is no significant relationship between GDP growth rate and rural banks ROA. | p-value = 0.649 | Fail to reject |
| $H_{011}$ | there is no significant relationship between interest rate and rural banks ROA. | p-value = 0.491 | Fail to reject |
| $H_{012}$ | there is no significant relationship between exchange rate and rural banks ROA. | p-value = 0.115 | Fail to reject |
| $H_{013}$ | there is no significant relationship between inflation rate and rural banks ROA | p-value = 0.638 | Fail to reject |

Source: Author's Computation (2020)

On the basis of the findings of the summary hypothesis test shown in Table 7, the study finds that the following hypotheses are rejected and supported in relation to the relationship between bank-specific and macroeconomic variables and the ROAs of rural financial institutions: The null hypothesis, which stated that there is no long-term and significant link between rural banks ROAs and bank-specific factors was rejected by the research in terms of the association between bank-specific variables and rural banks ROAs. On the contrarily, the study fails to reject the null hypotheses that capital adequacy ratio, operational efficiency, and number of branches have no significant relationship with rural banks ROAs.

Regarding the association between macroeconomic factors and rural bank ROAs, however, the research fails to reject the null hypothesis that the GDP growth rate, interest rate, currency value and inflation rate have no meaningful relationship with the ROAs of rural banks.

**Discussion of Results**

The discussion of the results is done consistent with expectation of the investigation and in comparison, with past studies. With the use of a case study of rural banks in the Upper East region of Ghana, this study empirically explores the variables that determine the profitability of rural banks in the country. Following the regression analysis, it was discovered that the models as a whole were significant in predicting the ROAs of rural banks, but were not significant in estimating the return on equity of rural banks.

**Profitability of Rural Banks**

Rural banks have seen an increase in average profitability throughout the course of the study's five-year period (2014-2018), according to the results.

Average rates of ROAs and equity are approximately 0.088 and 0.283, respectively. There was an average return of 8.8 percent on assets and 28.3 percent on equity for the typical rural bank in the sample over the time period under consideration, according to the data Findings by Al-Homaidi and colleagues (2018), who studied 60 commercial banks in India, showed the return on equity and ROAs to be greater than previously reported. According to Adusei (2015), based on their research into the industry, the mean ROAs and the mean return on equity in the rural banking business in Ghana are 2.26 percent and 85.43 percent, respectively, according to their findings. compared to the national average. Also, Sufian and Chong (2008) in their study from banks in Philippian reports a mean value of 1.46% of ROAs.

**Relationship between bank-specific variables and rural banks profitability**

The study's findings on the association between bank-specific characteristics and rural banks' ROAs suggest that bank size, asset quality, deposits, asset management, and leverage all have a significant relationship with rural banks' ROAs, according to the findings. According to previous research, Rani and Zergaw (2017) and Zampara et al (2017) found that explicit drivers of bank performance were present.such as capital adequacy proportion, assets quality ratio, operating proficiency proportion, liquidity ratio, deposit proportion and bank size have a link with the profitability of banks. Also, Appiah et al (2015) study result established that performance of rural banks is positively related to deposit and liquidity.

On the contrarily, the study establishes that adequacy of capital ratio, efficiency of operational, and number of branches have no significant

relationship with rural banks ROAs. This research runs counter to the findings of Al-Homaidi et al (2018) and Adusei et al (2018). They claim that it adds greatly to operational costs and is a substantial determinant of the viability of a bank. This thesis also refutes the effects of Salike and Ao (2017). They also given proof that operating productivity is a significant determinant that greatly explains the profitability of a bank.

The variations in findings in this study from others could be explained as possible where prior studies are foreign based studies which could be a reason for the variations. Other reasons for the contradictions of the findings of this study from other works could be as a result of the time frame, geographical location, and the number of banks studied as well as the industry under inquiry.

