

**EXAMINING THE IMPACT OF INFORMATION TECHNOLOGY ON THE
FINANCIAL PERFORMANCE OF ASUTIFI RURAL BANK;**

BY

BISMARK ADUSEI BAFFOUR

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DEDICATION

This work is dedicated to my Family for their support.

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ABSTRACT

Information and communication technology has for the last two decades become very popular with major commercial banks in Ghana. Presently, rural banks in Ghana have also computerized and networked their operations. ARB Apex Bank, with the support of Bank of Ghana, has helped embark on nationwide computerization of all the rural banks in Ghana. This research study aims to examine the impact of information technology on the financial performance of Asutifi Rural Bank in the Brong Ahafo Region. Perceptions of the management staff of the rural bank, branch managers, staff members and customers were collected using a survey method. In all 155 people were sampled from Asutifi Rural Bank. Questionnaires were used to collect data randomly from the customers and staff of the Bank. Two types of questionnaires were prepared and distributed among staff and customers. Both semi-structured and 5-point likert scale questionnaire were developed. Data analysis was done using descriptive statistics approach and the one-sample t-test statistics. The findings established that information technology has a positive linear relationship with the financial performance of rural banks. The study concludes that we can say information technology has a positive impact on the image, goodwill and growth of Asutifi rural bank. The study recommends that customers should be prioritized by Asutifi rural bank before information technology. It is vital to set the needs and wants of customers first before you introduce any technological program or device.

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LIST OF ACRONYMS AND ABBREVIATIONS

ARB	Association of Rural Banks
BOG	Bank of Ghana
ATM	Automated Teller Machine
PNDC	Provisional National Defence Council
GRCBIP	Ghana Rural and Community Banks Interconnectivity Project
ICT	Information Communication Technology
RCB	Rural and Community Banks
EDP	Electronic Data Processing
OIS	Office Information Systems
MIS	Management Information Systems
DSS	Decision Support Systems
PC	Personal Computers
TQM	Total Quality Management
ACC	Acceding and Candidate Countries
SMS	Short Message Service
RCBs	Rural and Community Banks
LAN	Local Area Network
WAN	Wide Area Network
ROE	Return on Equity
ROA	Return on Asset
CCC	Cheque Codeline Clearing
ACH	Automated Clearing House
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
RFSP	Rural Financial Services Project
EMU	Efficiency and Monitoring Unit

CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 BACKGROUND OF THE STUDY

Rural banks like any banking institution in Ghana are formal sector financial institutions established as public limited liability Companies and operate under the Banking Law 1989, PNDC Decree 225. The mandate of rural banks among other things is to mobilize savings from residents in the rural communities, assist customers in respect of their activities with a view to consolidate, accept cash and cheques for credit and develop their undertakings and participate in any economic activity that will promote and support the social and economic development of the community within which they operate (Anin, 2001).

Information technology has globally turned out to be a key component in economic growth of many developed and developing countries in the world. Many improvements and innovations have taken place in the world in recent years and the most striking and one of the most prominent is the growth of information communication technology. Organizations today are challenged with rapidly changing market situation showed by increase rate of merging and tough competitors. Owing to this, traditional management methods that emphasize on financial figures and on integrated, analytical planning approaches are well-thought-out to be inadequate for the effective and efficient steering of the organization in a changing environment.

Irechukwu' (2000), listed services offered by banks that have been improved through the usage of IT as; account opening procedure, transaction processing, directive on customers account, and recording and storing of customer information. Information Technology can be explained as technologies that supports the information cycle, including collecting, processing, distributing

and storage of information which includes a wide range of technologies such as web browser, database, servers, internet connectivity, computer, word processing application, servers, full text document, main frame computers and etc.

In the Ghanaian banking industry, Information technology has now been recognized as the life wire of banks in the financial sector as it facilitates and supports the financial performance of banks in the country. This makes it necessary to embrace information technology. Information communication technology has been involved in most aspect of human life, creating a major advancement of social progress and the dynamic development in IT has greatly improved its role in every face of human life (Adeoti, 2005)..

Information Communication Technology has also enhanced the overall procedures of banks performance in Ghana, through the use of modernization and creativity concerning information technology which has been adopted by commercial and rural banks, this has led to well-organized, fast and suitable banking procedures with adequate and sufficient quality of service to customers, which has paved way for efficiency and effectiveness to rural banking in Ghana. Currently, rural banking operation in Ghana is becoming very information technology based since the introduction of the Ghana Rural and Community Banks Interconnectivity Project (GRCBIP) (Akinuli, 1999).

Laudon and Laudon, (1991), said that managers of banks cannot overlook information technology due to the fact that it plays a vital role in modern-day organization. The application of information technology theory, strategies, methods and operational strategies to banking service delivery and operations has consequently become a focus of fundamental significance as it concerns all banks and is essential for local and global competitiveness.

1.1 PROBLEM STATEMENT

There has been a broad opening in information technology in the world for most banks and they are presently taking advantage of these developments to deliver better enhanced customer and more efficient and effective services that will increase productivity (Akinuli, 1999).

Yet, the rural banking sector, which is a key strategic sector in the Ghanaian banking industry aimed at accelerating rural and agricultural development, appears to have a blurred picture in the adoption of IT in its operations in the country. The very few study that focused on rural and community banks assessed the impact of IT only on their service delivery, with lacking conclusions of its impact on profitability, loan recovery, deposit mobilization and failing to also address the knowledge and skill of rural banks staff in information technology. Therefore, this constitutes a research gap and this thesis proposes to fill this gap. This study therefore sought to examine the impact of information technology on the financial performance of rural banks in Ghana using Asutifi rural bank in the Brong Ahafo Region as a case study.

1.2 OBJECTIVES OF THE STUDY

The general objective of this study is to examine the impact of information technology on the financial performance of Asutifi Rural Bank in the Brong Ahafo Region of Ghana.

The main objectives of the study are:

1. To determine the extent to which information technology has contributed to customer satisfaction through service delivery.
2. To determine the extent to which information technology has contributed to rural banks performance in terms of profitability.
3. To determine the increase in the level of efficiency and effectiveness of operations (recovery of loans, preparation of financial returns and internal control) since the introduction of information technologies.
4. To determine the skills and knowledge of the rural bank's staff in the use of information technology.

1.3 RESEARCH QUESTIONS

To what extent has information technology impacted on the financial performance of Asutifi Rural Banks?

1. To what extent has information technology devices helped staff of Asutifi Rural Bank in their operational activities?
2. To what extent has information technology devices helped staff of Asutifi Rural Bank in their operational activities

1.4 RESEARCH HYPOTHESIS

H₀: The use of information technology does not have a significant impact on the financial performance of Asutifi Rural Bank.

H₁: The use of information technology has a significant impact on the financial performance of Asutifi Rural Bank.

1.5 SCOPE OF THE STUDY

This study seeks to examine the impact of information technology on the financial performance of Asutifi Rural Bank in the Brong Ahafo Region of Ghana. The bank is qualified for the study due to its different branch locations and their wide spread branch network with high tolerance in information technology practices. The bank's performance is analyzed before and after the introduction of IT into the rural banking industry.

The study is concerned with how the staff and customers of the bank are responding to the new innovations. The study will consider if investment made in IT was worth the end result which was realized. The study will also attempt to elaborate on the new facilities leading to the adjustment and adaptation of IT in the rural banking industry in Ghana.

1.6 JUSTIFICATION OF THE STUDY

Information communication technology has a key motivating and dynamic force to the growth in technology which has positively impacted in almost every sector of Ghana's economy.

Currently, the rural banking industry use computers and other technological devices in their operational activities in order to offer excellent services to their customers thus providing customer satisfaction. Information technology (IT) has improved staff knowledge and customers can also access their bank account information without necessarily going to the banking hall and they can as well make other banking transactions anywhere in the country.

Information technology has also improved government work through skilled human resources, reliable infrastructure, open government and further vital issues of capacity building.

This study will make available proposed recommendations which can be re-adjust to the opportunities, threats, technological competition and contingencies of technological banking in the rural banking systems in Ghana. Milgrom and Roberts (1990) contended that for firms to be successful they should adopt information technology as part of a "system" or "cluster" of mutually strengthening organizational approaches and methodologies.

1.7 LIMITATION OF STUDY

This work is limited to the extent that the researcher was unable to cover all the RCBs in the country as a result of time and cost of transportation, printing and editing.

1.8 ORGANISATION OF THE STUDY

For the work to be orderly and to enhance effective flow of reading and to afford readers of this thesis better understanding of the subject matter, the entire work is to be structured and organized into five (5) main chapters dealing with a particular aspect of the subject matter.

The chapter one contains the proposal and general information about the study. It will include the general introduction, background information of the study, problem statement and objectives of the study, research question / hypothesis, scope of the study, relevance of the study, limitations and the organisation of the study.

The second chapter presents a review of literature related to the study with the view to positioning the study within other similar studies and explores available knowledge in the study area. The chapter also presents a brief profile of the Asutifi Rural Bank.

Chapter three shall detail out the procedure and methods that will be used to carry out the study. It will explain the entire research design and methodology to be used, the data collection method and statistical procedures used to analyze the data. Chapter four shall contain analysis done on the data collected and presents them in forms that shall be easily and readily understood by readers. This will include tables, figures, charts and narrations.

Chapter five will feature a summary of findings, conclusions and recommendations that shall be made appropriate for corrective action.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

Many banks are now using modern computers that will support and assist them to achieve communication and multimedia connection on the internet, intranet and extranet. As Gates (1995), said ‘The computer has had a massive effect on business activities, but its greatest influence won’t be recognized until Personal Computers inside and outside a company are well

Existing studies have concluded two positive effects regarding the relationship between Information Technology and banks’ performance; First, IT can reduce banks’ operational costs (the cost advantage). Second, IT can facilitate transactions among clienteles within a similar network (the network effect) (Farrell and Saloner, 1985; Katz and Shapiro, 1985; Economides and Salop, 1992. Kozak (2005) examines the impact of the progress in IT on the income and cost ineptitudes and efficiencies of the US banking sector during the period of 1992-2003. The research shows a positive correlation between the levels of implemented IT and both profitability and cost savings. A research carried out by Maldeni and Sanath Jayasena (2009) also confirms a positive linear relationship between ICT usage and bank’s financial performance (deposit mobilisation, loan recovery and profit).

