UNIVERSITY OF EDUCATION, WINNEBA

A CRITICAL ASSESSMENT OF OPERATIONAL RISK

MANAGEMENT IN NWABIAGYA AND AMANSIE RURAL BANKS

NANA YAA SAKAAH OFORI

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DECLARATION

STUDENT'S DECLARATION

I, NANA YAA SAKAAH OFORI declares that this Thesis, with the exception of quotations and references contained in the published works which have all been identified and duly acknowledged is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE ……………………………………….

DATE…………………….…………………………..
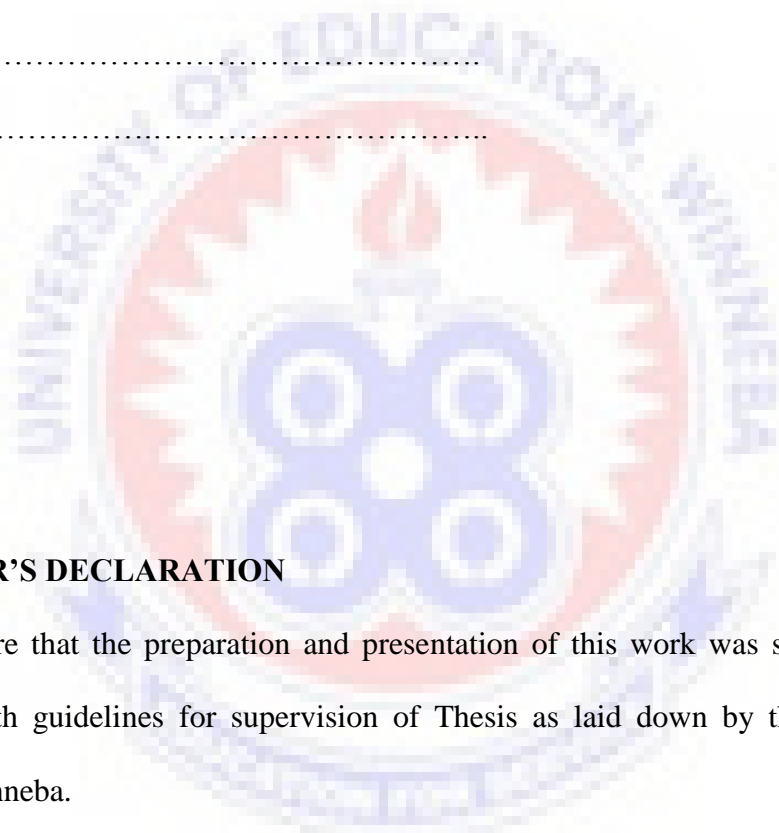
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I hereby declare that the preparation and presentation of this work was supervised in the accordance with guidelines for supervision of Thesis as laid down by the University of Education, Winneba.
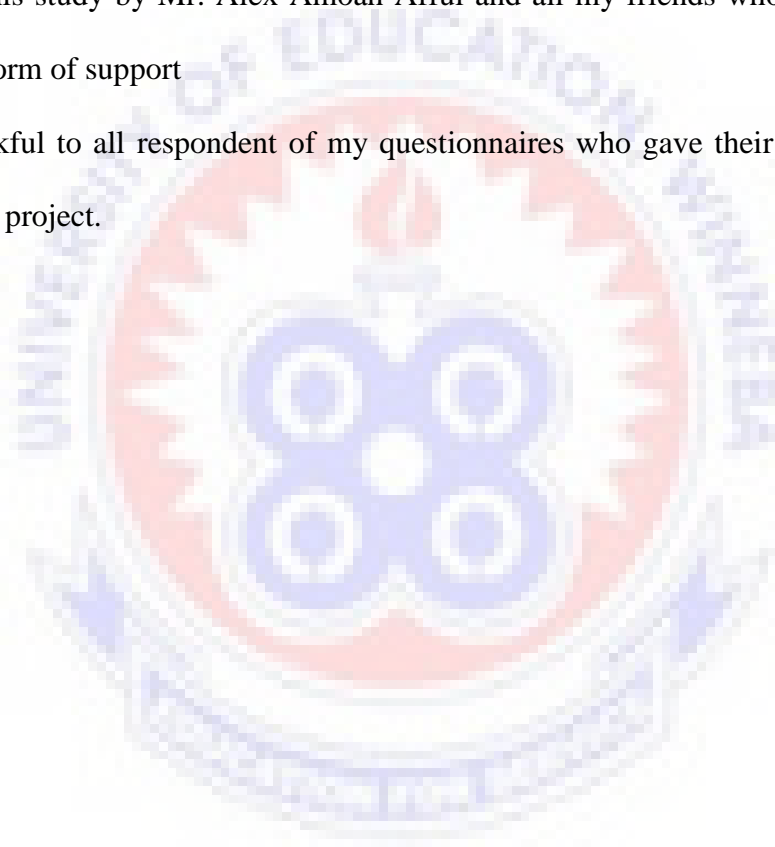
NAME: MR. ALFRED MORRISON

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ACKNOWLEDGEMENTS

DEDICATION

I would like to dedicate this project to my beloved husband Mr. Isaac Addae who has been a constant source of knowledge and inspiration. Again to my children Kwadwo Dankwa Addae, Abena Konadu Addae, Kwasi Ofori Addae and Ama Afriyie Addae for helping me through this project

Special dedication to our Almighty God who gave me all the strength and knowledge I needed.

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LIST OF ABBREVIATIONS

APT ....Arbitrage Pricing Theory

ARB .... Apex Rural Bank

BIS ....Bank for International Settlement

BOG .... Bank of Ghana

GNA .... Ghana News Agency

CAPM ....Capital Asset Pricing Model

IFAD ....International Fund For Agricultural Development

NRB ....Nwabiagya Rural Bank

SPSS.. Statistical Package for Social Science

ABSTRACT

The primary objective of the study was to critically assess the operational risk management in Nwabiagya and Amansie Rural Banks. The study was descriptive and explanatory in nature. Structured questionnaire was used in soliciting for primary data from staff of the selected banks. Convenient sampling technique was used in selecting 90 staff in all. Data analysis was conducted using frequencies, percentages, mean, standard deviation, and simple linear regression model. The study concluded that, operational risk management practices had a moderate correlation with the performance of rural banks. Holding all other things constant, an improvement in the effectiveness of the risk mitigation measures, will lead to an increase in the rural banks' performance by 44.7%, and vice versa. The risk mitigation measures used by the banks were establishing credit standards, deposit collections, staff supervision and training on risk management, adoption of advanced technology, contingency plans, collateral arrangement, security deposits, on-balance-sheet netting, diversifying operations to reduce the impact of any single risk, and risk reporting. It was recommended that, rural banks and even the entire banking industry should invest in advance technologies that could be used to simulate decisions and know the potential outcome, and how that could affect banking operations. For example, there could be software that would determine the level of credit risk based on some well-defined client characteristics.

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Since the late 1990s, globalization, deregulation, consolidation, outsourcing, breaking of geographical barriers by used of sophisticated technology, growth of e-commerce etc., have significantly change the business, economic and regulatory climate of the banking sector (Epetimehin &Fatoki, 2015). These developments introduced more complexities into activities of the financial sector and their risk profiles. Consequently a series of high profile operational loss events, have led banks, insurance and other financial institutions and their managements world over to increasingly view operational risk management as an integral part of their risk management activity like the management of market risk and credit risk (Epetimehin &Fatoki, 2015). The identification and measurement of operational risk is a significant issue for modern-day banks, and Basel Committee defines operational risk as "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events".

It is difficult if not impossible to imagine another sector of the economy where as many risks are managed jointly as in banking. By its very nature, banking is an attempt to manage multiple and seemingly opposing needs. Banks stand ready to provide liquidity on demand to depositors through the checking account and to extend credit as well as liquidity to their borrowers through lines of credit (Kashyap et al., 2002). Because of these fundamental roles, banks have always been concerned with both solvency and liquidity. Traditionally, banks held capital as a buffer against insolvency, and they held liquid assets – cash and securities – to guard against unexpected withdrawals by depositors or draw downs by borrowers (Saidenberg &Strahan, 1999).

In recent years, risk management at banks has come under increasing scrutiny. Banks and bank consultants have attempted to sell sophisticated credit risk management systems that

can account for borrower risk (e.g. rating), and, perhaps more important, the risk-reducing benefits of diversification across borrowers in a large portfolio. Regulators have even begun to consider using bank's internal credit models to devise capital adequacy standards (Cebenoyan & Strahan, 2004). Financial market frictions such as moral hazard and adverse selection problems require banks to invest in private information that makes bank loans illiquid (Diamond, 1984). Because these loans are illiquid and thus costly to trade, and because bank failure itself is costly when their loans incorporate private information, banks have an incentive to avoid failure through a variety of means, including holding a capital buffer of sufficient size, holding enough liquid assets, and engaging in risk management. This study however concentrates on the Ghanaian banking industry.

The Ghanaian banking industry is one of the service industries that are significantly contributing to the growth of the economy. It plays a vital role in capital mobilization and also grants financial facilities to businesses that seek to grow and develop. The Banking sector has undergone significant transformation and continues to improve with new regulations and guidelines seeking to maintain stability (Koomson, 2011). Rural and Community Banks being a branch of the main banking industry, were established to institutionalize financial intermediation in the rural areas, mobilize rural savings for onward lending to agricultural firms and microenterprises and to create the culture of banking among the rural population (Afriyie&Akotey, 2013). This study seeks to critically assess the operations risk management at Nwabiagya and Amansie rural banks in Ghana.

1.2 Statement of the Problem

In Ghana, the intense competition within the banking industry has generated a greater concern to manage the operational activities of banks in order to avert any possible risks that may occur. Operational risk is thus seen as a major challenge today and is described as "life

threatening" in the banking industry. Operational risk losses have often led to the down fall of many financial institutions like Noble Dream, Little Drop, DKM, God is Love, etc. The regulators of financial companies and directors of banks are demanding a far greater level of insight and awareness on the risks they manage, and the effectiveness of the controls they have in place to reduce or mitigate these risks.