**Relationship between macroeconomic variables and rural banks profitability**

According to the findings in Table 7, when it comes to the relationship between macroeconomic variables and rural bank profitability, none of the macroeconomic variables (GDP growth rate, interest rate, exchange rate, inflation rate) have a statistically significant relationship with rural bank profitability. Similarly, Rashid and Jabeen (2016) and Al-Homaidi et al (2018) have shown that the interest rate levied on bank loans has a negative influence on the functioning of the institution. Boadi et al. (2016) and Rjoub (2016), on the other hand, found that the gross domestic product growth rate, inflation, financing risk, and bank resilience all had a substantial impact on bank profitability and profitability. The results of Tiberiu (2015), who showed that interest rate margins had a favorable impact on the profitability of financial

institutions, are in direct conflict with this conclusion, which is also in conflict with the findings of other studies. Furthermore, Saona (2016) discovered an unexpected result, which resulted in the formation of a beneficial link between the profitability of a bank and the interest rate.

The variations in findings in this study from others could be explained as possible where prior studies are foreign based studies which could be a reason for the variations. Other reasons for the contradictions of the findings of this study from other works could be as a result of the time frame, geographical location, and the number of banks studied.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## Introduction

As a result of the facts presented in this chapter, conclusions are drawn and solutions are offered. Summary, conclusions, and suggestions make up this section.

## Summary of Findings

The purpose of this research was to investigate the factors that influence the profitability of rural banks in Ghana. The research methodology was a panel research design, and the secondary data was drawn from five rural banks in the Upper East area, which was balanced. The research used data from the years 2014 to 2018. The data was gathered from a variety of sources. The financial information from the annual reports of the banks, as well as macro-economic data sourced from the World Bank and the Central Bank of Ghana, were utilized in the research (BoG). In order to determine the influence of the explanatory factors on the ROAs of the companies, a panel regression with covariance model was used. The study settled on a random-effect regression model (on both models) to analyse the results. The summary of findings is as follows.

The analysis shows that the average rural banks profitability between 2014 to 2018 have been fluctuating. Also, the average return on ROE which also measure profitability is approximately 0.088 and 0.283 respectively.

Bank-specific factors indicated that profitability in Ghanaian rural banks, as assessed by ROAs, is significantly linked to bank size, asset quality, deposits, asset management, and leverage but an insignificant association with

operational efficiency, capital adequacy ratio, and number of branches. Following the findings of this study on Ghanaian rural banks' profitability evaluated by ROAs, deposits, asset quality, leverage, and asset management bank size are all key bank-specific characteristics that impact the profitability of Ghanaian rural banks. On the impact of bank-specific determinants on the profitability of Ghanaian rural banks as measured by ROE, the findings revealed that all bank-specific factors (bank size, asset quality, deposit mix, asset management, leverage, capital adequacy ratio, operational efficiency, and branch count) were statistically insignificant in determining the profitability of Ghanaian rural banks as measured by ROE.

According to the results from a macroeconomic standpoint, all macroeconomic drivers (interest rate, inflation rate, currency rate, and GDP growth rate) have no impact on the profitability of rural banks, as measured by return on resources and return on parity.

**Conclusion**

The following conclusions were made from the study:

1. The profitability of rural banks in Upper East region has been fluctuating within the study period (2014-2018). Also, the average return on properties and return on fairness which also amount of viability is 8.8%and 28.3% respectively over the study period.
2. According to this research, rural Ghanaian banks' profitability is influenced by factors such as bank size, asset quality, deposits, asset management, and leverage.

3. In accordance with the ROAs and the ROE, the profitability of rural banks is not influenced by any macroeconomic factors (interest rate, inflation rate, currency rate, and GDP growth rate).

**Recommendations**

From the findings of the research, the following commendations are put forward;

1. Rural bank profitability is unaffected by any of the macroeconomic factors studied in the research. It is therefore recommended that government should help to ensure a rising economy, which in turn will lead to increased bank profits through promoting sound policies
2. In addition, bankers, bank managers, and other experts need and need more emphasis on bank-specific determinants for the effective use of bank capital in to the point when the financial benefits of Ghanaian rural banks can be substantially and positively affected.
3. In accordance with the ROAs and the ROE, the profitability of rural banks is not influenced by any macroeconomic factors (interest rate, inflation rate, currency rate, and GDP growth rate).