2.1 DEFINITION AND MEANING OF INFORMATION TECHNOLOGY

Information technology is defined as collecting, storing, operating and transmitting information. It is the computerization of process which controls information production by means of computers, software, telecommunication, and secondary devices such as E-zwich, Debit cards and Automated Teller Machine. It usually covers the linking of automated technology for the data needs of a business to produce information. Laudon D. and Laudon J. (2001), state that Information Technology encompasses the physical devices and software that link computer hardware components and transfer data from one physical location to another.

Harold and Jeff (1995), oppose that service providers at the financial industry should transform their traditional operating practices and procedures to remain consistent and viable in the 1990s and the years to come. They said that most important inadequacies in the banking industry is a wide spread disappointment on the part of management of both commercial and rural banks to grasp the development of technology and incorporate it into their strategic and business plans.

2.2 OVERVIEW OF INFORMATION COMMUNICATION TECHNOLOGY (ICT)

Improvement in information technology has led to a remarkable progress in the banking industry across the globe. This is because information technology has brought about intense and active modifications in the banking industry. Igwe, (2005), said that the introduction of the electronic mail and computers on every desk at work places and the internet and its use in banking have brought about amazing and remarkable outcomes in banking operations.

The presence of information technology and computer in the financial institutions has enhanced dramatically. Some estimates specifies that, in the 1980's, almost 50 percent of all new capital investment in most organizations has been in information technology (Westland and Clark 2000). Information technology to the growth of business today is extensively recognized. Larger companies and businesses have been using computers for some time now due to improvement of their business via information technology.

2.3 THE EVOLUTION OF INFORMATION TECHNOLOGY

During the late 1950s and all over the 1960s, business information and data was managed and processed using punched card devices, massive mainframe computers and electronic accounting machines with lower capabilities than recent microcomputers. The data processing function was the duty of the (EDP) electronic data processing department. In the 1970s the arrival of basic multi-user networks as terminals got interconnected to the massive mainframes.

It was also the start of database management systems that came as a reply to the encounters brought about by large volume and size of business data. This was the basis of Management Information Systems (MIS), information system (IS), and Decision Support Systems (DSS). All procedures were handled using applications software that were developed with third generation programming languages. The next decades saw the fusion of telecommunications and networking technologies for business organizations. This ushered in distributing office information systems (OIS), data processing and personal computers (PCs). Most important among the goals of business initiatives at this time was improvement in the product and service

quality, therefore investments in total quality management (TQM) described and characterized the strategy of the leading organizations of the 1980s.

The total discovery in information technology occurred in the mid-1990s. This period was the time of information super highway in which organizations used to expand business boundaries by using the new technologies to achieve new opportunities. Business today undergoes rapid changes as a result of technological innovation due to its vibrant and dynamic environment, better and improved awareness and demands from customers. The banking industry of the 21st century works in a multifaceted and viable environment branded by these varying situations and highly erratic economic climate. Information technology is at the center of this global transformation curve.

2.4 SIGNIFICANCE OF ICT IN THE BANKING INDUSTRY

ICT revolution has distorted the conventional banking business model by making it possible for banks to break their comfort zones and value creation chain so as to allow customer service delivery to be separated into different businesses. Thus, for example, primarily Internet banks distribute insurance and securities as well as banking products, but not all the products they distribute are produced by their group (Delgado and Nieto, 2004).

However, the main economic argument for diffusion of adopting the Internet as a delivery channel is based on the expected reduction in overhead expenses made possible by reducing and ultimately eliminating physical branches and their associated costs. This specifically applies to and relevant in the Spanish banking system, which is one of the “over branched” in Europe. As

stated by DeYoung (2005) and Delgado *et al* (2006), the Internet delivery channel may generate scale economies in excess of those available to traditional distribution channels.

Besides them, Haq (2005) also states that bank exists because of their capability to accomplish economies of scale in reducing information asymmetry between depositors and lenders. The unit costs of Internet banking fall more rapidly than those of traditional banks as output increases as a result of balance sheet growth. In this context, DeYoung *et al* (2007) refer to the Internet banking as a "process of innovation that functions mainly as ancillary for physical divisions or branches for delivering better banking services". In the case of the Spanish banks, there is some undependable evidence that shows that the Internet distribution channel has lower unit transaction costs than the two other distribution channels (branch and telephone) for a given type of transaction (money transfer, mortgage loan, brokerage or demand deposits).

2.5 INFORMATION TECHNOLOGY AND BANKS PERFORMANCE

Research on the impact of ICT on rural bank's performance is not enough and the existing studies are too much of European, US, and Australian banking sectors. Carlson *et al* (2000) and Furst *et al* (2002) conducted studies on whether there is a direct connection that exists between engaging in electronic banking and bank's profitability. Furst *et al* (2002), indicates that federally chartered US banks had higher Return on Equity (ROE) by using the normal business model, Information Technology was one of the key factors that affect the profitability of banks within the period under study and they also indicated that most of the banks that are profitable adopt ICT after 1998 but yet they are not first movers. In the same vein, Egland *et al* (1998),

found no evidence of significant differences in performance of electronic banking in the US subject to two caveats:

1. This result may not represent the case for all the banks.
2. Such result stands the chance to change over time as banks become more severe in the use of innovation.

While in a similar study in Kansas USA, Sullivan (2000) also found no methodical evidence that multi-channel banks in the 10th Federal Reserve District were either supported or damaged by having transactional web sites. These results were among the previous findings of Sathye (2005), for the credit unions in Australian banks for the period of 1997 to 2001, indicates that electronic banking has not proved to be a measure for performance enhancing tool. According to Haq (2005) bank's existence depends on their capability to achieve economies of scale in minimizing asymmetry of information between savers and borrowers. Today, one of the key problems facing the banking industry is how ICT has helped banks to maintain the economies of scale whilst changing from bricks and mortar banking to online banking.

Claessens *et al* (2001) supports that, "Role of ICT in the banking industry can permit global economies to setup a financial system before first establishing a fully functioning financial infrastructure instead. In effect, since electronic banking is much cheaper, it includes reduced processing costs for providers and less search and switching costs for consumers, banks can support their services and products involving smaller transactions to lower income borrowers, even in remote areas. In the same way, a research conducted by DeYoung (2005) analyzes the performance of the conservative banking versus the modern banking in the US market and comes out with strong evidence of general experience effects available to all start-ups. However, in a

latest study, DeYoung *et al* (2007) raise and find that, for US community banks and traditional community banks, those multi-channel banks are to some extent more profitable, mainly via increased noninterest income from deposit service charges. Arrangements of deposits from checking accounts to money market deposit accounts, increased use of brokered deposits, and higher average wage rates for bank employees were also observed for click and mortar banks. While no change was explored in loan portfolio mix, these findings substantiate Hernando and Nieto (2007) that internet banking is seen as a corresponding channel.

Centeno (2004) in his research of analysing the acceding and candidate countries (ACCs) adoption of e-banking, classified e-banking adoption factors in two areas

1. ICT factors: This factor includes skill of consumers in using internet and related technologies internet, penetration rates, attitude towards technology, security and privacy concerns.
2. Banking factors: This category involves trust in banking sector, banking culture, Electronic banking culture and Internet banking push.

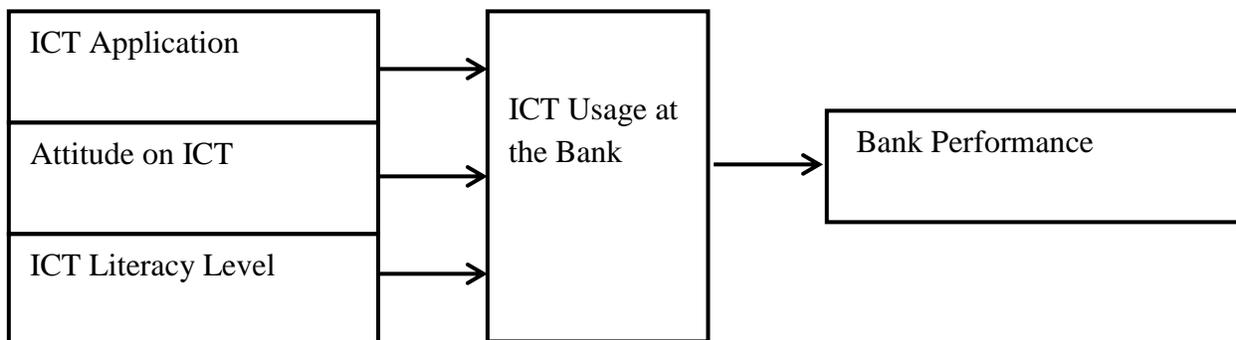
In a related research, conducted by Centeno (2004), he also indicated that lack of PC and internet penetration is still an entry barrier for internet banking development both in EU15 and ACCs. The cost of access services is a main issue for the PC and Internet penetration especially in Central and Eastern Europe countries. On the other hand, there has been a lack of confidence in the banking sector in ACCs due to past tumultuous periods. These concerns are further exasperated with privacy concerns. Magnitude of banking service usage and electronic banking culture are also weaker in ACCs compared to EU 15. A related research with Centeno (2004), conducted by Gurau (2002), shows that successful implementation and development of online banking is based on many interconnected factors. At the moment these aspects as in the recent age in UK these factors have been dealt and overcome by the people. These days' skills of using

internet and cost of accessing the technology, being at home, do not seem to be a bottle neck towards the adoption of innovation from the consumer perspective.

Simpson, (2002) shows that electronic banking is stimulated largely by the prospects of operating costs minimization and operating revenues maximization. An evaluation of online banking in developed and emerging markets indicates that in developed substitute for physical branches for delivering banking services.

The year 2008 witnessed the advent of telecommunication and networking when rural banks began to display information technology systems as a local metropolitan and wide area network.

A research conducted by Maldeni and Sanath Jayasena (2009) studied the impact of ICT on bank branch performance. They explained that ICT usage at the bank branch includes three elements; ICT application, ICT literacy of staff and customers, and attitude of staff and customers towards ICT. They used Pearson's correlation coefficient to measure the linear relationship between variables. The analysis revealed that ICT usage has a positive linear relationship with financial performance and quality performance of bank branches. They further developed a conceptual framework for the research investigation and this framework is adopted as follows.



Source: Maldeni and Sanath (2009)

Figure 2.5.1: Framework for the research investigation

The ICT application is measured as the scope of ICT applications, availability of internet, level of e-mail communication and level of Microsoft office package usage. The attitude towards ICT also includes attitude of branch managers towards ICT usage, attitude of branch staff towards ICT usage, attitude of customers towards ICT usage. Maldeni (2009) also described the ICT literacy level as ICT literacy level of manager, ICT literacy level of branch staff and ICT literacy level of customer.