Looking at what transpired in the global financial system, there is no doubt that the banking industry is crucial to the economy; hence instability within the industry would have negative consequences on the Ghanaian economy. This serves as the basis for safeguarding the sector to ensure equitable, fair and strong business practices and not giving room for complacency. Poor performance or non-compliance with regulations by individual banks can introduce systemic risks and jeopardize the entire banking industry. There is a growing acknowledgement from banks that a consistent and effective operational risk management framework can help them achieve organizational objectives and superior performance as well as be competitive on the Ghanaian market (Koomson, 2011). This has necessitated a critical assessment into the operational risk management at Nwabiagya and Amansie rural banks in Ghana.

1.3 Objective of the Study

The general objective of this study is to ascertain the effect of credit risk management practices on firm performance. In pursuance of this, the following specific objectives are considered;

1. To assess the nature of operational risks Ghanaian rural banks are exposed to.

2. To assess the operational risks management practices of rural banks in Ghana.

3. To ascertain the effectiveness of the operational risks management practices of rural banks in Ghana.

4. To ascertain the relationship between the operational risks management practices and performance of rural bank loans in Ghana.

1.4 Research Questions

1. What is the nature of operational risks Ghanaian rural banks are exposed to?

2. What are the operational risks management practices of rural banks in Ghana?

3. How effective are the operational risks management practices of rural banks in Ghana?

4. What is the relationship between the operational risks management practices and performance of rural bank loans in Ghana?

1.5 Significance of the Study

The main objective of the study was to reveal the extent to which operational risk affects the activities of banks in Ghana, the need for banks to effectively manage their operational risk to minimize its effect on their operations and how banks could gain competitive advantage through the management of their operational risk. The results will serve as a guide for the banking industry and the business community on how underdeveloped their current operational risk management practices are and the course of action to take in order to effectively utilize their operational risk management policies and strategies to gain competitive advantage. Finally, the study will provide a guide for further studies on operational risk management in other financial institutions.

1.6 Scope of the Study

The conceptual scope of the study covers the operations risks of banks, operations risk management, and the effects of operation risks management practices on loan performance. With regards to organisational context, the study was limited to the operations of Nwabiagya and Amansie rural banks in Ashanti region of Ghana. Staff and management from these banks shall be drawn for the study.

1.7 Limitations of the Study

Access to information was a great challenge. The confidential nature of information on operational risks and bank's code of secrecy made it difficult for employees to willingly provide the needed information. To overcome this constraint the researcher had to seek approval from the management of the banks, by submitting an introductory letter from the school, and also promising strict confidentiality of the information provided. The questionnaires were also filled in anonymity.

Cost incurred in conducting the research was also a challenge. The researcher had to hire the services of well-trained data collectors to assist in the data collection. The researcher had to also travel to the various branches on several occasions. All this came at a cost.

Time as a resource for the study was also a challenge. The researcher was a fulltime employee, had to seat for thought courses and as well conduct the research within a relatively short period of time. The researcher had to fall on the weekends to do most of the write-ups for the study.

1.8 Organization of the Study

The study was organized into five interrelated chapters. Chapter one provided general introduction to the work. Chapter two reviewed literature and theories relating to operational risk management. Chapter three provided the methodological approach to the study. Chapter four provided data analysis and discussions of results. Chapter five provided a summary of findings, conclusions, and recommendation for management and academia.

CHAPTER TWO
REVIEW OF RELATED LITRETURE

2.0 Introduction

The chapter reviewed literature and theories relating to the concepts under study. The items discussed were, overview of the Rural Banking in Ghana, types of banking risks, operational risk management practices in the banking industry, operational performance of banks, operational risks and performance of banks, and theoretical review.

2.1 Overview of Rural Banking in Ghana

The concept of rural banking was adopted from the Philippines by the Bank of Ghana in the 1960s, making it part of the formalized system of banking in Ghana and later made it operational legally in 1976 (Adjeitsey, 2015). Rural and Community Banks (RCBs) are founded and managed by associates of the local community more suitably a district. Though Rural and Community Banks function as profit-making financial institutions, RCBs are not allowed to operate wholly fledged agencies in other districts (Aboagye&Otieku, 2010). RCBs are required by law to deliver formal financial middle role to rural dwellers (deployment of rural saving from surplus bounds and entrench them as loan facilities to needed firms and individuals, predominantly SMEs); formation of the philosophy of formalized banking amongst dwellers of rural communities; and equip dwellers of remote communities; and encourage industrialization in the rural areas (BOG, 2006).

The ARB Apex bank serves as the governing body for all rural banks in Ghana. As at February 2017, there were 142 RCBs in Ghana, as presented in Table 2.1. Considering the regional distribution, Ashanti region had the highest populated RCBs, numbering 26. This was followed by Eastern region numbering 24, Central region numbering 23, Brong-Ahafo region numbering 19, Western region numbering 14, Volta region numbering 12, Northern region numbering 9, Greater Accra region numbering 7, Upper East region and Upper West

region having 4 RCBs each (www.arbapexbank.com/).According to IFAD (2008) RCBs constitute about 50% of the total banking outlets in Ghana and are the largest providers of formal financial services to rural dwellers.

Table 2.1 Regional Distribution of Rural and Community Banks

REGION	NUMBER OF BANKS
Ashanti region	26
Eastern region	24
Central region	23
Brong-Ahafo region	19
Western region	14
Volta region	12
Northern region	9
Greater Accra region	7
Upper East region	4
Upper West region	4
TOTAL	**142**

Source: http://www.arbapexbank.com/maincat_select.cfm?corpnews_catid=13 (2017).

2.2 Risk and Risk Management

Organizations today operate in a dynamic and risky environment and as such they are vulnerable to all kinds of risks in the marketplace, thus making risk an important component of a company's investment strategy. Oxelheim and Wihlborg (1997) define risk as a measure of the timing and magnitude of unanticipated changes, which is evaluated relative to expected changes in variables. These anticipated changes are measured by the expected change, which is normally a result of forecasting. Tchankova (2002) stated that risk is an inherent part of business and public life. Dynamic market relations continuously increase the uncertainty of the environment where business and public organizations work. There are

various types of risks suggested by different authors (Fatemi and Glaum, 2000; Croupy, Galai and Mark, 2001; Romero, 2003).

Risk management is a very important concept for any business as most financial decisions revolve around the corporate cost of holding risk. This issue is particularly important to banks since risk constitutes their core business processes. According to Pyle (1997) risk management is the process by which managers satisfy these needs by identifying key risks, obtaining consistency, understandable, operational risk measures, choosing which risks to reduce, which to increase and by what means, and establishing procedures to monitor resulting risk positions. According to Carey (2001), effective risk management is an efficient and cost effective management technique, which can reduce incidents, claims, wastages and losses. It can also enhance innovation by enabling considered risk taking.

Calomiris and Herring (2002) stated that firms in general, respond to risks in three different ways: lay off' the risk; try to reduce the risk; and retain the risk and deal with it by actively managing it. The exact approach a bank adopts for dealing with its risks depends on both the nature of risk and the strategy of the individual organization. This view is also supported by Lopez (2002), when he stated that there was so far no clearly established single way or approach to manage operational risk and that each bank would establish and develop its own method.

Geiger (1999), Bloom and Galloway (2000), Jameson (2001 and 2002) and Allen and Saunders (2002) all agreed that many banks currently adopt a top-down approach, i.e. using a percentage of their non-interest expenses to calculate their operational risk capital. Fung (2006) indicated that there are a number of drawbacks of this approach. This approach does not truly reflect a bank's risk profile against which the capital is required. It is only a rough estimate of the amount of insurance the bank should be carrying to mitigate the effects of potential exposure to operational risk.

It is clear that this top-down approach could no longer meet the real business needs of banks, which increasingly require a more sophisticated means of assessing and mitigating operational risk. For this reason, some of the banks are switching to a bottom-up approach, which can provide a better approach to risk management. A bottom-up approach evaluates operational risk from the perspective of individual business unit that make up an organization's production process. The advantage of this approach is that it creates a loop so that banks can avoid the worst repercussions of operational failures, such as crisis management and management shake-ups.

The first step of managing operational risk is to identify it. According to Muermann and Oktem (2002), identifying operational risk is especially challenging in banking industry because the operational factors are not well defined. Geiger (2000) suggested using a risk identification matrix (RIM) to identify and segregate operational risk. The causes are used to differentiate the operational from other risks. Operational risks are all unexpected losses, which have their origin in internal errors, or staff related deficiencies in the processes and systems and also in external events.

When the term operational risk management first came on the scene, there were two distinct schools of thought. One school held the idea that it was not possible to manage something which one could not measure and therefore, they stressed on quantitative tools such as loss distributions, risk indicators and economic models. The other school believed that operational risk could not be quantified effectively and therefore they focused more on humanistic, qualitative approaches, such as self-assessments, risk maps and audit findings. However, very soon, people realized the problems of using only one approach but without the others (Geiger, 1999; Muermann and Oktem, 2002; Lam, 2003). The scope of operational risk is measured by the probability and impact of the unexpected losses from a lack of internal control to external event occurrences.

2.3 Types of Banking Risks

There are seven kinds of banking risks identifiable in literature. They are interest rate risk, credit risk, liquidity risk, foreign exchange risk, strategic risk, reputation risk, and operational risks.

2.3.1 Interest Rate Risk

Interest rate risk is generally the potential for changes in interest rates to reduce a bank's earnings or value. Most of the loans and receivables of the balance sheet of banks and term or saving deposits, generate revenues and costs that are driven by interest rates and since interest rates are unstable especially in the developing countries like Ghana so are such earnings. Though interest rate risk is obvious for borrowers and lenders with variable rates, those engaged in fixed rate transactions are not exempt from interest rate risks because of the opportunity cost that arises from market movements (Bessis, 2010).