**Suggestion for Future Studies**

The following suggestions are put forward for future studies;

The study suggests that future studies should explore on other macroeconomic and bank-specific factors. A comparison of the profitability determinants of banks, particular banks, and macroeconomics in the public and private sectors is also required.

Future studies may consider both financial and non-financial performance indicators. Also, dataset of rural banks in Upper East region are

used, implying that the findings cannot be generalised in the broader context of Ghana. Accordingly, the study welcomes a replication of the present study using dataset from at least rural banks from five regions in Ghana.

# REFERENCES

Aboagye, A. Q. & Otieku, J. (2010). "Are Ghanaian MFIs' performance associated with corporate governance?" *Corporate Governance, 10*(3), 307-320

Adom, D., Hussein, E. K., & Adu-Agyem, J., (2018). Theoretical and conceptual framework: Mandatory ingredients. *International Journal of Scientific Research, 7*(1), 438–441.

Adusei, M. (2015). Bank profitability: Insights from the rural banking industry in Ghana. *Cogent Economics & Finance*, *3*(1), 1-15.

Afriyie, H. O. & Akotey, J. O. (2012). Credit risk management and profitability of selected rural banks in Ghana, 2-18

Ahokpossi, C. (2013). *Determinants of bank interest margins in Sub-Saharan Africa*. International Monetary Fund Working Paper No. 1334, Washington, D.C.

Al-Homaidi, E. A. Tabash, M. I., Farhan, N.H. S. and Almaqtari, F. A. (2018). Bank-specific and macro-economic determinants of profitability of Indian commercial banks: A panel data approach. *Cogent Economics & Finance*, *6*, 1-26

Allen, F., Otchere, I. & Senbet, L.W. (2011) 'African financial systems: a review', *Review of Development Finance*, *1*(2), 79–113.

Almaqtari, F. A., Al-Homaidi, E. A., Tabash, M.I., & Farhan, N. H. (2019). The determinants of profitability of Indian commercial banks: A panel data approach. *Int J Fin Econ.*, *24*,168–185.

Amaratunga, D., Baldry, D., Sarshar, M. & Newton, R. (2002). Quantitative and qualitative research in the built environment: Application of 'mixed' research approach. *Work Study*. *51*. 17-31. 10.1108/00438020210415488.

An, Y., Baye, M. R., Hu, Y., Morgan, J. & Shum, M. (2010). *Horizontal Mergers of Online Firms: Structural Estimation and Competitive Effects*, Working papers, No. 564, The Johns Hopkins University, Department of Economics.

Appiah, K.O., Asamoah, L. A. & Narkotey, Z. (2015). 'Determinants of performance of rural banks in Ghana', *African J. Accounting, Auditing and Finance*, *4*(4),345–359.

ARB Apex Bank Limited (2017). *2017 Annual Report.* Zebra Press Ltd.

Asare, O. (2015). *The impact of credit risk on profitability of some selected banks in Ghana*. (Unpublished Master's Thesis). Kwame Nkrumah University of Science and Technology

Asiedu-Mante, E. (2011) *Rural Banking in Ghana*, Combert Impressions Limited Accra, Ghana.

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *International Financial Markets, Institutions & Money*, *18*,121–136.

Atugeba, I. L. A. (2019). *Capital investments and financial performance: A case study of selected SMEs in the Upper East Region of Ghana.* (Unpublished Master's Thesis). Kwame Nkrumah University of Science and Technology

Ayanda, A. M., Christopher, E. I. & Mudashiru, M. A. (2013). Determinants of banks' profitability in a developing economy: evidence from Nigerian banking industry. *Institute of Interdisciplinary Business Research*, *4*(9),155-181.

Bain, J. S. (1951). 'Relation of profit rate to industry concentration: American manufacturing, 1936–1940', *The Quarterly Journal of Economics*, pp.293-324.

Bank of Ghana (2006), Bank of Ghana web site, available at: www.bog.gov.gh

Bank of Ghana, (2018). "Annual report". The Bank of Ghana, Accra Ghana

Barathi, K, G. (2007) 'The intellectual capital performance of the Indian banking sector', *Journal of Intellectual Capital*, *8*(1),96–123.