2.6 INFORMATION TECHNOLOGY IN RURAL BANK'S SERVICE DELIVERY THE CHALLENGES AND SOLUTIONS

Ghana's poor infrastructures have been known as the first key challenge in rural banks. Information has it that in Ghana, there are only one computer and four central telephone lines per thousand people. Also, electricity supply is not regular and efficient. Most significantly, Ghana has very low internet access with less than one internet service provider per thousand people. The cause for such low internet access is due to ineffective implementation of information technology. The problems being faced by rural banks in Ghana in their attempt to ensure a smooth exchange of electronic data and information are:

1. The need to build improved infrastructure that will function as backbone for communication within the rural banks.
2. The need to join forces in sourcing for new technological equipment that will deliver a collective and a common standard.
3. The need to get better and well improved at information technology system development and operation by the management of banks.

4. The need to impress by improving and enhancing the current telecommunications infrastructure.

To fight these challenges, the following were proffered:

1. There should be government and public wakefulness to attract and entice both long and short term investments in the telecommunication industry.
2. Emphasis should be based on the importance of effectively maintaining existing IT infrastructure and equipment.

Morufu and Taibat, (2012) researched on banker's perception on information technology purposely to find out how bankers perceive the benefits and threats related to information technology by investigating banks employees' perception on electronic banking and its effects on bank service delivery.

Thomas *et al.* (2002) itemized that although technology opens up new dimensions of scope and timing but it also generates the possibility for crimes to be committed very quickly. Technology provides benefits for banks but it worsens conventional banking risks. As the amount of products and services offered by technology grows rapidly, consumers are more and more concerned about security and privacy issues. The banking industry has affirmed information privacy and security to be major challenges in the development of consumer electronic commerce. Continuous vigilance and revisions will be indispensable as the scope of technology on banking increases. However, the ease with which capital can potentially be moved between banks and across borders in a technology environment create a greater sensitivity to economic policy management. In accordance with O'Leary *et al.* (1989), two issues come to mind when banks talk about security. They are privacy and security, controlling who gets access to the bank's

computer system and its programmes, and what time to access it. Researches regarding technology on banking examined barriers such as, privacy, security and trust of Web system (Rotchanakitumnuai and Speece, 2003). To be more precise, lack of privacy and security were found to be important obstacles to the adoption of technology on banking services (Sa Challenges on technology is inevitable, therefore care must be taking in handling technology since its negative effect can cause the bank billions of money. Breaches of security and disruptions to the system's availability can damage a bank's reputation; this can potentially affect other technology banking services and its usage (Schaechter, 2002).

Internet online banking is not yet developed and well established in Ghana, (Amoako, 2012). Singh (2002) said that technology has led to new ways of delivering banking services and products to customers, such as ATMs, mobile moneys, SMS alerts and internet banking (IB). Hence banks have established themselves at the forefront of technology implementation for the past two decades. These changes and developments in the banking industry have impacted positively on the service quality, future of the banking activities, and consequently its continually competitive aptitude in the world markets since going along with technology is one of the most significant factors of economic organizations success (Nyangosi, 2009).

Most of the operations of the rural banks were undertaken manually which reduced their competitive edge in the banking industry as most of the commercial banks extended their activities to cover target markets reserved for rural banks in order to increase their customer base, thereby bringing keen competition to the rural banks. For the rural banks to be able to compete well, they have to improve their services by improving upon their technical infrastructure and human resources. The rural and community banks need to be formally incorporated into the mainstream banking services. By regulation, they have to be able to comply

with the central Bank of Ghana's policies of cheque clearing and management information report sending. These requirements led to the formation of the Association of Rural Banks (ARB) and later the ARB Apex Bank Ltd. (Andah and Steel, 2003; Addeah, 2001; Agyei, 2001).

2.7 INTERNAL NETWORK AND COMMUNICATION IN RURAL BANKS

Network application is an important part of an effective and operational information communication technology enabled system, which is expressly true in the instance of rural banks with a branch network. Wide Area Network (WAN) is used by ARB Apex Bank to connect all rural banks in Ghana on a single platform. Local Area Network (LAN) is also one of the basic indicators of the infrastructure needed to support and enable companies to establish electronic banking at a considerable level. The following are examples of some internal network and communication devices and terminologies in rural banking operation:

Data Processing: It is essentially used to study, analyze, summarize, and transform data into useful information. Data processing can be understood as the process where we record, analyze, sort, summarize, disseminate and store data for immediate use.

Telecommunication: Telecommunication is the flow of information electronically from a location to another location which involves setting up a computer network in the office i.e. intranet or outside the office i.e. extranet to facilitate electronic distribution of information among the various branch network of the bank.

Computer Network: it is a link-up of electronic two or more computers together in a network. It is also the connection of two or more computer systems by means of data communication devices. The many include:

- Local-area networks: This is when computers that are closed together, geographically and in the same building are networked to communicate with each other.
- Wireless area networks: This is when networked computers that are farther apart can communicate with each other through radio waves or telephone lines.
- Metropolitan-area networks: A network data that is designed for a metropolis, town or city.

Internet Security: protecting the privacy and security of the customers while transacting business with the bank, and to also prevent fraudulent practices both at the staff and customer level.

Electronic Mail (FTP/ SysAid): is an electronic means of sending and receiving mails. The File-zilla Transfer Protocol is used to send and receive data to and from branch network and Apex as well. The SysAid also serve as a platform for issues to be logged by various rural banks and issued are attended to and resolved by the ARB Apex Bank.

Electronic and Mobile Payment System / ARC Mobile: In the rural banks, transaction alert are received through SMS on customers phones. Customer need to subscribe to the SMS ARC Mobile before messages can be received, which comes with a cost.

Panini Scanner: Used for Cheque Codeline Clearing (CCC) and as Automated Clearing House (ACH) for Association of Rural Banks. The CCC/ACH software is used for making decisions to either accept or decline inward or outward cheques.

E-zwich Machines: for making withdrawals and deposits by both salaried and non-salaried customers who bear the ezwich cards.

2.8 ORIGIN OF THE CONCEPT OF RURAL BANKING

The concept of rural banking evolved in Ghana in the mid-1970s in response to the needs of the rural and agricultural sector for institutional finance. Though the rural and agricultural sectors were the largest contributors to the nation's Gross Domestic Product (GDP) contributing 40% to GDP, 60% of foreign exchange earnings and provide employment to over 70% of the Ghanaian populace and remains a priority sector, it is characterized by low productivity due mainly to inefficient production technology and post-harvest bottlenecks. In 1976, the central Bank of Ghana issued a regulation allowing rural communities to establish locally-owned unit banks with a much lower minimum capitalization than regular commercial banks (Nair and Fissaha, 2010).

The rural banking concept was thus introduced to bridge the rural-urban gap of financial transactions (Addo, 1998). Since their introduction, the rural banks have been at the fore-front of developing pro-poor innovative financial products and modifying their operations to suit the specific needs of the rural farmer, the underserved micro-enterprises and other low income operatives of the rural economy (Obeng, 2009; Owusu-Ansah, 1999), with focus on rural clients, associated with doing business with the poor in order to achieve social missions of poverty outreach while still remaining profitable (Bank of Ghana, 1997; Anin, 2001; Tsamenyi and Uddin, 2008; Ghana Micro Finance, 2012; ARB Apex Bank, 2012).

Prior to that period, the main operators in the rural financial market comprised branches of commercial banks, credit unions as well as other entities in the informal sector such as money

lenders, traders and “susu” collectors. Friends and relations were also important sources of rural finance. Financial intermediation in rural Ghana was at a very low level compared to the situation in urban areas. Consequently, economic units in the rural areas were starved of financial resources. The banks which operated branches in rural areas mostly served the interest of large and medium-size enterprises and resource-based companies Asiedu-Mante (2011).

The banks were reluctant to modify their operations to suit the needs of the peasant farmers. Whatever they were doing was profitable enough without involving the supposedly high risk peasant farmer and small-scale operator. The small scale operators and peasant farmers were therefore generally neglected and were left out to the mercy of informal sector intermediaries like money lenders, ‘susu’ operators, cocoa marketing cooperatives, etc., who charged usurious interest rates. This deterred prospective borrowers and tended to discourage indigenous entrepreneurs Asiedu-Mante (2011).

To improve on the situation, the then existing conventional commercial banks were encouraged to expand their branch network into rural areas, while specialized banking institutions such as the Agricultural Development Bank (ADB) were created. However, these banks were unable to satisfy the peculiar financial needs of rural dwellers because they would not modify their operations to suit the rural community. Furthermore, the banks deemed that their operations were already profitable without getting involved in rural lending, which was perceived to be very costly to the banks Asiedu-Mante (2011).

The International Fund for Agricultural Development (IFAD), the World Bank and the African Development Bank initiated and funded a project (referred to as the Rural Financial Services Project, RFSP) in Ghana that sought to promote growth and reduce poverty in the rural areas. A

key component of the project was the creation of an apex bank that will be the “mini central bank” for the network of rural banks and provide financial, managerial and technical support to them. This led to the incorporation of the ARB Apex Bank in 2000, as a public limited liability company with the rural and community banks as its shareholders. The ARB Apex Bank was set up to serve as a mini central bank for the rural banks because the central Bank of Ghana (BoG) realized the need to strengthen and monitor the rural banks. The Apex Bank’s main role is to provide technical, financial and managerial support and ensure effective supervision to the rural banks under the umbrella of the main central Bank of Ghana (Andah and Steel, 2003).

2.9 THE ERA OF MODERN RURAL BANKING IN GHANA

Rural banks in Ghana have realized the need for efficient and effective service delivery to satisfy their customers. Some customers had lost their deposits previously when information technology had not been introduced into the rural banking industry in Ghana. Presently, customers have more discerning, become cleverer, watchful and sophisticated with regard to saving their money at the place where they will be they will be promptly and efficiently served. This means that they are now looking at competency and the level of service of the various financial institutions before they will deposit their funds. Nearness to the bank is no more the issue: security and the service quality level, its efficiency and speed have become the main reason, but to achieve this is through the adaptation of information technology by rural banks.