2.3.2 Credit Risk

The Basel Committee on Banking Supervision (or BCBS) defines credit risk as the potential that a bank borrower, or counter party, will fail to meet its payment obligations regarding the terms agreed with the bank. It includes both uncertainty involved in repayment of the bank's dues and repayment of dues on time.

The objective of credit risk management is to maximise a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. More than 70 percent of a bank's balance sheet generally relates to credit risk and hence considered as the principal cause of potential losses and bank failures (Muteti, 2014). Time and again, lack of diversification of credit risk has been the primary culprit for bank failures. The dilemma is that banks have a comparative advantage in making loans to entities with whom they have an

ongoing relationship, thereby creating excessive concentrations in geographic and industrial sectors. Credit risk includes both the risk that a obligor or counterparty fails to comply with their obligation to service debt (default risk) and the risk of a decline in the credit standing of the obligor or counterparty.

2.3.3 Liquidity Risk

According to Greuning and Bratanovic (2009), a bank faces liquidity risk when it does not have the ability to efficiently accommodate the redemption of deposits and other liabilities and to cover funding increases in the loan and investment portfolio. In Ghana, companies financial institutions like Noble Dream, Eden and Mizpah microfinance companies collapse which was partly due to liquidity problems. These authors go further to propose that a bank has adequate liquidity potential when it can obtain needed funds (by increasing liabilities, securitising, or selling assets) promptly and at a reasonable cost. The Basel Committee on Bank Supervision, in its June 2008 consultative paper, defined liquidity as the ability of a bank to fund increases in assets and meet obligations as they become due, without incurring unacceptable losses.

2.3.4 Foreign Exchange Risk

This is the risk incurred when there is an unexpected change in exchange rate altering the amount of home currency need to repay a debt denominated in foreign currency. Bessis (2010) defines foreign exchange risk as incurring losses due to changes in exchange rates. Such loss of earnings may occur due to a mismatch between the value of assets and that of capital and liabilities denominated in foreign currencies or a mismatch between foreign receivables and foreign payables that are expressed in domestic currency. According to Greuning and Bratanovic (2009), foreign exchange risk is speculative and can therefore

result in a gain or a loss, depending on the direction of exchange rate shifts and whether a bank is net long or net short (surplus or deficit)in the foreign currency.

2.3.5Strategic Risk

Strategic risk according to Emblemsvag and Kjolstad (2002) is the risk which arises as a firm pursues its business objectives either by exploiting opportunities and/or reducing threats. Whichever way this is considered, strategic risk encompasses a variety of uncertainties which are not financial in nature, but rather credit or operational related caused by macro-economic factors, industry trends or lapses in a firm's strategic choices which affects the firm's earnings and shareholders' value adversely

2.3.6Reputation Risk

Reputation is often referred to as "Emotional Capital/ Equity" of a firm and as capital, it is subjected to risk. According to Atkins, Drennan and Bates (2006), a significant part of many successful companies share price is not made up of tangible asset such as property and reserves but from the goodwill element. Hence, a company's reputation includes various intangibles such as the potential future profit stream and the value of its brand. These intangibles may be several times the value of tangible assets in companies with good reputation.

2.3.7 Moral hazard risk

Moral hazard is the most interesting risk that we'll cover. You must have read or heard the phrase "too-big-to-fail" in the media. Too-big-to-fail is nothing but moral hazard in a sense. Moral hazard refers to a situation where a person, a group (or persons), or an organization is likely to have a tendency or a willingness to take a high-level risk, even if it's economically

unsound. The reasoning is that the person, group, or organization knows that the costs of such risk-taking, if it materializes, won't be borne by the person, group, or organization taking the risk.

2.4 Operational Risk

Since 1990, governments around the world have lifted restrictions on financial businesses to support favorable development in the financial industry. However, the new financial instruments introduced after the removal of these restrictions and the conflicts of interest emerging from cross-industry businesses have increased banks' operational risks, creating numerous financial problems (Lai, 2008). Therefore, financial supervisory agencies worldwide have been addressing the problem of operational risks, including the consideration of risk management. Liao (2006) found that overdue loan ratios and capital adequacy ratios were negatively correlated with bank efficiency. Cheng and Chou (1999) asserted that banks with increased overdue receivable ratios were accompanied by increased credit risks.

The Basel Accord (2007) defines operational risk as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. Malfunctions of the information systems, reporting systems, internal monitoring rules and internal procedures designed to take timely corrective actions, or the compliance with the internal risk policy rules result in operational risks (Bessis, 2010). Operational risks, therefore, appear at different levels, such as human errors, processes, and technical and information technology. Because operational risk is an event risk, in the absence of an efficient tracking and reporting of risks, some important risks will be ignored, there will be no trigger for corrective action and this can result in disastrous consequences. Developments in modern banking environment, such as increased reliance on sophisticated technology,

expanding retail operations, growing e-commerce, outsourcing of functions and activities, and greater use of structured finance (derivative) techniques that claim to reduce credit and market risk have contributed to higher levels of operational risk in banks (Greuning and Bratanovic, 2009).

On Tuesday 15th September, 2015, Ghana News Agency (GNA) reported that five Rural Banks in the Central Region are facing eminent liquidity challenges as a result of bad management and improper internal control by their various managements and Board of Directors. This was made known by Mr. Acquah Arhin, President of the Central Regional Chapter of the Association of Rural Banks during his address at 25th Annual General Meeting (AGM) of the Bawjiase Area Rural Bank at Awutu Bawjiase.

The recognition of the above-mentioned contributory factor in operational risk has led to an increased attention on the development of sound operational risk management systems by banks with the initiative being taken by the Basel Committee on Banking Supervision. The Committee addressed operational risk in its Core Principles for Effective Banking Supervision (1997) by requiring supervisors to ensure that banks have risk management policies and processes to identify, assess, monitor, and control or mitigate operational risk. In its 2003 document, Sound Practices for the Management and Supervision of Operational Risk, the Committee further provided guidance to banks for managing operational risk, in anticipation of the implementation of the Basel II Accord, which requires a capital allocation for operational risks. Despite all these efforts by the regulators at addressing operational risk, practical challenges exist when it comes to its management. In the first place, it is difficult to establish universally applicable causes or risk factors which can be used to develop standard tools and systems of its management since the events are largely internal to individual banks. Moreover, the magnitude of potential losses from specific risk factors is often not easy to project. Lastly, it is difficult designing an effective mechanism for systematic reporting of

trends in a bank's operational risks because very large operational losses are rare or isolated. Because of the data and methodological challenges raised by operational risk, the first stage of developing an effective framework to manage it is to set up a common classification of loss events that should serve as a receptacle for data gathering process on event frequency and costs. The data gathered is then analysed (risk mapping) with various statistical techniques such as graphical representation of the probability and severity of risks. This helps to find the links between various operational risks. The process then ends with some estimates of worst-case losses due to events risks. Modelling of loss distributions due to operational risks will enable the right capital charges to be made for operational risk as required by current regulations (Bessis, 2010).

In order for the objectives of setting up an operational risk management framework to be accomplished, it may require a change in the behaviour and culture of the firm. Management must also not only ensure compliance with the operational risk policies established by the board, but also report regularly to senior executives. A certain amount of self-assessment of the controls in place to manage and mitigate operational risk will be helpful.

2.5 Operational Risk and Operational Performance Practices in the Banking Industry

Operational risk management in banks has been increasingly emphasized in the past decade. Big financial scandals, frauds and information technology system failures are important drivers for the greater attention both inside and outside banking institutions to their exposures to and internal handling of such risk. The exposure to different kinds of operational risk is nothing new for the individual bank, but as Moosa (2007) indicated, the trend towards greater dependence on technology, more intensive competition, and globalization have left the corporate world more exposed to operational risk than ever before. For banks, the occurrence of an extreme and major one-off event in its daily

operations may even be more damaging than its credit losses in connection to the current collapse of the financial markets. However, the ability of the bank to properly assess and control, or hedge itself against, the negative economic consequences of such events seems to be less developed than the management of credit and market risks (Flores, Bonson-Ponte and Escobar-Rodríguez, 2006; Moosa, 2007; Bonson, Escobar and Flores, 2008; Wahlstrom, 2009). In dealing with operational risks however, banks can avoid the risk, retain the risk by developing controls to reduce the frequency and severity of the losses or they can choose to absorb these losses through its earnings. Other financing options available to them are:

2.5.1 Insurance

Insurance in recent times has been seen as a valuable instrument through which banks can transfer their operational risk activities. It forces banks to analyze their Operational Risk and to differentiate between its impact and frequency (Bonson, Escobar and Flores, 2008). Insurance companies offer banks specialized products that protect them against direct financial loss (loss of money as well as assets) caused by any act of fraud on the part of any employee. Directors' and officers' liability coverage can protect against losses incurred by directors and officers for alleged wrongful acts and by the firm for money it paid to directors and officers to indemnify them for damages (Wahlstrom, 2009). Property insurance can protect firms against losses from fire, theft, inclement weather, etc.

2.5.2 Outsourcing

Outsourcing business processes to specialized service providers is fast emerging as a tool for operational risk transfer and a common practice in the Banking industry today. Enormous competition and rapidly dwindling bottom lines have compelled banks to renew their focus on their core strategy by outsourcing certain aspects of their business activities including

information technology (e.g., applications development, programming etc), specific operations (e.g., some aspects of finance and accounting, back-office activities and processing etc), and contract functions (e.g., direct sales, front office activities etc) (Moosa, 2007). For effective risk transfer, the relationship with the outsourcing partner should be managed effectively through Service Level Agreements, which should clearly determine the rights, responsibilities and expectations of both the parties.

2.5.3 Basel Accord, Basel II and Basel III Accords

The Basel Committee proposed a set of minimal capital requirements for banks which became law in G-10 countries in 1992 (BIS, 2004). The requirements came to be known as the 1988 Basel Accord, which primarily addressed banking in the sense of deposit taking and lending and its focus was on credit risk. Banks were subject to an 8% capital requirement. Specifically, they would calculate metrics for capital and credit risk and with a requirement that the factor of capital and credit risk must be larger of equal to 8%. In January 1999, the Basel Committee proposed a new capital accord, which has come to be known as Basel II. It then followed with an extensive consultative period, with the committee releasing additional proposals for consultation in January 2001 and April 2003. The finalized Basel II Accord was released in June 2004 and based on three pillars: minimum capital requirements; supervisory review; and market discipline.