Bikker, J. A. & Hu, H. (2002). Cyclical patterns in profits, provisioning and lending of banks and procyclicality of new Basel capital requirements. *BNL Quarterly Review*. *2*(21), pp 143-175.

Boadi, E. K., Li, Y. & Lartey, V. C. (2016). Role of bank specific, macroeconomic and risk determinants of banks profitability: Empirical evidence from Ghana's rural banking industry. *International Journal of Economics and Financial Issues*, *6*(2), 813-823.

Borio, C. (2003). Towards a macro-prudential framework for financial supervision and regulation? *CESifo Economic Studies, 49,*181–215.

Bose, S., Saha, A., Zaman, H., & Islam, S. (2017). Nonfinancial disclosure and market-based firm performance: The initiation of financial inclusion Sudipta. *Journal of Contemporary Accounting & Economics, 13*(3),263–281.

Bougatef, K. (2017). Determinants of bank profitability in Tunisia: Does corruption matter? *Journal of Money Laundering Control, 20*(1),70–78.

Brooks, C. (2014). *Introductory econometrics for finance.* Cambridge: Cambridge University Press.

Brownbridge, M. and Gockel, A.F. (1996). *The Impact of Financial Sector Policies on Banking in Ghana*. Institute of Development Studies WP 38.

Bryman, A. & Bell, E. (2007). *Business research methods.* Oxford University Press, USA.

Chowdhury, M. A. F., & Rasid, M. E. S. M. (2017). Determinants of performance of Islamic banks in GCC countries: Dynamic GMM approach. *Advances in Islamic Finance, Marketing, and Management*,49–80.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. London: Sage Publications.

Dickinson, D. K., & Neuman, S. B. (Eds.). (2007). *Handbook of early literacy research* (Vol. 2). Guilford Press.

Dietrich, A., & Wanzenried, G. (2014). The determinants of commercial banking profitability in low-middle-, and high-income countries. *The Quarterly Review of Economics and Finance, 54*, 337–354.

Duygun, M., Sena, V., & Shaban, M. (2013). Schumpeterian competition and efficiency among commercial banks. *Journal of Banking and Finance, 37*,5176–5185.

Filene, L. (2011). Credit Union Financial Sustainability: A Colloquium at Harvard University. Filene Research Institute Report Number *23*(1).

Flamini, V., Schumacher, L., & McDonald, C. A. (2009). The determinants of commercial bank profitability in sub-Saharan Africa. *IMF Working Papers, WP/09/15*,1–32.

Garcia, M. T. M., & Guerreiro, J. P. S. M. (2016). Internal and external determinants of banks' profitability the Portuguese case. *Journal of Economic Studies, 43*(1),90–107.

Gefli, F. Y. (2012). *The determinants of rural bank profitability.* (Unpublished Masters' Thesis). Kwame Nkrumah University of Science and Technology

Govori, F. (2013). *The Performance of Commercial Banks and the Determinants of Profitability: Evidence from Kosovo*, MPRA Paper No. 46824.

Grygorenko, O. (2009) *Effects of Price Setting on Bank Performance: The Case of Ukraine*, Kyiv School of Economics, Ukraine.

Gul, S., Irshad, F., & Zaman, K. (2011). Factors affecting bank profitability in Pakistan. *The Romanian Economic Journal*, 2(39),61–87.

Haron, S. (1996). Competition and other external determinants of the profitability of Islamic banks. *Islamic Economic Studies*, 4(1),49-64.

International Fund for Agricultural Development (IFAD, 2008). The Republic of Ghana Rural and Agricultural Finance Program, IFAD, RAFiP, Rome.

Issn, V. O. L. N. O., Ebenezer, O. O., Ahmad, W., & Bin, W. (2017). Finance & banking studies bank specific and macroeconomic determinants of commercial bank profitability: Empirical evidence from Nigeria. *Journal of Finance & Banking Studies*, *6*(1),25–38.