Hence, there is a rising need for implementation of new technologies in the Ghanaian banking industry for their operational activities. Rural banks now use technology to deliver efficient and real-time services to its clients, meaning that their customers can, make savings and withdrawals

at the various branch networks and at any rural bank in Ghana as a whole. Before the new era of rural banking in Ghana, the rural banking sector was branded by ineptitudes and truly frustrating service delivery.

But today, most rural banks in Ghana compete mainly through the use of information technology on the amount of time it takes to service their customers. Transactions in the new generation rural banks now take not more than 10 minutes to complete, as opposed to hours of queuing in an unfriendly and chaotic situation. Owing to this, rural banking operations in Ghana have become computer and technological based and very profitable as well. They have introduced integrated banking systems, using LANs, WANs and other technological devices to connect their entire network system.

The Ghana Rural Bank Computerization and Interconnectivity Project (GRBCIP) represent an important aspect of strengthening and improving the capacity of the rural banks to deliver financial services. It allows the rural banks to offer and support new banking services, credit services and financial instruments. The project is to concentrate on building a technical infrastructure intended to open the door for a broad range of new financial services and capabilities that will directly benefit not only the small rural farmers but also most of the people of Ghana. The project has helped train and assists the rural banks in transitioning to automated and standardized banking operations. The GRBCIP has deployed and implemented the necessary banking software and technical infrastructure which interconnects the rural banks headquarters with corresponding branches and agencies and with the Apex Bank headquarters (Ofori-Dwumfuo and B.N.A. Botchway-Anang, 2012)

CHAPTER THREE

METHODOLOGY

3.0 INTRODUCTION

Research method is a systematic process of gathering, presenting, analysing and interpreting data to arrive at a dependable solution to human problems. Methodology is therefore concerned with the study of the research methods. In this study it is necessary to explain the research design, area of the study, population of the study, sample size and sample size determination instrument for data collection. Moreover, it buttresses on the type of questions that can be addressed and the nature of the evidence that is generated (Saunders, 2007).

The chapter ends with a brief profile of the study area; Asutifi Rural Bank. This chapter is relevant to the study because it shows how the research would be conducted to obtain empirical evidence on the fields.

3.1 RESEARCH DESIGN

A research design is the overall plan for relating the conceptual research problem to relevant and practicable empirical research. In other words, the research design provides a plan or framework for data collection and its analysis.

There are three research designs being descriptive, exploratory and explanatory. This is an exploratory research which aims at finding out the impact of information technology on the financial performance of Rural Banks using Asutifi Rural Bank as a case study. Thus the study examines ICT impact on operational activities, loan recovery, internal control and service

delivery of the bank. It also examines knowledge and skill of Asutifi rural bank's staff in the use of ICT.

3.2 POPULATION OF THE STUDY

Population refers to the total number of cases in the focus of interest. The population of the study is made up of ten (10) management staff, thirty five (35) other members of staff of the bank and fifteen thousand five hundred and twenty four (15,524) active customers as at 2015. The customers of the bank are made up of those who held various accounts with the bank before and after the deployment of ICT into its operations. The bank has two broad categories of customers: those in the formal sector, made up of salaried workers and those in the informal sector, made up of petty traders, farmers, crafts men etc.

3.3 SAMPLE SIZE AND SAMPLING TECHNIQUE.

Samples of one hundred and fifty (150) participants were selected for the study. To ensure randomness, one hundred and fifteen (115) customers and thirty five (35) staff from all the six (6) branches of the bank were chosen to answer the questionnaire using simple random sampling technique.

The simple random sampling technique ensures that each individual is chosen randomly and entirely by chance, such that each individual has the same probability of being chosen at any stage during the sampling process. This sampling process recognized the different days within the week that customers comes to the bank. The respondents were selected throughout the five (5) working days of which twenty (20) questionnaires were administered each day to the

customers in all the six branches of the bank and thirty five (35) questionnaires were administered by the staff of the bank at their various branches of the bank. Another factor that was taken into consideration was the time that customers come to the bank. The questionnaires were only administered to customers who agreed to participate in the study.

3.4 DATA GATHERING METHOD

3.4.1 SOURCES OF DATA

For the purpose of this study both primary data and secondary data were used.

The primary data was generated by means of a structured questionnaire instrument. The questionnaire was structured into two. One was used to collect data from staff and the other was designed to suit the customer's opinion and response. The two questionnaires all had two sections; the first section collects the personal data of the respondents while the second section focused on the subject matter of the study.

Secondary data was used to enable compare various profitability ratios since the introduction of Information Technology to help examine its impact on the financial performance of Asutifi rural bank as compared to its earlier operation before the introduction of information technology in rural banks.

3.4.2 DATA COLLECTION INSTRUMENTS

The primary data was obtained from the self-administered questionnaires. This instrument was drafted by the researcher.

The secondary data was obtained from the bank's monthly and annual prudential returns before and after the introduction of ICT which was based specifically from the year 2008 to 2014 for the purpose of the study. Information from the Efficiency and Monitoring Unit (EMU) Report obtained from ARB Apex Bank was also used to analyze the performance of rural banks in Ghana.

3.5 ACTUAL FIELD WORK

The questionnaires were administered by the researcher in person. A face-to-face approach was adopted for the study in disseminating the questionnaires. This approach was adopted in order to monitor the data collection and to ensure that data supplied or responses given are of high quality.

3.6 DATA ANALYSIS

The data collected from the staff and customers was edited, coded and analyzed by the researcher. With editing, the researcher went through the questionnaire from the field to check for the consistency of the responses. After editing, the next stage was the tabulation. Here the main information was classified and tabulated. This was the process where the researcher summarized the quantitative data into statistical tables. After the table had been drawn the data

was then analyzed. SPSS was employed in the entire data analysis process. The statistical methods involved those of descriptive (mean and standard deviation) and Student's t-test (One sample test) which was used to test the null hypothesis. Frequency tables and graphs were also employed in the data analysis. The secondary data obtained was used to analyse the trend of the profitability ratios (ROE and ROA) of the bank before and after ICT was introduced.

3.7 PROFILE OF ASUTIFI RURAL BANK LIMITED

Asutifi Rural Bank Limited was incorporated in 1984 as a rural bank initially to serve the people of Acherensua traditional area and its environs. It was promoted by the Omanhene, Nana Agyewodin Adu Gyamfi Ampem, who surcharged each household in the community to provide the initial share capital to set up the bank. Some individuals in the community also purchased shares to raise the then Bank of Ghana's minimum share capital requirement of three thousand Ghana cedis (GHS3,000.00).

The bank had its head office at Acherensua and started operations by drawing her staff from the community. According to Oppong (2003), the initial staff was mostly teachers, typists and school leavers. The bank drew its customer base from Acherensua and the immediate environ (Oppong, 2003). The members of the Board of Directors were mainly opinion leaders, traditional rulers and teachers drawn from the community. The Bank appointed Directors some of whom were illiterates and semi-literates who lacked the basic understanding of the operations of banking. Until 2001 membership to the board of the bank was allocated to traditional authorities. Each locality where the bank operates a branch was allowed a seat unto the board and so towns or traditional authorities nominated and had their representatives on the board. This practice

sacrificed competence for loyalty of nominees to the traditional authority. Invariably, board members came to the board with the view more to serve the interest of a traditional authority than that of the bank. What therefore was the bank's interest had to be subservient to the interest of opinion leaders and traditional authorities.

The bank operated and continuously for seventeen (17) years recorded losses until 2001 when it registered a maiden profit of about one hundred and forty two Ghana cedis (GHS142.00). By 2000 the bank was rated a 'class C' and was therefore declared 'distressed' by the Bank of Ghana and earmarked for closure. Oppong (2003) says, during the 2001 financial year some concerned citizens and customers cautioned the Member of Parliament of the Asutifi South District to facilitate the removal of the existing Board of Directors and replace it with a more competent and qualified people to run the affairs of the bank asking the Bank of Ghana to suspend the closure (Oppong, 2003).

The Bank currently has six (6) branches, Acherensua, Kenyasi, Nkaseim, Mim, Kasapin and Asumura with fifteen thousand, five hundred and twenty two (15,522) active customers and fifteen thousand, three hundred and sixty (15,360) inactive customers making a total of thirty thousand, eight hundred and eighty-two (30,882) customers.

The Bank's Customers are currently dominated by petty traders, teachers and cocoa farmers and therefore deposits increase when teachers' salaries are paid or during cocoa season.

The ARBL has five (5) departments namely Operations, Audit and Inspection, Credits, Microfinance and Information Communication Technology.

ARBL has a staff strength of 45 (forty-five) manning its branches and departments.

Corporate Vision

The Bank's corporate vision is to be the preferred rural bank in its catchment or operational area.

Corporate Mission Statement

The corporate mission statement of ARBL is to become the preferred bank;

- Providing innovative products and services at competitive price to our customers.
- By using a highly motivated and skilled staff.
- By increasing shareholders wealth and;
- Share our wealth with the community

CHAPTER FOUR

ANALYSIS AND DISCUSSION OF FINDINGS

4.0 INTRODUCTION

This study is primarily interested in examining the impact of information technology on the financial performance of Asutifi rural bank in Ghana. The chapter covers the presentation, analysis and interpretation of data collected from primary and secondary sources. The data here are the replies collated from questions laid out in the questionnaires distributed to the respondents and the secondary data collected from Asutifi rural bank. In order to present the data, all questions in the questionnaire were analyzed including the ones with close relationship with the research questions, objectives as well as hypothesis, through the Software Package for Social Science (SPSS) using a descriptive statistics after which the results were interpreted. The hypothesis testing was conducted using the T-test and appropriate interpretations were made there on according to the results of the testing.

4.1 RATE OF RESPONSE BY RESPONDENTS

Out of 150 questionnaires, 145 were returned from the respondents. This gives a response of 97.42%. This was a good result as a result of follow up and the non-retrievable questionnaires were as a result of the negligence of some customers to help provide the appropriate information.