Basel III is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector. These measures aim to:

➢ Improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source

➢ Improve risk management governance

➢ Strengthen banks' transparency and disclosures.

These consultative documents formed the basis of the Committee's response to the financial crisis and are part of the global initiatives to strengthen the financial regulatory system that have been endorsed by the G20 Leaders. Basel III is part of the Committee's continuous effort to enhance the banking regulatory framework. It builds on the International Convergence of Capital Measurement and Capital Standards document (Basel II).

2.5.4 Operational Performance of Banks

Generally, indicators used to measure a bank's financial performance include finance-related ratios such as return on total assets ratio, shareholders' return on equity, and net profit ratio. Other methods for measuring a bank's financial performance include the CAMELS rating system proposed by Thomas (1986), which divides a bank's operational performance into five dimensions (i.e., capital adequacy, assets, management capability, earnings, and liquidity) and examines each dimension by calculating its respective financial ratios before using the indicators to measure the bank's performance. Lee (1999) and Dai (2004) examined banks' operational performance and determined the influential factors: efficiency, profitability, capital adequacy, liquidity, management capabilities, and growth potential. Arshadi and Lawrence (1987) indicated that market share and interest revenue have a significant effect on banks' return on assets ratio. Miyakoshi and Tsukuda (2004) determined that a bank's regional location has a significant effect on its operational efficiency and that a company's employee education and training can enhance its operational performance.

Previous studies have shown that favorable risk management not only enhances bank health but also improves its operational performance. Kuo (2007) and Tsai (2008) noted that using risk factors as input variables and managing these variables prior to banking operations could effectively enhance the bank's operational efficiency. Conversely, using the risk factors as

output variables after banking operations converted the variables into reference information and revealed the relevant areas to be improved. Mester (1996) and Dai (2004) confirmed that an increasing ratio between equity capital and risk assets is accompanied by an increased ability for banks to make a profit. Sakar (2006) found that banks with a total market share of 3% in assets have better operational efficiency. Hsieh (2003) added that, when independent banks are changed into financial holding companies, their operating expenses decrease and their overall liquidity ratios increase.

The bank's motivation for risk management comes from those risks which can lead to bank underperformance. Issues of risk management in banking sector have greater impact not only on the bank but also on the economic growth (Tandelilin et al, 2007). Tai (2004) concludes that some empirical evidence indicates that the past return shocks emanating from banking sector have significant impact not only on the volatilities of foreign exchange and aggregate stock markets, but also on their prices, suggesting that bank can be a major source of contagion during the crisis. Banks which better implement the risk management may have some advantages: (i) It is in line with obedience function toward the rule; (ii) It increases their reputation and opportunity to attract more wide customers in building their portfolio of fund resources; (iii) It increases their efficiency and profitability. Cebenoyan and Strahan (2004) find evidence that banks which have advanced in risk management have greater credit availability, rather than reduced risk in the banking system. The greater credit availability leads to the opportunity to increase the productive assets and bank's profit.

Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya for the period 2004 to2008. The findings revealed that the bulk of the profits of commercial banks are not influenced by the amount of credit and non-performing loans, therefore suggesting that other variables other than credit and non-performing loans impact on profits. Laker (2006) argues that greater complexity of banking

activity and increasing dependence on technology and specialist skills has made operational risk as one of the most important risk facing banking institutions of which outsourcing and technology risk are two major sources of operational risk. The formulation of the firm's credit and collection policies will also be influenced by the competing demands of the financial, marketing and operational managers (Schmidt &Piumelli, 1998). The credit management units' primary concern will be to minimise the firm's investment in debtors in order to minimise opportunity costs and the risk of default (Ming, Xialing&Lanbo, 1992). In contrast, the attitude of marketing and sales managers will generally be in favour of relaxed credit policies as a means of obtaining and maintaining customers and of increasing the firm's market position. These competing demands and tensions will have to be reconciled in formulating a definitive credit policy. The risk of having a wrong policy in place can considerably reduce company profits through wrong procedures being followed hence leakage or loopholes in operations. For every credit or loan issued by the bank, there is a perceived risk involved. This risk refers to the possibility of non-payment of the obligation when it falls due. The credit risk may be minimised by a careful examination of the 4Cs of credit which is defined as character, capacity, capital, collateral of the borrower and the prevailing conditions surrounding the business, this is more of an operational issue and if not carefully examined will led to operational risks in the credit process. In determining credit risk, it is advised that banks to assess the Cs of loan applicant in order to guide them in their day to day business and have the assurance that the applicant will comply in the agreement (Epstein, 2009) because this can have a great impact on company profitability.

2.6 Theoretical Review of Banking Risk

This section reviewed some theories relevant to the various types of risks associated with banking operations. They were portfolio theory, stakeholder theory, financial economic theory, new institutional economics theory, information theory, and arbitrage pricing theory.

2.6.1 Portfolio Theory

Since the 1980s, companies have successfully applied modern portfolio theory to market risk. Many companies are now using value at risk models to manage their interest rate and market risk exposures. Unfortunately, however, even though credit risk remains the largest risk facing most companies, the practice of applying modern portfolio theory to credit risk has lagged (Margrabe, 2007). Companies recognize how credit concentrations can adversely impact financial performance. As a result, a number of institutions are actively pursuing quantitative approaches to credit risk measurement. This industry is also making significant progress toward developing tools that measure credit risk in a portfolio context. They are also using credit derivatives to transfer risk efficiently while preserving customer relationships. Portfolio quality ratios and productivity indicators have been adapted (Kairu, 2009).The combination of these developments has vastly accelerated progress in managing credit risk in a portfolio context.

2.6.2 Stakeholder Theory

Stakeholder theory focuses explicitly on equilibrium of stakeholder interests as the main determinant of corporate policy. In certain industries, particularly high-tech and service industry like the banking industry, consumer trust in the company being able to continue offering its services in the future can substantially contribute to company value.

However, the value of these implicit claims is highly sensitive to expected costs of financial distress and bankruptcy. Since corporate risk management practices lead to a decrease in these expected costs, a company values raise (Klimczak, 2005).Therefore stakeholder theory provides an insight into possible rationale for risk management. Firms can reduce the likelihood of financial distress by hedging variability in earnings by managing financial risk.

2.6.3 Financial Economic Theory

The theory of financial economic theory states that corporate risk management is appropriate to increase firm value in the presence of capital market imperfections such as bankruptcy costs, a convex tax schedule, or underinvestment problems. According to Carter et al. (2006) risk management can increase shareholder value by harmonizing financing and investment policies. A credible risk management can mitigate underinvestment costs by reducing the volatility of firm value.

As the underinvestment problem which includes financial risk management is likely to be more severe for firms with significant growth and investment opportunities, various measures such as the market-to-book ratio, research and development to sales ratio, capital expenditure to sales, net assets from acquisitions to size which are indicators of financial performance are used for testing the underinvestment hypothesis.

2.6.4 New Institutional Economics Theory

According to Williamson (1998), this theory predicts that risk management practices may be determined by institutions or accepted practice within a market or industry. Further, the theory links security with specific assets purchase, which implies that risk management can be important in contracts which bind two sides without allowing diversification, such as large financing contract or close cooperation within a supply chain. Firms in regulated

industries provide top management with few opportunities for discretion in corporate investment and financing decisions.

Smith and Watts (1992) showed that regulation is a key determinant of a firm's corporate financial policy. Therefore, if regulated firms face tighter scrutiny and face lower contracting costs, then they are less likely to hedge firm risk. In particular, firms can hedge cash flows to avoid a shortfall in funds that may require a costly visit to the capital markets and at the same time financial risk management is positively related to measures of the firm's investment opportunity set proxies.

2.6.5 Information Theory

Derban, Binner and Mullineux (2005) recommended that borrowers should be screened especially by banking institutions in form of credit assessment. Collection of reliable information from prospective borrowers becomes critical in accomplishing effective screening as indicated by symmetric information theory. Qualitative and quantitative techniques can be used in assessing the borrowers although one major challenge of using qualitative models is their subjective nature.

However according to Derban, Binner and Mullineux (2005), borrowers attributes assessed through qualitative models can be assigned numbers with the sum of the values compared to a threshold. This technique minimizes processing costs, reduces subjective judgments and possible biases. The rating systems will be important if it indicates changes in expected level of credit loan loss. Brown Bridge (1998, pp.173-189) concluded that quantitative models make it possible to numerically establish which factors are important in explaining default risk, evaluating the relative degree of importance of the factors, improving the pricing of default risk, screening out bad loan applicants and calculating any reserve needed to meet expected future loan losses.

2.6.6 Arbitrage Pricing Theory (APT)

A more interesting alternative was the Arbitrage Pricing Theory (APT) of Ross (1976). Stephen Ross's APT approach moved away from the risk vs. return logic of the CAPM, and exploited the notion of pricing by arbitrage to its fullest possible extent. As Ross himself has noted, arbitrage-theoretic reasoning is not unique to his particular theory but is in fact the underlying logic and methodology of virtually all of finance theory.