Jara-Bertin, M., Moya, J. A., & Perales, A. R. (2014). Determinants of bank performance: Evidence for Latin America. *Academia Revista Latinoamericana de Administración*, *27*(2),164–182.

Kanas, A., Vasiliou, D., & Eriotis, N. (2012). Revisiting bank profitability: A semi-parametric approach. *Journal of International Financial Markets, Institutions and Money*, *22*,990–1005.

Kargi, H. S., 2011. Credit Risk and the Performance of Nigerian Banks, Ahmadu Bello University, Zaria.

Kumar, R. (2011). *Research methodology: A step-by-step guide for beginners.* (3rd ed.). London: SAGE Publications Ltd.

Kyereboah-Coleman, A. & Agyire-Tettey, K. F., 2008. Impact of macroeconomic indicators on stock market performance: The case of the Ghana Stock Exchange. *The Journal of Risk Finance*. *9*(4),365-378

Loh, C. Z. (2017). Specific risk factors and macroeconomic factor on profitability performance empirical evidence of Top Glove Corporation Bhd., MPRA Paper 78339, University Library of Munich, Germany.

Masood, O., & Ashraf, M. (2012). Bank-specific and macroeconomic profitability determinants of Islamic banks. *Qualitative Research in Financial Markets*, 4(2/3),255–268.

Matthew, N.G. & Laryea, A. E. (2012). A financial performance comparison of foreign vs local banks in Ghana. *International Journal of Business and Social Science, 3*(21),82-87.

Mehmet, D. E. N. & Eda, O. R. U. C. (2009) 'Relationship between efficiency level of working capital management and return on total assets in ISE (Istanbul Stock Exchange)', *International Journal of Business and Management*, *4*(10), p.109.

Menicucci, E., & Paolucci, G. (2016). The determinants of bank profitability: Empirical evidence from European banking sector. *Journal of Financial Reporting and Accounting*, *14*(1),86–115.

Mensi, S. (2010) 'Measurement of competitiveness degree in Tunisian deposit banks: an application of the Panzar and Rosse model', *Panoeconomicus*, *57*(2),189–207.

Mörttinen, L., Poloni, P., Sandars, P., & Vesala, J. (2005). *Analysing banking sector conditions: How to use macro prudential indicators* (ECB Occasional Paper Series No. 26/ April 2005). Retrieved from http://core.ac.uk/download/pdf/6956200.pdf

Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches.* Nairobi: Acts Press.

Munyambonera, E. F. (2013). Determinants of commercial banks' profitability in sub- Saharan Africa. *International Journal of Economics and Finance*, *5*(9),134-147.

Naeem, M., Baloch, Q. B., & Khan, A. W. (2017). Factors affecting banks' profitability in Pakistan. *International Journal of Business Studies Review*, *2*(2),33–49.

Nair, A. & Fissha, A. (2010) *Rural banking: The case of rural and community banks in Ghana*, World Bank Agriculture and Rural Development Discussion Paper, No. 48.

Nassreddine, G., Fatma, S. & Anis, J. (2013). Determinants of banks performance: viewing test by cognitive mapping technique a case of Biat. *International Review of Management and Business Research, 2*(1), 20-36.

Nkegbe, P. K. & Ustarz, Y. (2015). Banks performance in Ghana: Trends and determinants. *GJDS, 12* (1 & 2), 33-52

Okyere, D. D. (2017). *Determinants of sustainability of rural banks in Ghana: A Case Study of Selected Rural Banks in Ashanti Region.* (Unpublished Master Thesis). Christian Service University College

Ongore, V. O. & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues, 3*(1),237-252.

Owusu-Antwi, G., Antwi, J., & Crabbe, M. (2014). The Performance of Banks in Ghana: The Ages Have Past Anything Recommended for the Future. *International Review of Management and Business Research, 3*(2), 93-101

Poudel, R. (2012). The impact of credit risk management on financial performance of commercial banks in Nepal. *International Journal of Arts and Commerce, 1*(5). pp 9-15.