Table 4.1.1 Rate of Response by Respondents

Questionnaire	Respondents		Valid Percentage (%)
	Staff	Customers	
Returned	35	110	96.67
Not Returned	0	5	3.33
Total	35	115	100

Source: Field Survey (2015)

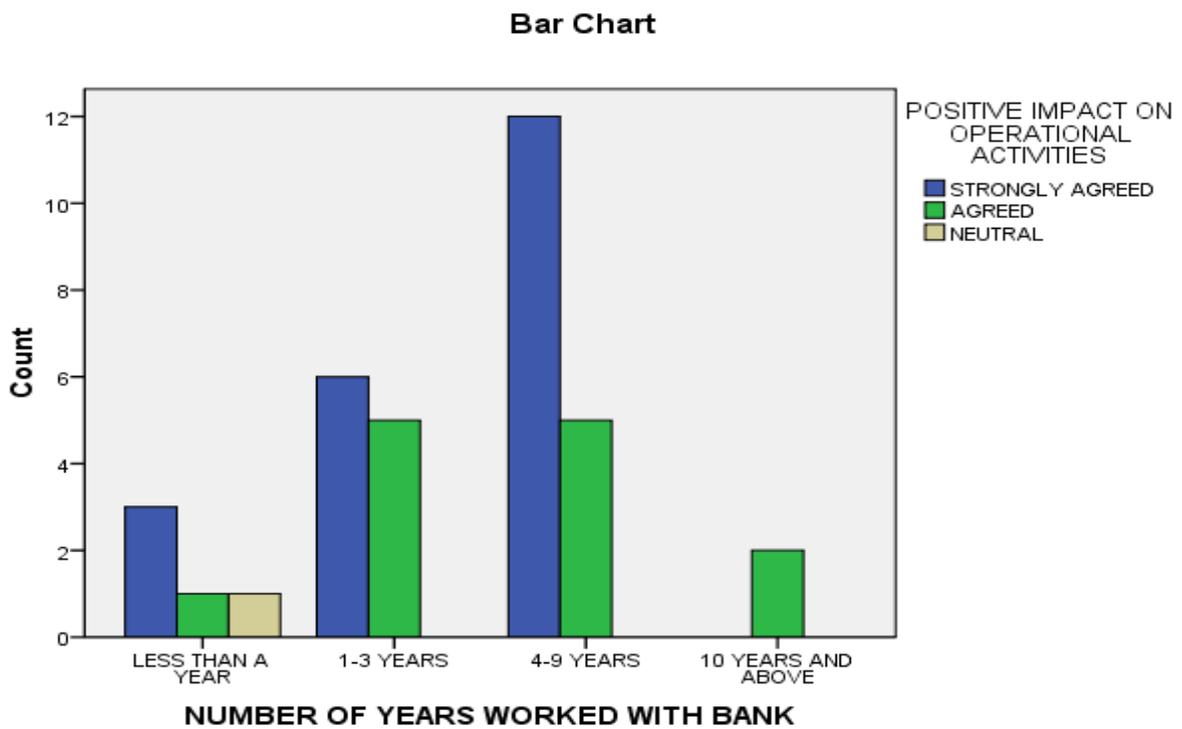
Table 4.1.1 above shows that a total number of 150 questionnaires were distributed to both staff and customers and 110 of these questionnaires were responded by customers while all 35 were responded and received from the staff of the bank, showing average return rate of 96.67% questionnaires which is a very reasonable percentage upon which this study can be based and valid conclusions drawn from the research.

4.2 IMPACT OF I.T. ON THE OPERATIONAL ACTIVITIES OF THE BANK

The number of years that the respondents have worked with the bank had a significant impact on the responses given regarding the impact of IT on the bank's operational activities. Respondents who have worked with the bank for 4-9 years expressed how positive IT has impacted on their various operational activities since it was introduced compared to the manual banking system by strongly agreeing to a number of 12 responses and agreeing to 5 making a total of 17, a total number of 11 who had worked with the bank strongly agreed 6 and agreed 5 to how positively IT has impacted on their operational activities. With a number of 5 who have worked with the bank

for less than a year, 3 strongly agreed, 1 agreed and 1 was neutral according to the responses given. The two responses from category 10 years and above all agreed. Figure 4.2.1 shows the results in details.

Figure 4.2.1 Bar Chart showing Impact of IT on the operational activities of rural banks using the number years the staff has worked with the bank



4.3 IMPACT OF I.T. ON THE TEAM WORK OF ASUTIFI RURAL BANK'S STAFF

Out of the 35 staff respondents, 19 strongly agreed that IT has helped the staff of the bank to work as a team of which 7 were males and 12 were females, 11 agreed of which 8 were males and 3 were females, 4 were neutral with 3 being males and 1 being a female, only 1 person who was a male disagreed to this question. The number of respondents was related to the number of years worked with the bank. The study revealed that, after the manual system was replaced by the IT system, job schedule of various departments were all assimilated into one system, hence data and information needed could be assessed by staff provided you have the relevant security authorization. Those who have worked with the bank between the period of 4-9 years expressed much concern as to how tedious their work was and also the lack of communication they had before the introduction of IT into the rural banking system, 11 of the respondents of this group strongly agreed, 4 agreed and 2 were neutral given a total of 17 respondents representing 48.57%. Table 4.3.1 shows the results in details

Table 4.3.1 Bank Staff work as a team since the introduction of I.T.

Number of years Worked with bank	Gender of Respondent	Bank staff work as a team				Total
		Strongly agreed	Agreed	Neutral	Disagreed	
Less than a year	Male	0	1	1		2
	Female	1	1	1		3
	Total	1	2	2		5
1-3 years	Male	2	1		1	4
	Female	5	2		0	7
	Total	7	3		1	11
4-9 years	Male	5	4	2		11
	Female	6	0	0		6
	Total	11	4	2		17
10 years and above	Male		2			2
	Total		2			2

Source: Field Survey, (2015)

4.4 KNOWLEDGE AND SKILL OF ASUTIFI RURAL BANK'S STAFF IN I.T.

Table 4.4.1, indicates clearly that staff that have been with the bank for 4-9 years with age group ranging from 21-50 had the highest response of 17 having the relevant ICT knowledge representing (48.57%), staff that have been with the bank for 1-3 years with age group ranging from 21-40 had 11 people who had the relevant IT skills representing (31.43%), only 2 people

who have worked with the bank for less than 1 year had the necessary IT skill with 3 staff not having, while there was 1 staff with IT skills and 1 without IT skills for age group 41-50 years who had worked with the bank for 10 years and above. In all the total number of staff with IT skills stood 34 representing 88.57% while the total number of staff without IT skills stood at 4 representing (11.43%)

Comparing the number of years that staff had worked with the bank, 1-3 years and 4-9 years recorded all answered YES, that, they have the necessary IT knowledge and skill in rural banking which was revealed according to the study that; rural bank staff are engaged in so many IT training programmes and other refresher training programmes by the ARB Apex Bank from time to time of which all the staff had their various training sessions according to the department in which they belong, as scheduled by the ARB Apex Bank.

Table 4.4.1 Age Group, Number of Years Worked and the IT Knowledge and Skill of Staff

Number of years worked with bank	Age group of respondent	I have the necessary it skills		Total
		Yes	No	
Less than a year	21-30	1	3	4
	51-60	1	0	1
	Total	2	3	5
1-3 years	21-30	9		9
	31-40	2		2
	Total	11		11
4-9 years	21-30	4		4
	31-40	12		12
	41-50	1		1
	Total	17		17
10 years and above	41-50	1	1	2
	Total	1	1	2

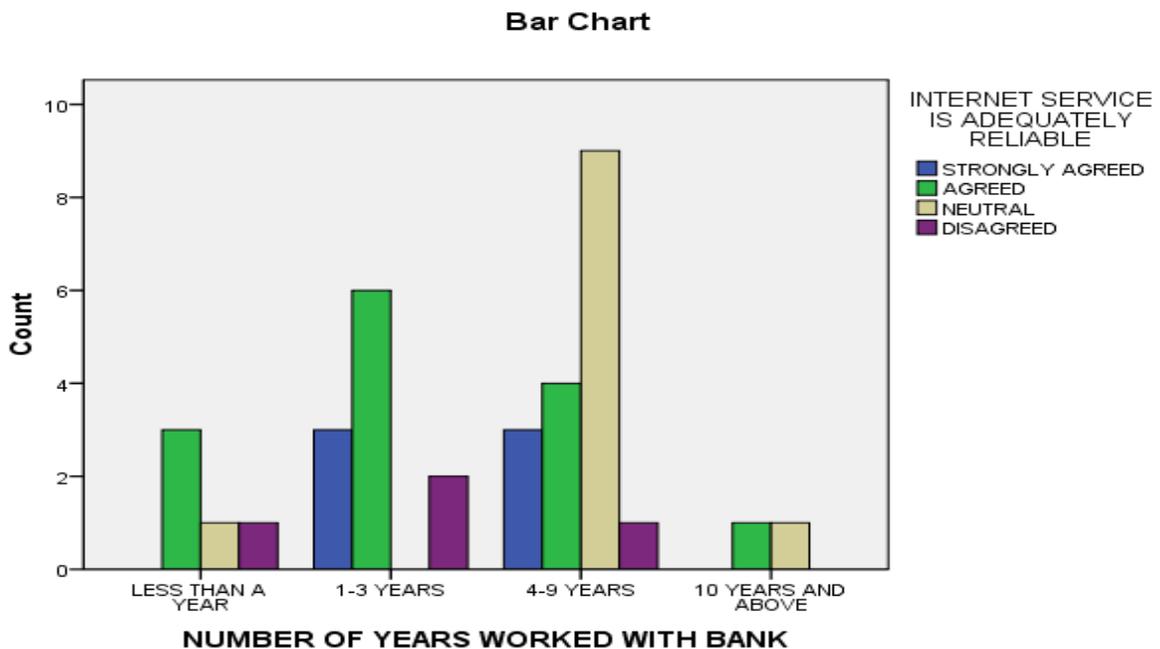
Source: Field Survey, (2015)

4.5 ADEQUATE RELIABILITY OF INTERNET SERVICE

With regard to the reliability of internet service in Asutifi rural bank, 6 respondents strongly agreed that internet service is adequately reliable while 14 agreed, 11 were neutral and 4 of the respondents disagreed. The study showed that, the reason for 11 respondents representing 31.43% of total interviewed staff to select neutral was because they had faced many down-time internet connectivity and will therefore not rate the services of the bank's internet/intranet as adequately reliable and out of this 11 people 9 of them had worked with the bank from the period

of 4-9 years. 4 respondents representing 11.43% also disagreed that internet services was reliable because the network at some of the bank's branch are lost because of what they think will be geographical problem as to the remote location of the bank's branch to gain network access. Those who strongly agreed and agreed of a total percentage of 57.14 were of the view that they had experienced some small level of glitches with the internet access but are resolved by the ARB Apex bank and the system administrators within a couple of seconds and would therefore not hesitate to rate the level of adequacy of the internet services they receive as strongly reliable. The study realized these people who strongly agreed and agreed constituted 54.29% of the staff who have worked with the bank from less than a year to 9 years and out of this 54.29%, 63.16% had worked with the bank from less than a year to 3 years indicating clearly that though the internet service may not have been the best earlier, there seem to be a rapid improvement as the year passes. See figure 4.5.1 below;