This theory subscribes to the fact that an estimate of the benefits of diversification would require that practitioners calculate the covariance of returns between every pair of assets. In their Capital Asset Pricing Model (CAPM), Morris (2001) solved this practical difficulty by demonstrating that one could achieve the same result merely by calculating the covariance of every asset with respect to a general market index. With the necessary calculating power reduced to computing these far fewer terms (betas), optimal portfolio selection became computationally feasible.
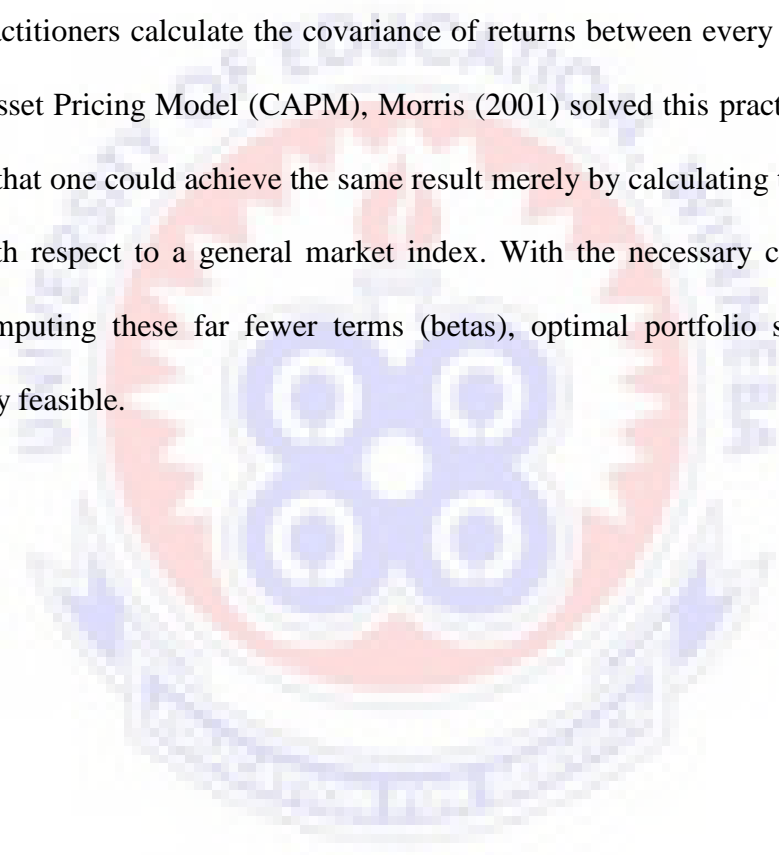
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter explains the research design, research strategy, population, sample size, sampling technique, source of data, data collection techniques, validity and reliability, data analysis techniques and organizational profile.

3.1 Research Design

In every research, the researcher has the option in choosing between a survey, an experiment, history, an analysis of archival records and a case study (Yin, 2003). The study design adopted was survey strategy and according to Saunders et al. (2009), the surveys are usually related with that of the deductive research approach which is normally used in business section and management research. Surveys are usually conducted using questionnaire as the data collection tool (Robson, 2002), as was in this study. The study selected two rural banks (Nwabiagya and Amansie Rural Banks) from the financial sector in Ghana

As opined by Creswell (2009) and Saunders et al. (2009), there are three forms of research strategy, namely, quantitative, qualitative, and mixed approach. In a quantitative study, variables are measured numerically, and data obtained analysed using statistical procedures (Saunders et al., 2009). According to Creswell (2009, p. 4), "qualitative research is a means of exploring and understanding the meaning individuals or groups ascribe to a social or human problem". One way of distinguishing between the two is the focus on numeric (numbers) or nonnumeric (words) data. Studies conducted using a structured questionnaire are mostly quantitative, whiles studies conducted using observation or interview are mostly qualitative in nature (Creswell, 2009). The mixed method combines the qualitative and quantitative approaches in a single study. The overall strength of the mixed is greater than either qualitative or quantitative research (Creswell & Clark, 2007). The objectives of this

study however warrants the use of a mixed approach as both interview guide and structured questionnaires will be used in data collection.

3.2 Population of the Study

A population is the total of all the individuals who have certain characteristics and are of interest to a researcher. Polit and Hungler (1999) refer to the population as an aggregate or totality of all the objects, subjects or members that conform to a set of specifications. The population of the study comprised the staff and management of Nwabiagya and Amansie Rural Banks. Below is the distribution table for the population.

Table 3.1 Population Distribution

Group	Population		Total
	Nwabiagya R/B	Amansie R/B	
Staff	218	225	443
Management	20	12	32
Total	*238*	*237*	*475*

3.3 Sample Size and Sampling Technique

The process of selecting a portion of the population to represent the entire population is known as sampling (LoBiondo-Wood & Haber 1998; Polit &Hungler 1999). In certain studies, it is possible and prudent to conduct study on the entire population, however, due to time limitation, access to respondents and other factors, this study sampled 40 staff and 5 management members each from the two rural banks selected for the study.

Purposive sampling was used in selecting management members. Purposive sampling is selecting respondents who are experts in the area of study, or have the technical knowledge to offer the relevant information needed for the study (Saunders et al., 2009).Convenience

sampling technique was used to select staff from the banks. This is where staff who are readily available and could respond to the questionnaire are selected. In all a sample size of ninety 90 was used. Below is the sample distribution.

Table 3.2 Sample Distribution

Group	Sample		Total
	Nwabiagya R/B	Amansie R/B	
Staff	40	40	80
Management	5	5	10
Total	*45*	*45*	*90*

3.4 Source of Data

The study made use of primary data gathered using questionnaire and interview guide. Questionnaire and interview guide were used as the research instrument for gathering the primary data on the nature of operational risks Ghanaian rural banks are exposed to; the operational risks management practices of rural banks; the effectiveness of the operational risks management practices of rural banks; and the relationship between the operational risks management practices and performance of rural bank loans.

3.5 Data Collection Techniques

The study made use of questionnaires and interview guide as the research instrument. As opined by Saunders et al. (2009), data collected using questionnaires can be stable, constant and has uniform measure without variation. It also reduces bias caused by the researcher's presentation of issues. Questionnaires were designed for the staff of Nwabiagya and Amansie Rural Banks. The interview guide was used in gathering data from the management members sampled.

The questionnaire had five sections. Section A addressed respondents' demographics. Section B addressed the nature of operational risks Ghanaian rural banks are exposed to. Section C addressed the operational risks management practices of rural banks. Section D addressed the effectiveness of the operational risks management practices of rural banks. Section E addressed performance of rural bank loans. The interview guide also addressed all these areas.

3.6 Validity and Reliability of the Instrument

3.6.1 Validity

Validity is defined as the extent to which data collection method or methods accurately measure what they were intended to measure (Saunders et al., 2009). A number of different steps were taken to ensure the validity of the study. Firstly, the research instruments were developed based on empirical literature. Secondly, the research instruments were also pilot tested, which enabled the researcher to make the necessary adjustments for the final questions. The improved questionnaire was used to gather data from reliable sources (staff and management of Ghanaian rural banks). Finally, the data was collected within 3 weeks, and within this short period of time, no major event has been changed with related topic.

3.6.2 Reliability

According to Saunders et al. (2009), reliability refers to the degree to which data collection method or methods will yield consistent findings, similar observations would be made or conclusions reached by other researchers or there is transparency in how sense was made from the raw data. Cronbach's alpha was used to measure the internal consistency. That is, how closely related a set of items are as a group. In social science research like this study, a reliability coefficient of .70 or higher is considered "acceptable".

3.7 Data Analysis Techniques

According to Bernard (1998), data analysis consists of systematically looking for patterns in recorded observations and formulating ideas that account for those patterns. The quantitative data was analysed with the Statistical Package for Social Science (SPSS) v.20. The analysis was organized in five sections. The first section presented the demographics of the respondents using frequencies and percentages.

The second section presented analysis and discussions on the nature of operational risks Ghanaian rural banks are exposed to, using mean scores and standard deviations. The third section presented analysis and discussions on the operational risks management practices of rural banks, using mean scores and standard deviations. The fourth section presented analysis and discussions on the effectiveness of the operational risks management practices of rural banks, using mean scores and standard deviations. The final section assessed the relationship between the operational risks management practices and performance of rural bank loans, using linear regression model. The data from the interview guide were used to support the discussions of the various sections where relevant.

3.8 Organisational Profile

3.8.1 Nwabiagya Rural Bank

3.8.1.1 Background

Nwabiagya Rural Bank Limited (NRB) is a community owned financial institution established in 1987 and located in the Ashanti region. NRB works through nine outlets and is regulated by the Bank of Ghana and supervised by the ARB Apex Bank Limited (an umbrella financial institution owned by the rural banks). NRB is owned by approximately 6000 members (owning about 68%), its directors (9%) and the management (4%). Good well West Africa Microfinance Company Ltd (an external investor) 19% shares.

The first Branch started at Barekese with seven (7) members of staff made up of a Manager, an Accountant, a Clerk, a Teller, a Driver, a Security man and a Janitor. By dint of hard work, the Bank now has nine (9) branches and staff strength of Two Hundred and one (http://www.nwabiagyaruralbank.com/).

3.8.1.2 Vision of the bank

The Bank's vision is to become the best managed and leading Rural Bank in the provision of competitive and affordable financial services in the country.

3.8.1.3 Mission of the bank

The mission of the Bank is to provide efficient and effective financial services by adopting appropriate technology, increase market share, enhance optimal realization of stakeholders' interest, human resource development and product innovations.

3.8.2 Amansie Rural Bank

3.8.2.1 Background

The Amansie West Rural Bank Limited, one of the foremost formidable Rural Banks in the Ashanti Region was established and incorporated as a limited liability company under the company's code "Act 179" of 1963 on 3rd October 1983. It was then certified to commence business within the region on 22nd October 1983.

The Bank finds itself in one of the naturally endowed Districts in the Ashanti Region" Amansie West District" of which its name was coined as, Amansie West Rural Bank Limited (http://amansiebank.com/products/).

3.8.2.2 Objectives of the bank

➢ To provide quality, effective, efficient and prompt service delivery to its client and the public at large.

➢ To develop and inculcate the culture of banking into the people within her catchment areas.

➢ To ensure customer value for savings satisfaction and retention

➢ To champion the course of sustainable economic growth in the financial sector and become one of the topmost rural banks in the country.

➢ To create an enabling environment for clients to interact with staff and management to ensure confidence in the bank.