Rani, D. M. S., & Zergaw, L. N. (2017). Bank specific, industry specific and macroeconomic determinants of bank profitability in Ethiopia. *International Journal of Advanced Research in Management and Social Sciences*, *6*(3),74–96.

Rashid, A., & Jabeen, S. (2016). Analysing performance determinants: Conventional versus Islamic banks in Pakistan. *Borsa Istanbul Review, 16*(2),92–107.

Rjoub, H., Civcir, I., & Resatoglu, N. G. (2017). Micro and macroeconomic determinants of stock prices: The case of Turkish banking sector. *Romanian Journal of Economic Forecasting, 20*(1),150–166.

Saif, A. Y. H. (2014). Financial performance of the commercial banks in the Kingdom of Saudi Arabia: An empirical insight. Master's thesis, Universiti Utara Malaysia. Avaliable at http://etd.uum.edu.my/4587/

Salike, N., & Ao, B. (2017). Determinants of bank's profitability: Role of poor asset quality in Asia. *China Finance Review International.* doi:10.1108/CFRI-10-2016-0118

Samad, A. (2008) 'Market structure, conduct and performance: evidence from the Bangladesh banking industry', *Journal of Asian Economics*, *19*(2), 181-193.

Sanni, M. R. (2009) 'Short term effect of the 2006 consolidation on profitability of Nigerian banks', *Nigerian Research Journal of Accountancy*, *1*,177–188.

Saona, P. (2016). Intra- and extra-bank determinants of Latin American Banks' profitability. *International Review of Economics and Finance, 45*,197–214.

Sathye, M. (2005) 'Privatization, performance, and efficiency: a study of Indian banks', *Vikalpa*, *30*(1),7–16.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.

Shaik, S., Allen, A.J., Edwards, S. & Harris, J. (2009). Market structure conduct performance hypothesis revisited using stochastic frontier efficiency analysis. *Journal of the Transportation Research Forum*, *48*(3),5-18.

Silverman, D. (2011). Interpreting qualitative data. A guide to the principles of qualitative research.

Singh, A., and Sharma, A. K. (2016). An empirical analysis of macroeconomic and bank-specific factors affecting liquidity of Indian banks. *Future Business Journal*, *2*(1), 40–53.

Sufian, F. & Chong, R. R. (2008). Determinants of bank profitability in a developing economy: Empirical evidence from the Philippines. *Asian Academy of Management Journal of Accounting and Finance*, *4*(2),91–112

Sufian, F., & Habibullah, M. S. (2009). Bank specific and macroeconomic determinants of bank profitability: Empirical evidence from the China banking sector. *Frontiers of Economics in China*, *4*,274–291.

Taipi, E. & Ballkoci, V., (2017). Capital expenditure and firm performance evidence from Albanian Construction Sector. *European Scientific Journal*. *13*(28),231-238.

Tiberiu, C. (2015). Banks' profitability and financial soundness indicators: A macro-level investigation in emerging countries. *Procedia Economics and Finance, 23*,203–209.

Torres-Reyna, O. (2007). Panel data analysis fixed and random effects using Stata (v. 4.2). *Data & Statistical Services, Priceton University, 112*.

Vong, A. P. I. & Chan, H. S. (2009). *Determinants of Bank Profitability in Macao* (online. Available: www.amcm.gov.mo/publication/quarterly /July2009/macaoprof_en.pdf. Date accessed: 11 September 2019.

Yeon, J., & Kim, D. (2013). Bank performance and its determinants in Korea. *Japan & The World Economy, 27*,83–94.

Yong-lin, X., & Ying-ying, L. (2012). Appraisal of Key Performance Indicators for Sales Staff Based on BSC and Application of the Result. *Enterprise Vitality*.

Zampara, K., Giannopoulos, M., & Koufopoulos, D. N. (2017). Macroeconomic and industry-specific determinants of Greek bank profitability. *International Journal of Business and Economic Sciences Applied Research, 10*(1),13-22.

Zikmund, W. G., Babin, B. J., Carr, J. C. & dan Griffin, M., (2010). *Business Research Methods*, (8th ed.). Australia: South-western Cengage Learning.