Figure 4.5.1 How Adequate is Internet Service reliable in this bank

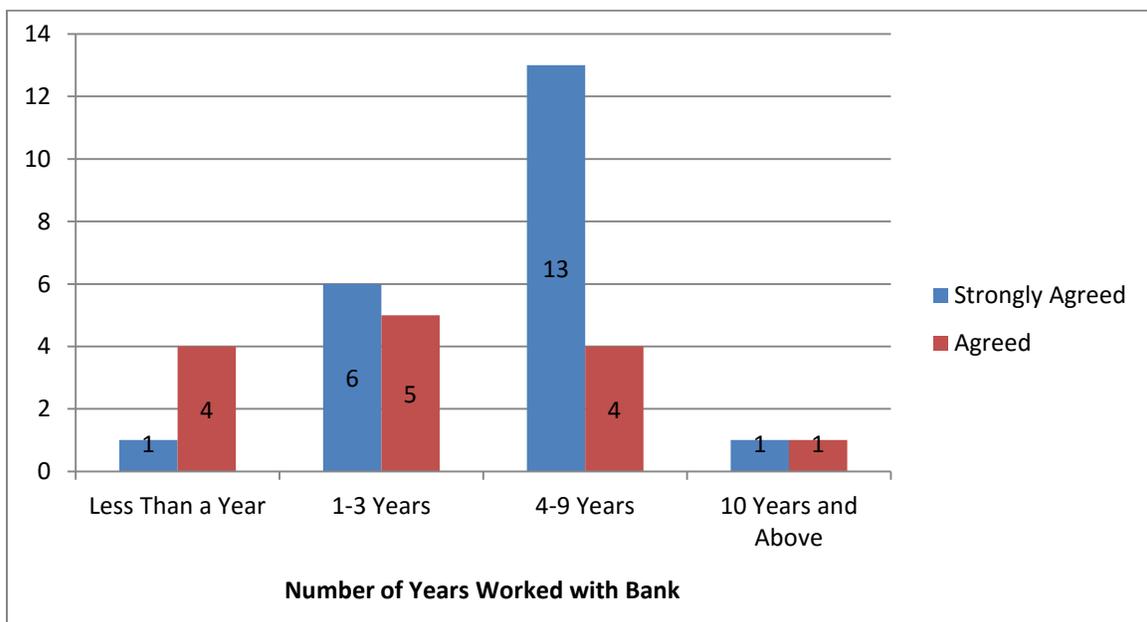


4.6 INFORMATION TECHNOLOGY HAS STRENGTHENED INTERNAL CONTROL

The Bar Chart below shows respondents based on the number of years they have worked with the bank and their responses on how IT has strengthened the Internal Control systems of Asutifi rural bank. Out of the 35 respondents 21 strongly agreed while the remaining 14 also agreed that IT has strengthened the internal control system of rural banks.

61.90% of staff who strongly agreed have worked with the bank for 4-9 years and as the study reveals, IT have made it impossible for a single person to endorse any document with regard to monetary transactions to ensure checks and balances, also the system has strengthened the security level of the bank such that all transactions are captured into a software before authorized and at times a second approval is needed before the transaction could go through which makes it very difficult for money laundering and other fraudulent practices as opposed to the manual system. The remaining percentage of 39.10 who agreed also stood of the same view that IT have really strengthened the internal controls of the rural bank.

Figure 4.6.1 Information Technology has strengthened Internal Control



4.7 CUSTOMER RESPONDENTS

4.7.1 RECEIVE THE DETAILS OF MY TRANSACTION THROUGH SMS ALERT

Table 4.7.1 below elaborates on the recent SMS notification sent to phone numbers of rural bank's customers, which was initiated by ARB Apex Bank. The table shows that out of 46 customers who have worked with the bank for 10 years and above, 34 of them have not subscribe to the SMS alert. The study revealed that all these 34 customers had academic qualification as being 'O' Level/ 'A' Level and some not being educated. In considering a total number of 56 customers who do not receive SMS alert, this group of 'O' Level/ 'A' Level Uneducated customers forms a percentage of 67.86.

Customers who have worked with the bank from less than a year to 3 years contributed the majority of those who receive SMS notification on their phone. Their total 'Yes' answer was 34 out of 54 given a percentage of 62.96, and of this 54 'Yes' 44 of the respondents have education level being BECE/ WASSCE/ SSSCE/ and HND/ BSC/ BA. The study further revealed that the SMS notification by rural banks were not subscribed by the O level/A level and the uneducated customers since most could not read and some also do not have phones.

The subscription started in the middle stage of 2014 and the percentage of subscription specifies that, most of the customers who receive such SMS notifications have not worked with the bank for more than 4 years, hence they are always notified of the availability of such product even before their account opening process is completed and these were people who have completed basic education, high school, and tertiary education and hence could read and understand when these notifications pop up on their phones.

Table 4.7.1 I receive the details of my transactions through SMS notification on my phone

Number of years with bank	Academic qualification of respondent	Receive transaction details on my phone through sms		Total
		Yes	No	
Less than 1 year	Bece/ sssce/ wassce	9	2	11
	Hnd/ bsc/ ba	1	1	2
	Total	10	3	13
1 - 3 years	Bece/ sssce/ wassce	17	4	21
	'O' level/ 'a' level	0	1	1
	Hnd/ bsc/ ba	7	5	12
	Total	24	10	34
4 - 9 years	Bece/ sssce/ wassce	4	2	6
	'O' level/ 'a' level	3	3	6
	Hnd/ bsc/ ba	2	2	4
	Mba/ msc/ mphil	1	0	1
	Total	10	7	17
10 years and above	Bece/ sssce/ wassce	1	0	1
	'O' level/ 'a' level	8	34	42
	Hnd/ bsc/ ba	1	2	3
	Total	10	36	46

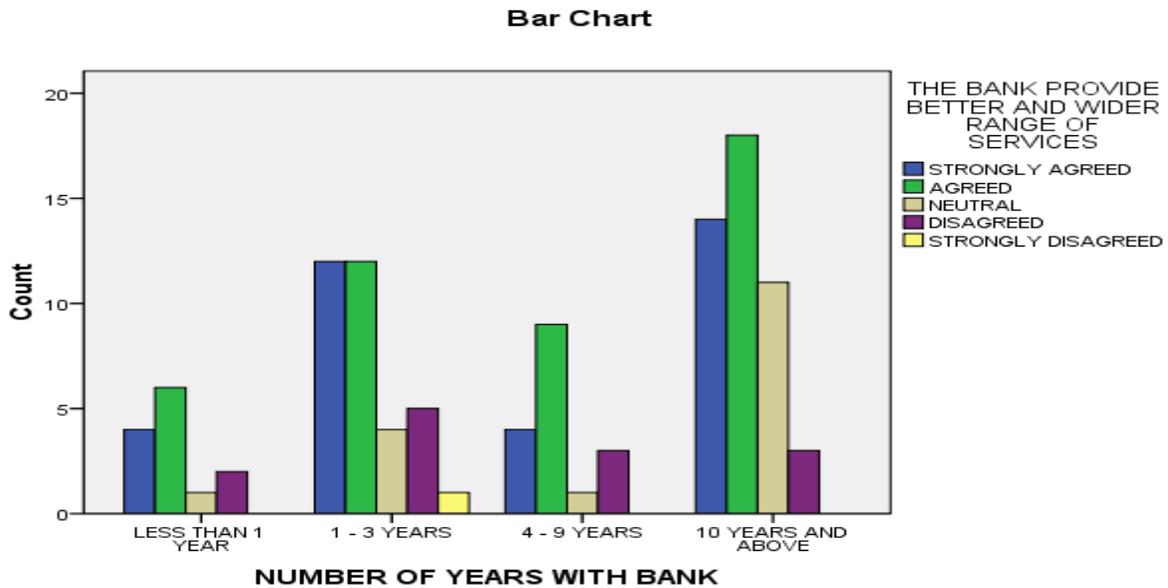
Source: Field Survey, (2015)

4.7.2 THE BANK NOW PROVIDE BETTER AND WIDER RANGE OF SERVICE

Out of the 110 responses received from customers, 63 have worked with the bank before 2011 since the introduction of information technology of which, 17 were customers who have worked with the bank from 4-9 years and 46 have worked with the bank from 10 years and above, 18 out of the 46 respondents representing (39.13%) agreed that there has being a better services since IT and 14 out of the 46 representing (30.43%) strongly agreed, only 3 respondents representing (6.52%) disagreed while the remaining 11 representing (23.91%) remained neutral. This shows clearly that information technology has enhanced and widens the service delivery of these previously existing customers.

Out of the 34 responses received from customers who have worked with the bank from 1-3 years, 12 strongly agreed and 12 agreed both representing a percentage of 70.58, only 1 out of the 34 strongly disagreed with 5 who disagreed both representing (17.65%) and 4 remained neutral representing (11.75%). The percentage figures point to the fact that Information Technology have really introduced a wider range of services to customers of rural banks and that customers do recognize it importance. Figure 4.7.2 below gives a diagrammatic representation of how information technology has helped banks provide better and wider services.

Figure 4.7.2 Bar Chart showing how IT has helped rural banks provide better and wider range of service delivery to customers



4.7.3 INTERNET BANKING HAS REDUCED TRANSACTION COST AND TIME

Out of the 110 respondents, 47 agreed that internet banking has reduced transaction time as compared to the manual system, 31 of the respondents strongly agreed, 18 remained neutral, 11 disagreed and only 3 strongly disagreed. In accessing the responses from customers who had worked with the bank during the manual system (thus from 4 years to 10 years and above) 63.83% of the 47 respondents are those who agreed and 48.39% of the 31 respondents are those who strongly agreed.

Those who disagreed were 11 respondents of which only 5 were customers who have worked with the bank during the manual system and the remaining 6 being customers who have worked with the bank for less than a year to 3 years.