➢ To secure a maximum market volume and share by 2015

➢ To improve the competence of our human resource through formal training, internal training, seminars, workshops etc.
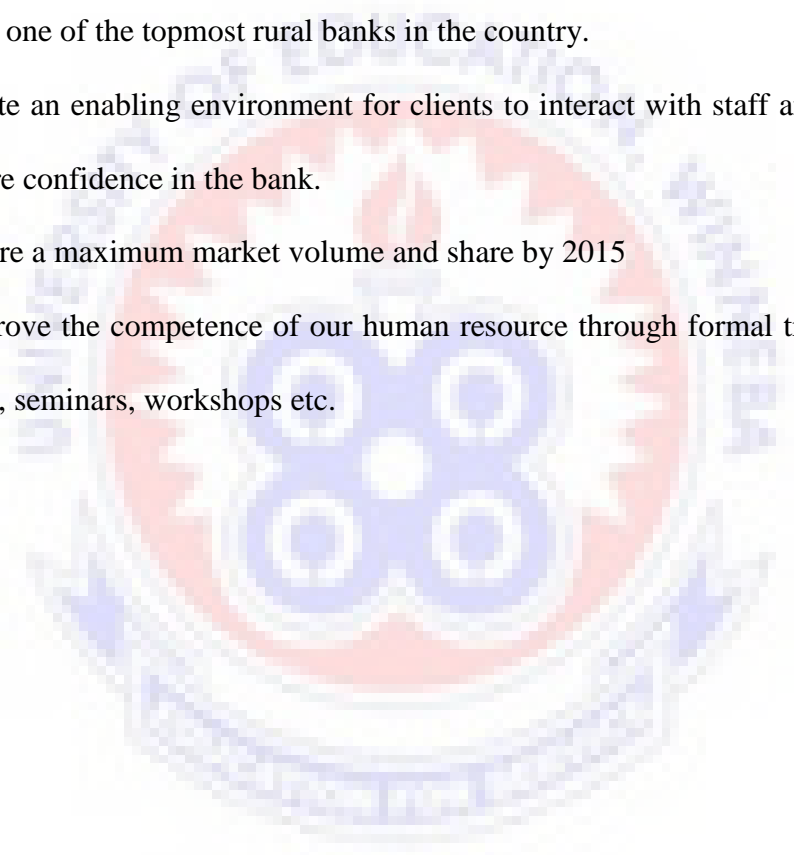
CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.0 Introduction

This chapter entails the analysis of data, the presentation and discussion of results. The primary objective of the study was to critically assess the operational risk management in Nwabiagya and Amansie Rural Banks. To achieve the said objectives, structured questionnaire were used to collect primary data from 47 staff of Nwabiagya Rural Bank and 40 staff of Amansie Rural Bank. A total of 87 questionnaires were therefore used for the study.

4.1 Demographics of Respondents

Table 4.1 presents the demographic characteristics of the respondents in this study. There were 87 respondents in all. The demographics considered in this study were the gender of respondents, age, position, years of service and level of education.

Table 4.1 Demographics of Respondents

Demographics	Responses	Frequency	Percent
1.Name of Bank	Nwabiagya R/B	47	54.0
	Amansie R/B	40	46.0
2.Gender	Male	54	62.1
	Female	33	37.9
3.Age of respondent	18-25 years	27	31.0
	26-35 years	33	37.9
	36-45 years	21	24.1
	46-55 years	6	6.9
4.Current Position	Junior staff	51	58.6
	Middle-level management	33	37.9
	Senior management	3	3.4
5.Years of service	Less than 1 year	3	3.4
	1 – 5 years	24	27.6
	6 – 10 years	24	27.6
	11 – 15 years	21	24.1
	16 years and above	15	17.2
6.Educational level	Diploma	24	27.6
	1st Degree	45	51.7
	Master's Degree	6	6.9
	Professional certificate	12	13.7

Source: Field Work (2017).

The distribution as presented in Table 4.1 showed that 47 (54%) of the respondents were sampled from Nwabiagya Rural Bank and 40 (46%) were sampled from Amansie Rural Bank.

The distribution on gender as presented indicates that, male respondents were more in number than the female respondents. From the analysis presented, 54 (62.1%) of the respondents were male while 33 (37.9%) were female staff.

The age distribution indicated that, staff aged 18-25 years were 27 (31%), those aged 26-35 years were 33 (37.9%), those aged 36-45 years were 21 (24.1%), and those aged 46-55 years were 6 (6.9%). The study was therefore dominated by personnel aged less than 35 years, and this also presents a true reflection of the age distribution of the staff of the rural banks studied.

The analysis indicated that, 51 (58.6%) of the respondents were junior staff, 33 (37.9%) were middle-level management, and 3 (3.45) were senior management members.

The years of service was also important to the researcher as it will determine the amount of experience the staff have had with the banks studied. And this will greatly influence the accuracy and reliability of the information they provide for the study. From the analysis presented, 3 respondents (3.4%) had spent less than a year with the banks, 24 (27.6%) had spent 1-5 years, 24 (27.6%) had spent 6-10 years, and 15 (17.2%) had spent more than 15 years with the banks. The analysis indicates that the majorities (over 95%) of the respondents have had some substantial years of experience with the banks, and are deemed to be knowledgeable to provide a more reliable information for the study.

From the analysis presented, 24 (27.6%) of the respondents were Diploma holders, 45 (51.7%) had a Bachelor degree, 6 (6.9%) had a Masters' degree, and 12 (13.7%) had a professional certificate like ICA, ACCA and CIB. First degree holders therefore dominated the study, and this reflects the true distribution at the bank.

4.2 Nature of Banking Risks

The first objective of the study was to ascertain the nature of banking risks that the banks studied were exposed to. Fifteen (15) different kinds of risks were provided for the respondents to respond using a scale of *1-Not prevalent, 2-Less prevalent, 3-Indifferent, 4-Prevalent, and 5-Highly prevalent*. The results as presented in Table 4.2 were ranked in

descending mean, as higher mean score indicates high prevalence rate. The overall mean score was 3.79, which was approximately 4 (*prevalent*).

Table 4.2 Nature of Banking Risks

Nature of Banking Risks	Mean	Std. Deviation
Commodity price risk; fluctuation in input price	4.38	1.133
Technology risk; potential for *technology* failures	4.24	1.509
Market risk; fluctuation of returns caused by the macroeconomic factors that affect all risky assets	4.10	1.162
Equity risk; depreciation due to stock market dynamics	4.10	1.131
Legal and regulatory risk; change in regulations and law that might affect an industry	4.04	1.275
Operational risk; risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems	4.03	1.166
Foreign-exchange risk; fluctuation in exchange rates	4.00	1.121
Interest rate risk; potential for changes in interest rates	4.00	1.151
Liquidity risk; ability to meet its short-term obligations	4.00	1.267
Credit risk; loan default	3.90	1.162
Solvency risk; ability to meet long-term obligations	3.90	1.303
Strategic risk; uncertainties which arise as a firm pursues its business objectives	3.86	1.202
Political risk; political instability and government decisions	2.86	1.259
Reputation risk; possibility of losing reputational capital like goodwill	2.76	1.141
Off-balance sheet risk; assets or liabilities that do not appear on a company's balance sheet but that are nonetheless effectively assets or liabilities of the company	2.72	1.148
Overall Mean Score	*3.79*	*.85361*

Source: Field Work (2017).

From the analysis presented in Table 4.2, commodity price risk was ranked as the most prevalent risk affecting the operations of the bank. This represents the input price risks that affect the rural banks. The mean score was 4.38, which was approximately 4 (prevalent). The output price of every firm depends on its input price. Every business operates so as to maximize returns for owners, and therefore the fluctuations in the cost of operation like Bank of Ghana base rate, cost of rentals (like office space), cost of other fixed and movable assets, etc., are likely to influence fluctuations in output price such as service charge, interest rates on loans, overdraft and other credit facilities.

Technology risk, which includes the potential for technology failures, had a mean score of 4.24 (prevalent). In a country like Ghana where technology hasn't reached its maturity, there are bound to be challenges when using them. It is not uncommon for the internet services of banks to be cut off, thereby halting service delivered to customers. This causes agitations and frustrations among customers, which has a ripple effect on the banks.

Market risk which represents the fluctuation of returns caused by the macroeconomic factors that affect all risky assets also had a mean score of 4.10 (prevalent). The macroeconomic factors like inflation, GDP, unemployment rate, etc., affect savings and investments from bank customers and potential customers. One major source of fund for banks' operations is deposits, and unemployment and inflation could affect customers' ability to save, which also influences banking operations. For example, in periods of high and fluctuating inflation, people will prefer buying assets other than holding or saving money at the bank.

The next risk was equity risk, which represents the depreciation in equity due to stock market dynamics (mean was 4.10). Legal and regulatory risk had a mean score of 4.04.This represents the changes in regulations and law that might affect an industry. Every industry in governed by rules and regulations from international and home country, and the banking industry is no exception. Due to the critical nature of the banking industry to an economy

like Ghana, there are a number of stringent measures to put the industry under control. And these measure do sometimes pose challenge to the way and manner in which the firms operate. Recapitalization for example could force a bank to either be out of business of merge with other banks.

Operational risk was also found to be a prevailing risk to the rural banks (mean score was 4.03). Operational risk represents the direct and indirect loss resulting from inadequate or failed internal processes, people and systems or from external events (Basel Accord, 2007). The developments in modern banking environment, such as increased reliance on sophisticated technology, expanding branches, growing e-business, and outsourcing of functions, all contribute to higher levels of banks' operational risk.

The fluctuations in foreign-exchange risk in a country like Ghana, greatly impacts banking operations (mean was 4). Such loss of earnings may occur due to a mismatch between the value of assets and that of capital and liabilities denominated in foreign currencies or a mismatch between foreign receivables and foreign payables that are expressed in domestic currency. Greuning and Bratanovic (2009) however explained that, foreign exchange risk is speculative and can therefore result in a gain or a loss, depending on the direction of exchange rate shifts and whether a bank is net long or net short (surplus or deficit)in the foreign currency.