In figure 4.7.3.1, the bar chart seem exactly opposite in shape as figure 4.7.3.2 because most of the respondents disagreed that, they have been delayed at the bank due to computer breakdown. The study revealed that though at times there may be some down-time error in network, most of the customers said that they are attended to within a couple of seconds even when such network hitches occur, hence they will disagree to the fact that they have been mostly delayed at the bank. This explains that since the introduction of information technology most customers spend less transaction time at the rural banks. This is due to the fact that transactions are processed as quickly as possible using IT because of its interconnectivity nature which encompasses different and many technological devices to perform a single function which as opposed to the manual approach.

Figure 4.7.3.1 Internet banking has reduced transaction cost and time

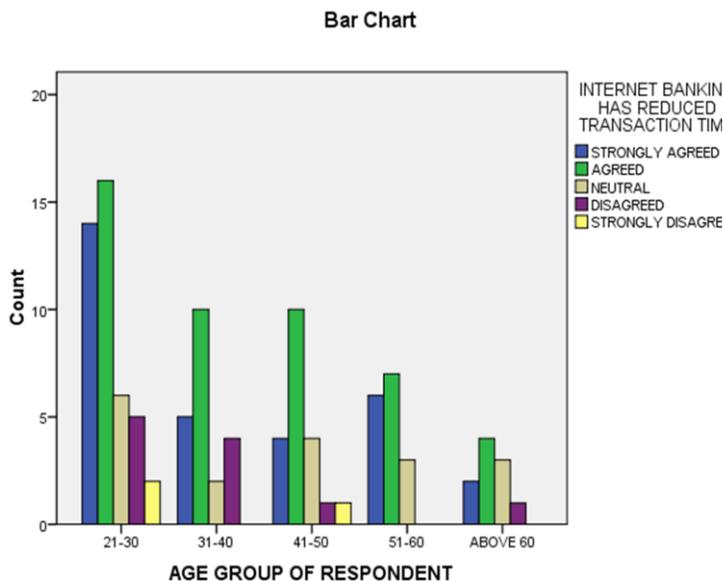
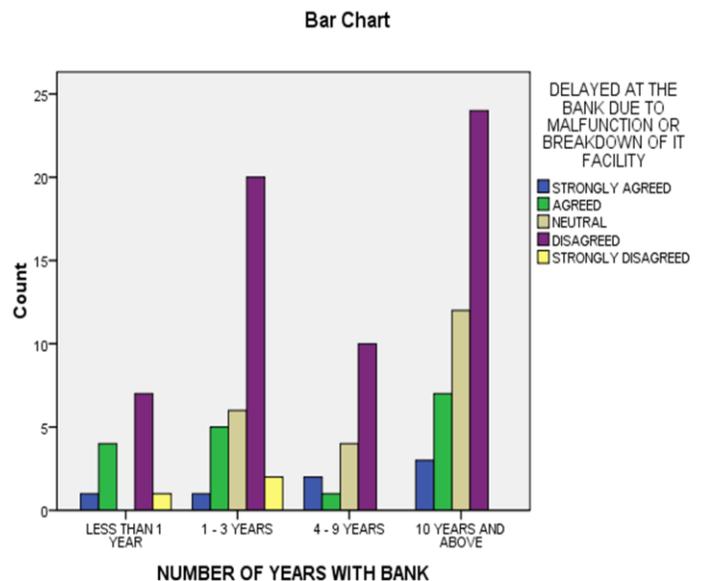


Figure 4.7.3.2 Delayed at the bank due to malfunction or breakdown of IT equipment



4.7.4 WE SHOULD ENCOURAGE OUR COLLEAGUES TO PATRONIZE IN RURAL BANKING

Table 4.7.4 below indicates that a total of 32 male and female respondents strongly agreed and 45 agreed to encourage their colleagues to patronize rural banks. 19 were neutral while 12 and 2 respondents disagreed and strongly disagreed respectively. The table explain in percentage-wise as the number who agreed represent (40.91%) and (29.91%) represents the number who strongly agreed. This shows clearly that the introduction of IT has increased the interest of rural bank’s customers to encourage other potential customers as well to patronage their service.

Table 4.7.4 we should encourage our colleagues to patronize rural banks

Respondent		WE SHOULD ENCOURAGE OUR COLLEAGUES TO PATRONIZE RURAL BANK					Total
		STRONGLY AGREED	AGREED	NEUTRAL	DISAGREED	STRONGLY DISAGREED	
GENDER OF RESPONDENT	MALE	18	15	7	4	1	45
	FEMALE	14	30	12	8	1	65
Total		32	45	19	12	2	110

Source: Field Survey, (2015)

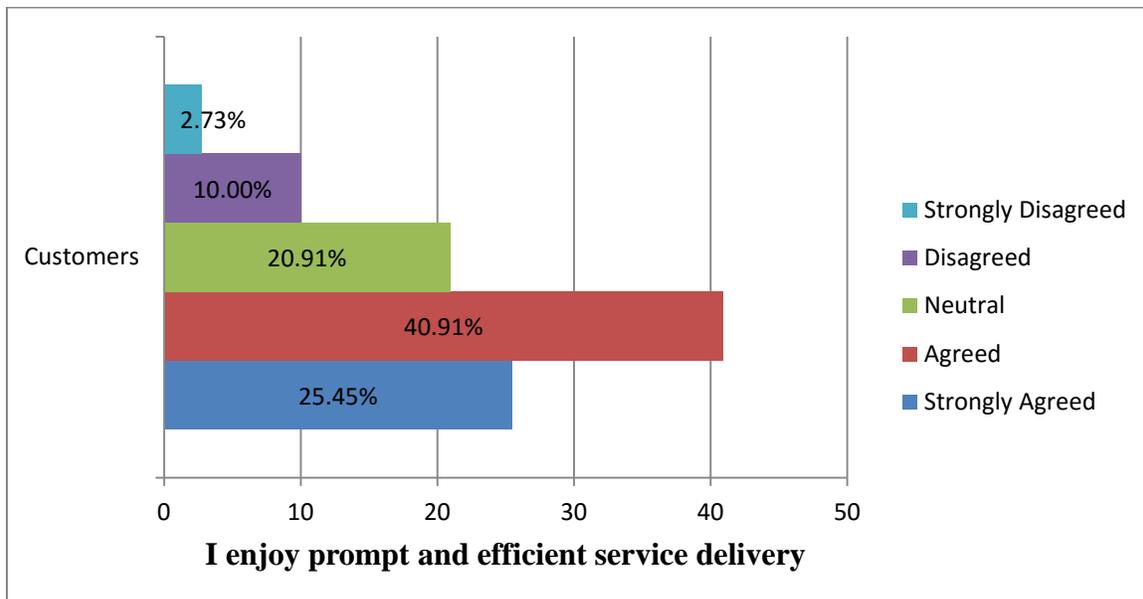
4.7.5 PROMPT AND EFFICIENT SERVICE DELIVERY FROM THE BANK

The figure below shows that 40.91% out of the 110 respondents agreed that they enjoy prompt and efficient service delivery with the rural bank, 25.45% strongly agreed, 20.91% neither agreed nor disagreed, 10.0% disagreed and 2.73% strongly disagreed.

Most of the customers attested to the fact that rural bank's services have been superb since the introduction of IT because there has not been much delay in transacting business with the rural banks. Respondents who were salaried workers said they had to queue at the commercial banks before they would receive their monthly salaries because of the huge customer base, but when they transferred their accounts to the rural bank, they have been enjoying prompt and efficient service delivery due to the fact that customer base is not huge as compared to the commercial banks.

Customers who were farmers, petty traders, market women and etc. described their activities with the rural bank as better because they are well attended to with regard to obtaining loan facilities and other necessary transactions which they carry out.

Figure 4.7.5 I enjoy prompt and efficient Service Delivery from the Bank



4.8 HYPOTHESIS TESTING

In testing the **Hypothesis**, The One-Sample t-test compares the mean score of a sample to a known value. Usually, the known value is a population mean.

NULL HYPOTHESIS: The use of information technology does not have a significant impact on the financial performance of Asutifi Rural Bank.

ALTERNATIVE HYPOTHESIS: The use of information technology has a significant impact on the financial performance of Asutifi Rural Bank.

Table 4.8.1 One Sample T-Statistics Comparing Standard Deviation and Standard Mean error

	N	Mean	Std. Deviation	Std. Error Mean
Positive impact on operational activities	35	1.43	.558	.094
Bank staff work as a team	35	1.63	.808	.136
It has attracted more customers	35	1.66	.591	.100
Internet service is adequately reliable	35	2.37	.910	.154
It has strengthened internal control	35	1.40	.497	.084
I have the necessary it skills	35	1.11	.323	.055
Easy recovery of loan	35	2.06	.802	.136

Source: Field Survey, (2015)

The Standard Deviation tells us about the shape of our distribution; how close the individual data values are from the mean value and the Standard Error tells us how close our sample mean is to the true mean of the overall population. A small SE is an indication that the sample mean is a more accurate reflection of the actual population mean.

The above table shows the distribution of responses from the sample used for this study. The Standard Error of 0.94, 0.136, 0.100, 0.154, 0.084, 0.055 and 0.136 all being relatively small, gives us an indication that the mean is relatively close to the true mean of the overall population.

Table 4.8.2 One Sample T-Statistics Interpretation and Decision Making

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Positive impact on operational activities	15.157	34	.000	1.429	1.24	1.62
Bank staff work as a team	11.931	34	.000	1.629	1.35	1.91
It have attracted more customers	16.581	34	.000	1.657	1.45	1.86
Internet service is adequately reliable	15.413	34	.000	2.371	2.06	2.68
It has strengthened internal control	16.663	34	.000	1.400	1.23	1.57
I have the necessary it skills	20.422	34	.000	1.114	1.00	1.23
Easy recovery of loan	15.169	34	.000	2.057	1.78	2.33

Interpretation

The above questions have calculated t-values of 15.157, 11.931, 16.581, 15.413, 16.663, 20.422 and 15.169 at a significance level of 5% and degree of freedom of 34.

Decision

From the above analysis, the calculated t-values are all above the tabulated t-value which would be obtained by reading the t-table at a 95% confidence interval and a degree of freedom (n-1) which is 34, therefore the null hypothesis (H_0) should be rejected in favour of the alternative hypothesis (H_1) accepted. Also, the two tail significance level which is 0.00 is less than 0.05 which is the level of significance; therefore the null hypothesis should be rejected. Hence, the use of information technology has a significant impact on the financial performance of Asutifi Rural Bank in the Brong Ahafo Region of Ghana.

4.9 INFORMATION TECHNOLOGY IMPACT ON PROFITABILITY (ROE, ROA)

Table 4.9.1 Yearly Ratios of Return on Equity and Return on Asset

YEAR	RETURN ON EQUITY (ROE) %	RETURN ON ASSET (ROA) %
2008	4.34	24.70
2009	2.63	17.81
2010	15.03	13.72
2011	27.98	25.31
2012	4.18	28.33
2013	3.33	22.28
2014	2.78	19.30

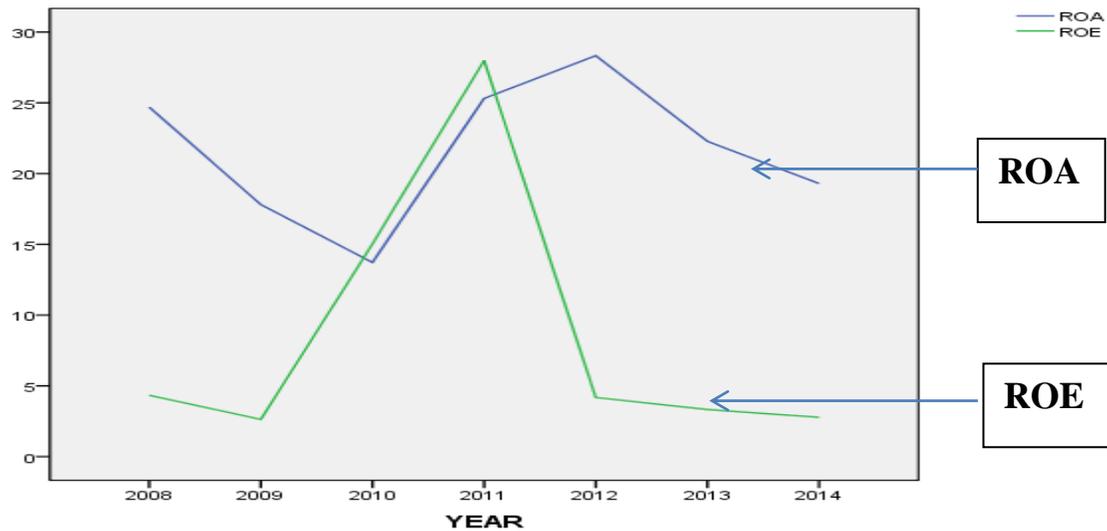
Source: Secondary Data, (2015)

The profitability ratios in Table 4.9.1 above indicate the ROE and ROA from 2008 to 2014. Before the year 2011 Asutifi Rural Bank used the manual book-keeping record system and in the latter months of 2011 Information Technology was introduced into the bank.

The Return on Equity ratios shows a rising figure from 2008 to 2011 and declining from 2011 to 2014. The Return on Asset ratios show also declined from 2012 to 2014.

The trend analysis in figure 4.9.1 below will further explain IT's impact on the profit of Asutifi Rural Bank before and after it was introduced.

Figure 4.9.1 Trend analysis of Profitability of Asutifi Rural Bank



Source: Secondary data from Prudential Returns of Asutifi Rural Bank

The introduction of ICT into rural and community banks by ARB Apex Bank through the Ghana Rural Banks Computerization and Interconnectivity Project (GRBCIP) started earlier in 2011. When factors like inflation, staff output, cost of banking services, administrative cost and all other factors are held constant left alone Information Technology, then it can be realized from the graph that though the ratio for 2008 seems appreciable it rose higher from 2011 and 2012 and upon some reasons declined slowly from 2013 to 2014. The analysis is clear that when rural banks were incorporated into the use of Information Technology, it had a positive impact on their ROE until it started to decline which can clearly be attributed to the economic repercussions recently facing the overall economy of Ghana and has affected Asutifi rural bank as well and the fact that information technology devices are very expensive, also it was realized that communication cost charged by ARB Apex Bank which is being debited on the account of Asutifi rural bank is also very high.

The ROA line seems to behave the same as the ROE as it rose sharply from 2009 to 2011 and declined from 2011 to 2014. Hence we can conclude that, though there are certain factors which affect the profitability of rural banks, Information technology also affect the profitability of rural banks. The relationship can only be positive if Asutifi rural bank obtain enough funding to cater for the high communication cost and other technological devices.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This study examined the “impact of information technology on the financial performance of Asutifi Rural Bank” in the Brong Ahafo Region of Ghana. In the previous chapters of this study, different assumptions, statements and generalizations have been made to examine this impact.

5.1 SUMMARY OF FINDINGS

The majority of the bank customers enjoy efficient and prompt service delivery by Asutifi rural bank, because they can perform many transactions without having to visit the bank physically, and this is done through the introduction of information technology (IT) into rural banking operations (See Figure 4.7.5) and figure 4.7.3 also indicates clearly that customers of Asutifi rural bank enjoy better and wider range of services since they are not delayed at the bank (See figure 4.7.3.2) and their transaction time and cost have also reduced as well (See figure 4.7.3.1)

Information Technology has impacted positively on the operational activities of rural banks (See Figure 4.2.1), these operational activities includes the preparation of weekly, monthly and annual prudential returns, deposit mobilization, data capture and other technical operational activities performed by rural banks staff.

Information technology has helped rural bank staff work as a team (See Table 4.3.1). The tediousness in processing a data by many people has been reduced by providing a common platform (software) which helps all staff to collaborate during their working hours.

Most of the rural bank staff had the requisite IT knowledge in executing and performing their daily routines. The study revealed that ARB Apex Bank have regularly been organizing training programmes for the rural banks to keep them abreast with the needed IT skills (See Table 4.4.1) Though the internet service may not be good at some branch of some rural banks, majority of the respondents gave a positive response as to how adequate the internet access of the bank was (See Figure 4.5.1).

Information Technology has strengthened the internal control system of rural banks. Information security policies have enhanced rural banks activities which have prevented fraudulent practices in the rural banks. The systems and software used by rural banks makes sure that transactions should be approved and authorized through the appropriate channel (See Figure 4.6.1)

Since the introduction of information technology by rural banks in Ghana, rural banks have reduced their transaction cost and the time spent by customers at the banking hall during transaction has also reduced (See table 4.2.3)

Finally, from the hypothesis tested, it can be concluded that;

- i. Information technology has had positive impact on the operational activities of Asutifi Rural Bank.
- ii. Bank staff now work as a team because of information technology
- iii. More customers have been attracted to the bank since IT was introduced
- iv. Internal controls of the bank have been strengthened and fraudulent practices are prevented as well.
- v. Loan recovery has also been made easier since IT was introduced.

5.2 CONCLUSION

The study concludes that we can say information technology has a positive impact on the image, goodwill and growth of Asutifi rural bank. Customer satisfaction is of a paramount importance to the achievement of organizational goals. It has really increased the rate of patronage as a result of the supply of redefined products and services to meet the needs and demand of the public. Information technology has also helped to reduce the rate of fraudulent practices in the bank. Present day rural banking activities are computerized and not manual, making it difficult to make any alterations; such actions can easily be traced and corrective measure taken. Information technology has also provided better and well-grounded infrastructure to speed up transaction, increase consistency and enhance rural banks operations.

Asutifi rural bank have been able to derive benefits from information technology through offering the customer with efficient and prompt service delivery and the fact that they have been able to improve the competence and effectiveness of their operational activities, thus more transactions can be processed faster and in a convenient manner, which have undoubtedly impact significantly and positively on the overall financial performance of the bank. The customer on the other hand, stand to enjoy customer satisfaction, reduced frequency of going to the rural bank physically and reduced cash handling, which will give rise to higher volume of turnover.

5.4 RECOMMENDATIONS

The impact of IT on the financial performance of Asutifi rural bank has been generally deliberated in the previous chapters. However, it is only suitable if certain recommendations that may be of benefit to the development of this study are made.

1. Unconditional support and funding should be provided by stakeholders of Asutifi rural bank to fund Information Technology Projects. Asutifi rural bank find it difficult in the implementation of newly introduced IT projects due to monetary restraints.
2. Appropriate enlightenment, educative programs and proper channels should be made available to in the various communities of the bank's catchment area to improve communication concerning the bank and its customers. This will help keep customers of the bank in the various communities abreast and well updated with current information.
3. Information Technology Steering Committee should be established to take charge of affairs regarding the IT implementation of the bank. The IT plans of the bank should be reviewed sporadically to suit the organization's objectives.
4. Customers should be prioritized by Asutifi rural bank before information technology. It is vital to set the needs and wants of customers first before you introduce any technological program or device. The method you choose should be of great importance to the corporate objective of the organization to prevent unproductivity or losses.
5. Generators in the bank should be run on stand-by to elude interference in the flow of power which can slow down the rate of operations. This is for the fact that most IT devices and innovations need electrical energy before they can operate.

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**SECTION B: IMPACT OF INFORMATION TECHNOLOGY ON RURAL BANKS
PERFORMANCE**

INSTRUCTION: Please tick [√] as appropriate. SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree

S/N	ITEMS	SA	A	N	D	SD
1.	I enjoy prompt and efficient service delivery by Rural banks.					
2.	We should encourage our colleagues to patronize Rural banks.					
3.	Transaction Cost at the Rural Bank has reduced since the introduction of IT					
4.	I spend less minutes/hours in carrying out transactions since the introduction of IT					
5.	This bank has since provided a better and wider range of banking services since the introduction of I.T.					
6.	I have been frequently delayed in the bank because of computer breakdown or IT malfunction.					

INSTRUCTION: Please tick [√] as appropriate

7. I effectively receive the details of my transaction through SMS on my Phone. Yes () No ()

8. Any other comments (**Please provide brief answer if any**)

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**SECTION B: IMPACT OF INFORMATION TECHNOLOGY ON RURAL BANKS
PERFORMANCE**

**INSTRUCTION: Please tick [√] as appropriate. SA=strongly agree, A=agree, N=neutral,
D=disagree, SD=strongly disagree**

S/N	ITEMS	SA	A	N	D	SD
1.	Information technology and computer have really impacted positively on the operational activities of rural banks.					
2.	The introduction of I.T has helped bank staff to work better in a team than before the introduction of I.T.					
3.	Information technology has strengthened the internal control system of the bank					
4.	Internet service is adequately reliable in this bank.					
5.	The introduction of I.T in this bank has since attracted more customers to the bank.					
6.	Easy recovery of loan since customers are easily identified using IT.					

INSTRUCTION: Please tick [√] as appropriate

7. Do you have the necessary skill to use IT facilities. Yes () No ()

8. Any other comments (**Please provide brief answer if any**)

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