Interest rate risk, which is the potential for changes in interest rates to reduce a bank's earnings, had a mean score of 4. Interest earned on loans granted to customers presents much financial gains for banks. Higher interest rate has the potential of limiting the amount of loan customers could borrow or even reduce the number of customers who may express interest in these loans. These cumulatively influence the overall earnings by the banks on loans disbursed. Greuning and Bratanovic (2009) added that, the primary source of interest rate

risk arises from timing differences in the maturity of fixed rates and the re-pricing of the floating rates of bank assets, liabilities, and off-balance sheet positions.

Liquidity risk is the ability to meet its short-term obligations, and this also posed a significant risk to the operation of rural banks in Ghana (mean was 4). A bank may face liquidity risk when it does not have the ability to efficiently accommodate the redemption of deposits and other liabilities and to cover funding increases in the loan and investment portfolio.The Basel Committee on Bank Supervision consultative paper (2008) stated that, the primary role of banks in the maturity transformation of short-term deposits into long-term loans makes banks inherently vulnerable to liquidity risk.

Credit risk or loan default was also another source of risk that affects the operation of rural banks (mean score was 3.90). The analysis of the financial soundness of borrowers has been at the core of banking activity since its inception. Credit risk which may be either doubtful or complete bad debt, had a ripple effect on banks' liquidity position. Depositors' funds are disbursed as loans, so if there are lots bad debts, bank will face challenge meeting withdrawal needs, which could lead to collapse of bank in an extreme case. Noble Dream, DKM, are classical cases of this.

Whiles liquidity looks at the ability of banks to meet the short-term financial obligations, solvency risk is the ability of banks to meet its long-term obligations. Solvency risk had a mean score of 3.9 (prevalent). Strategic risk also had a mean score of 3.86. Strategic risk represents the uncertainties which arise as a firm pursues its business objectives. That is, the external events and trends that affects banks' growth and its ability to maximize value for shareholders. Lapses in banks' strategic choices when exploiting market opportunities, could have a devastating effect on the performance of banks. As explained by Slywotzky and Drzik (2005),strategic risks are often unpredictable and takes different forms, making it difficult for managers to develop a systematically approach in addressing them.

The respondents were indifferent that their banks experienced political risk (political instability and government decisions). This is because Ghana had for more than three decades enjoyed political stability. The mean score was 2.86, approximately 3 (indifferent). Respondents were also indifferent on reputation risk, that is, the possibility of losing reputational capital like goodwill (mean was 2.76); and off-balance sheet risk, that is, assets or liabilities that do not appear on a company's balance sheet but that are nonetheless effectively assets or liabilities of the company (mean was 2.72).

4.3 Operational Risks Management Practices

The second specific objective of this study was to assess the operational risks management practices engaged by the rural banks. Risk management is a very important concept for any business as most financial decisions revolve around the corporate cost of holding risk. This issue is particularly important to banks since risk constitutes their core business processes. Thirteen (13) general risk management practices were presented to the respondents to respond using a scale of *1-Not at all, 2-Less often, 3-Indifferent, 4-Often, and 5-Very often.* Seven (7) out of the 13 practices were found to be often adopted by the rural banks. The results as presented in Table 4.3 were ranked in descending mean, as higher mean score indicates a more frequent adoption of that management approach by the banks.

Table 4.3 Operational Risks Management Practices

Operational Risks Management Practices	Mean	Std. Deviation
Reserves for loan loss	3.83	1.241
Collateral arrangement	3.79	1.304
Deposit collections to improve liquidity position	3.79	1.221
Security deposits	3.66	1.328
Staff supervision and training on risk management	3.55	1.461
Risk reporting	3.52	1.363
Establishing standards (e.g. Credit Limits)	3.52	1.336
Adoption of advanced technology	3.43	1.245
Diversifying operations to reduce the impact of any single risk	3.41	1.308
Contingency plans	3.41	1.360
On balance sheet netting	3.24	1.257
Transferring risk to partners or clients	3.07	1.319
Using hedging to control risk	2.14	1.047
Overall Mean Score	*3.41*	*.99225*

Source: Field Work (2017).

From the analysis presented in Table 4.3, the most frequently used operational risk management technique was reserves for loan loss, which had a mean score of 3.83 (approximately 4). As part of minimizing the devastating effect of bad debts (credit loss), banks make provision for such anticipated losses. Some monies are set aside for cushioning against credit losses, and this provisions are presented in the financial statements of the banks.

Collateral arrangement has also been one of the often used and most effective approaches in cushioning against credit risk (with a mean score of 3.79). In anticipation of credit default, banks ask their debtors to present documentation on personal assets that are equal or higher in value than the loan amount. In case of default, the bank falls on those assets (which may be in the form of land, building, car, equipment, etc.) and sell them out to defray the debt.

One major goal of banks is to collect deposits and disburse them as loans with interests. The more banks are able to accumulate deposit therefore, there more liquid they become. As they will have enough funds to meet withdrawal needs, even when some loan repayments delay within reasonable time. The mean score for this management practice was 3.79. Security deposit also score a mean of 3.66.

Staff supervision and training on risk management was a risk mitigation measure adopted by the rural banks, and had a mean score of 3.55. Effective supervision on banking operations such as loan approval and disbursement, investments, could greatly reduce some risks exposed to by banks. Training staff for them to be in the known of the dos and don'ts, and their implications to the performance of the bank, could also help reduce some risks which would hitherto arise from the negligence of staff.

Risk reporting had a mean score of 3.52. As indicated by Bessis (2010), operational risk is an event risk, and the absence of an efficient tracking and reporting of these risks will lead to some important risks being ignored. Without risk reporting, there will be no trigger for corrective action and this can result in disastrous consequences.

Banks also do establish credit standards (mean score was 3.52). By this, banks have a well specified loan limit to customers based on the 4Cs of credit which is defined as character, capacity, capital, collateral of the borrower and the prevailing conditions surrounding the borrower.

The staff were however indifferent on the adoption of advanced technology (mean score was 3.43, approximately 3). This is because rural banks generally in Ghana do not invest in high level of technology, because most of them do not have the resources to afford them. Respondents were also indifferent that their banks diversifies operations to reduce the impact of any single risk (mean score was 3.41); that their banks had a contingency plan (mean score was 3.41); that their banks adopted on-balance-sheet netting (mean score was 3.24); and that their banks transferred risk to partners or clients (mean score was 3.07). Banks could transfer some risks like credit risk to clients by requesting for collateral and guarantors, but

not all risks could be transferred. Respondents however indicated their banks less often used hedging to control risk (mean score was 2.14).

4.4 Effectiveness of Operational Risks Management Practices

The third specific objective was to ascertain the effectiveness of the operational risk management practices used by the rural banks. Respondents were asked to respond to the same items under section 4.3 above, sing a scale of *1-Not effective at all, 2-Less effective, 3-Indifferent, 4-Effective, and 5-Very Effective.* The results as presented in Table 4.4 were ranked in descending mean, as higher mean score indicates higher effectiveness. The overall mean score was 3.60, which was approximately 4 (*effective*).

Table 4.4 Effectiveness of Operational Risks Management Practices

Effectiveness of Operational Risks Management Practices	Mean	Std. Deviation
Establishing standards (e.g. Credit Limits)	3.86	1.014
Deposit collections to improve liquidity position	3.79	1.163
Staff supervision and training on risk management	3.76	1.110
Adoption of advanced technology	3.76	1.229
Contingency plans	3.72	1.264
Collateral arrangement	3.72	1.148
Security deposits	3.69	1.124
On balance sheet netting	3.62	1.193
Diversifying operations to reduce the impact of any single risk	3.59	1.073
Risk reporting	3.52	1.199
Reserves for loan loss	3.41	1.196
Using hedging to control risk	3.17	1.296
Transferring risk to partners or clients	3.14	1.340
Overall Mean Score	*3.60*	*.90583*

Source: Field Work (2017).

From the analysis presented in Table 4.4, establishing standards such as credit limits was found to be an effective measure in the management of rural banks' operation risks (mean was 3.86). Deposit collections to improve liquidity position was also an effective measure in managing operation risk (mean was 3.79). Proper staff supervision and training on risk management was effecting in helping reduce operational risk (mean was 3.76).

Even though respondents were indifferent with regards to the adoption of advanced technology as a risk mitigation measure, even with the level of adoption, advance technology has proven to be very effective at reducing operational risks (mean was 3.76). Respondents were indifferent with the use of contingency plans as a risk mitigation practice, however, even with its very little implication, it proved effective at managing operational risks of rural banks (mean was 3.72).

Collateral arrangement which was found as a prominent control measure for risk, was also found to be effective (mean was 3.72). Security deposits was also effective measure in controlling operational risks (mean was 3.69). On balance sheet netting had a mean score of 3.62, indicating it was effective.

Other effective risk mitigation measures such as diversification of operations to reduce the impact of any single risk (mean was 3.59); and risk reporting (mean was 3.52).

Respondents were however indifferent on the effectiveness of reserves for loan loss (mean was 3.41); using hedging to control risk (mean was 3.17); and transferring risk to partners or clients (mean was 3.14).

4.5 Operational Performance

The operational performance of the rural banks were also ascertained, and presented as Table 4.5. The respondents were given some 5 observed items to respond to under this section using a scale of *1-Strongly disagree, 2-Disagree, 3-Indifferent, 4-Agree, 5-Strongly agree,* of

which the mean score indicates an agreement to all the 5 items. The analysis presented was ranked in descending mean. The overall mean score of the rural banks' performance was 3.78, indicating respondents agreed their banks performed well on the dimensions given.

The analysis presented in Table 4.5 indicates that, the rural banks were effective in the utilization of resources (mean was 3.86). There were improved profit margin at the banks (mean was 3.83); greater fee based income (mean was 3.83); effective assets securitization (mean was 3.72); and improved Return on Asset of the Bank (3.66).

Table 4.5 Operational Performance

Operational Performance	Mean	Std. Deviation
Effective utilization of resources	3.86	1.014
Improved profit margin	3.83	.955
Greater fee based income	3.83	.991
Effective assets securitization	3.72	1.236
Improved Return on Asset of the Bank	3.66	1.247
Overall Mean Score	*3.78*	*.92008*

Source: Field Work (2017).

4.6 Effect of Operational Risks Management Practices on Performance

The last specific objective of this study was to ascertain the effect of rural banks' operation risks management practices on their performance. To meet this objective, a simple linear regression technique was conducted using operational risk management practices as the independent variable and rural banks' performance as the dependent variable. The overall mean scores for operational risk management and performance were used in estimating the regression. The equation for simple linear regression is: $y = a + b_x + \varepsilon$.

Where y – dependent variable (performance),

a – intercept,

b – gradient (slope),

x – independent variable (operational risk management practices), and

ε - standard error.

From the results presented in Table 4.6, the R-value of 0.482 indicates a moderate correlation between the independent variable and the dependent variable. The R-square value of 0.232 indicates that, the current independent variable explained about 23.2% of the changes that occur in rural banks' performance. The estimated F-statistic was 25.746 with a p-value of 0.000, which was less than 0.01. This implies that, the R-square (23.2% change in performance) accountable to the effectiveness of the risk management practices was statistically significant at 1%.

Table 4.6 Effect of Operational Risks Management Practices on Performance

Independent Variables	Coefficient	Std. Err.	T	P-value
Intercept	2.260	.312	7.250	.000
Operational Risks Management	.447	.088	5.074	.000
F-statistics				25.746
P-values				0.000
R-value				0.482
R-squared				0.232

Source: Field Work (2017).

From the analysis presented in Table 4.6, the coefficient of operation risk management was 0.447, which indicated a positive relationship between the independent and dependent variables. Holding all other things constant, a 100% improvement in the effectiveness of the risk mitigation measures, will lead to an increase in the rural banks' performance by 44.7%, and vice versa. This was statistically significant at 0.05 (t = 5.074; Sig. = .000), and was therefore accepted. This result fall in line with some past studies, which have shown that

favorable risk management not only enhances bank health but also improves its operational performance. Past studies (for example, Kuo, 2007; Tsai, 2008; Dai, 2004; Sakar, 2006) have noted that using risk factors as input variables and managing these variables prior to banking operations could effectively enhance the bank's operational efficiency.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

The final chapter of this study presented the summary of key findings from the previous chapter, makes some conclusions, and presented some recommendations to management and the people in academia.

5.1 Summary of Findings

5.1.1 Nature of Banking Risks

The significant risk that affect the operation of rural banks were commodity price risk, technology risk, market risk, equity risk, legal and regulatory risk, operational risk, foreign-exchange risk, interest rate risk, liquidity risk, credit risk, solvency risk and strategic risk.

5.1.2 Operational Risks Management Practices

The major risk mitigation measures adopted by the rural banks were reserves for loan loss, collateral arrangement, deposit collections, security deposits, proper staff supervision and training on risk management, risk reporting and establishing credit standards.

5.1.3 Effectiveness of Operational Risks Management Practices

From the risk mitigation approaches adopted by the rural banks, the most effective ones were establishing credit standards, deposit collections, staff supervision and training on risk management, adoption of advanced technology, contingency plans, collateral arrangement, security deposits, on-balance-sheet netting, diversifying operations to reduce the impact of any single risk, and risk reporting.

5.1.4 Effects of Operational Risks Management Practices on Performance

Operational risk management practices had a moderate correlation with the performance of rural banks. Holding all other things constant, an improvement in the effectiveness of the risk mitigation measures, will lead to an increase in the rural banks' performance by 44.7%, and vice versa. This was statistically significant at 1%.

5.2 Conclusions

The primary objective of the study was to critically assess the operational risk management in Nwabiagya and Amansie Rural Banks. For a better appreciate of the concepts and variables, literature and theories were reviewed. A sound methodology was also adopted to enhance the overall reliability of the results. The study concluded that, Operational risk management practices had a moderate correlation with the performance of rural banks. Holding all other things constant, an improvement in the effectiveness of the risk mitigation measures, will lead to an increase in the rural banks' performance by 44.7%, and vice versa. The risk mitigation measures used by the banks were establishing credit standards, deposit collections, staff supervision and training on risk management, adoption of advanced technology, contingency plans, collateral arrangement, security deposits, on-balance-sheet netting, diversifying operations to reduce the impact of any single risk, and risk reporting.

5.3 Recommendation of the Study

After the study, the following recommendations were made;

Although the study found the use of advance technology at the rural banks was minimal, it was considered as an effective means of controlling operation risk. It is therefore recommended that, rural banks and even the entire banking industry should invest in advanced technologies that could be used to simulate decisions and know the potential

outcome, and how that could affect banking operations. For example, there could be software that would determine the level of credit risk based on some well-defined client characteristics.

As a way of improving the liquidity performance of the rural banks, they are encouraged to improve their deposit collections. The banks must also encourage customers to hold cash in their accounts for relatively longer period of time, as these monies are used to provide long term loans. Customers can be encouraged to hold cash in account by giving them rewarding interest on their deposits.

The banks must also train their staff to abide strictly by policies such as credit standards. When credit limits are set for customers based on their characteristics, staff and management must not approve loan beyond the ceiling. This will help reduce credit risk.

5.4 Recommendation for Further Studies

Due to time and other resource constraints, the researcher focused on only Nwabiagya and Amansie Rural Banks. This may affect the generalization of the results to the entire rural banking industry. Further studies must therefore consider adding on more rural banks in the country, to enrich the outcome of the study.

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APPENDIX A

QUESTIONNAIRE FOR STAFF AND MANAGEMENT

I am a postgraduate student from the above named university, conducting a research on the topic "critical assessment of operational risk management in Nwabiagya and Amansie Rural Banks".The study is purely an academic exercise, and responses from you will be treated with much confidentiality.

Kindly spend some few minutes in responding to the following items.

PART I: PERSONAL DATA

1. Name of bank: Nwabiagya Rural Bank [ ] Amansie Rural Bank [ ]

2. Gender   Male [ ]   Female [ ]

3. Age of respondent: 18-25yrs [ ]   26-35yrs [ ]   36-45yrs [ ]   46-55yrs   [   ]

      Above55yrs []

4. Current position: Junior staff [ ] Middle-level management [ ] Senior management [ ]

5. How long have you been working with your bank?   Less than 1yr [ ]   1 – 5yrs [

]   6 – 10yrs[ ]   11 – 15yrs [ ]   16yrs and above [ ]

6. Educational level: Secondary [ ]   Diploma [ ]   1st Degree [ ] 2nd Degree [ ]

      Professional certificate [ ]

PART II: NATURE OF BANKING RISKS

7. Kindly indicate the prevalence rate of the following general banking risks as pertained to your bank. Please respond using a scale of *1-No prevalence, 2-Less prevalent, 3-Indifferent, 4-Prevalent, and 5-Highly prevalent.*

Banking Risks	1	2	3	4	5
a) *Credit risk*; loan default					
b) *Operational risk*; risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems					
c) *Market risk*; fluctuation of returns caused by the macroeconomic factors that affect all risky assets					
d) *Political risk*; political instability and government decisions					
e) *Off-balance sheet risk*; assets or liabilities that do not appear on a company's balance sheet but that are nonetheless effectively assets or liabilities of the company					
f) *Commodity price risk*; fluctuation in input price					
g) *Equity risk;* depreciation due to stock market dynamics					
h) *Foreign-exchange risk*; fluctuation in exchange rates					
i) *Solvency risk*; ability to meet long-term obligations					
j) *Interest rate risk*; potential for changes in interest rates					
k) *Liquidity risk*; ability to meet its short-term obligations					
l) *Legal and regulatory risk*; change in regulations and law that might affect an industry					
m) *Reputation risk*; possibility of losing reputational capital like goodwill					
n) *Strategic risk*; uncertainties which arise as a firm pursues its business objectives					
o) *Technology risk*; potential for *technology* failures					

PART III: OPERATIONAL RISKS MANAGEMENT PRACTICES

8. Kindly indicate the extent to which your bank uses the following operation risk management strategies. Please respond using a scale of *1-Not at all, 2-Less often, 3-Indifferent, 4-Often, and 5-Very often.*

Operational Risks Management Strategies	1	2	3	4	5
a) Using hedging to control risk					
b) Transferring risk to partners or clients					
c) Diversifying operations to reduce the impact of any single risk					
d) Establishing standards (e.g. Credit Limits)					
e) Risk reporting					
f) Adoption of advanced technology					
g) Contingency plans					
h) Staff supervision and training on risk management					
i) Collateral arrangement					
j) Deposit collections to improve liquidity position					
k) Security deposits					
l) On balance sheet netting					
m) Reserves for loan loss					

PART IV: EFFECTIVENESS OF THE OPERATIONAL RISKS MANAGEMENT PRACTICES

9. Kindly indicate the effectiveness of the following risk management strategies at reducing the operational risks of your bank Please respond using a scale of *1-Not effective at all, 2-Less effective, 3-Indifferent, 4-Effective, and 5-Very Effective.*

Operational Risks Management Strategies	1	2	3	4	5
a) Using hedging to control risk					
b) Transferring risk to partners or clients					
c) Diversifying operations to reduce the impact of any single risk					
d) Establishing standards (e.g. Credit Limits)					
e) Risk reporting					
f) Adoption of advanced technology					
g) Contingency plans					
h) Staff supervision and training on risk management					
i) Collateral arrangement					
j) Deposit collections to improve liquidity position					
k) Security deposits					
l) On balance sheet netting					
m) Reserves for loan loss					

PART V: OPERATIONAL PERFORMANCE

10. Please indicate by ticking (√), the extent to which you agree with the following statements as an effect of your bank's risk management policies. *Use a scale of 1-Strongly disagree, 2-Disagree, 3-Indifferent, 4-Agree, 5-Strongly agree.*

Operational Performance	1	2	3	4	5
a) Improved Return on Asset of the Bank					
b) Improved profit margin					
c) Effective utilization of resources					
d) Effective assets securitization					
e) Greater fee based income					

THANK YOU…!