

## Computerised Accounting System an Effective Means of Keeping Accounting Records in Ghanaian Banks: a Case Study of the Ga Rural Bank

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### ABSTRACT

The research topic of this study is “The Effect of Computerized Accounting System on Ghanaian banks – a case study of the Ga rural bank. The purpose is to know whether the application of Computerized Accounting System supersedes that of manual Accounting System and that if computerized Accounting System enhances higher turnover and profitability, and also whether a computerized accounting system is an effective means of keeping accounting records. The study's population is 70 persons who are the members of staffs of the three (3) selected branches of the Ga rural bank. Using the Taro Yamane's formula the sample size calculated gave (60). The formulated hypotheses were tested using the analysis of variance (ANOVA) statistical technique at 5% level of significance. The researcher also made use of primary methods of data collection which included questionnaire and personal interview. Also the secondary method of data collection used was gotten from official documents of the banks, websites, various research works on computerized accounting system, accounting journals and textbooks.

The research concluded that the advantages of a Computerized Accounting System far outweigh its associated challenges as it has impacted the financial reporting of the banks positively. Hence, there is the need for businesses, particularly rural banks to adopt a Computerized Accounting System.

Based on these, the researcher recommended that the Ga rural bank should channel most of their resources in the training and development of bankers and Accountants personnel in computerized accounting system related technology such as I.C.T to boost performance in their banking operations and their personnel. Also due to the widespread of computer trends and its dynamics nature, it is recommended that rural banks who are still battling with manual system should adopt specifically the Computerized Accounting System.

**Keywords:** computerized, accounting, effective, profitability, turnover, banking

### INTRODUCTION

#### Background of the Study

Today's modern technology brought into use the computer, this technology is the application of science to gathering, recording, processing and communicating of business information by means of electronic media. Most common tool for application is the computer and it involves all the transaction processing system management information system various business support system etc. The computer is a central force in the advancement of various organizations.

Omolehinwe (2009) defines accounting as the collection and recording of financial data about an organization whether in the private or in the public sector and analyzing the data so collected to suit the decision that needs to be taken and reporting the relevant information in a summary form to the user in a form that is meaningful to him or her.

Chionye (2003) defines accounting system as the art of identifying, recording, classifying measuring and interpreting in a significant manner the financial transaction of an organization for decision making. Summarizing from time to time the information contained in the record, for its significant presentation and interpretation to interested parties as an aid to decision making.

Accounting system is also defined as a consistent way of organizing, recording, summarizing and reporting financial transactions.

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The primary objective of an accounting function in an organisation is to process financial information about the activities of the organisation and prepare financial statements at the end of the accounting period. The modern method of accounting is based on the system created by an Italian monk *FraLucaPacioli*. He developed this system over 500years ago. This great and scientific system was so well designed that even modern accounting principles are based on it (deSantis, 2010).

Section 123 of Ghana’s Companies Code (1963), Act179 obliges all companies to keep proper books of accounts with respect to their financial positions and changes therein. These books shall be kept in respect of all sums of money received and expended by, or on behalf of the company and the matters in respect of which the receipt and expenditure takes place; all sales and purchases by the company of property, goods and services; the assets and liabilities of the company and the interests of the members therein.

According to ISAB Framework for preparation and presentation of financial statement, the objective of financial statements is to provide information about the financial position, financial performance and changes in financial position of a company that is useful to a wide range of users in making economic decisions. These financial statements are usually directed towards the common information needs of these users and as a result, it serves as their major source of financial information. Users of these financial statements include shareholders, prospective investors, employees, customers and government. The act of communicating financial information to these users is known as financial reporting. Financial Reporting can be defined as the process of presenting financial data about a company’s financial position, the company’s operating performance, and its flow of funds (Rose & Hudgins, 2008).

Financial Reporting is thus, the presentation of a complete set of financial statements which consist of a

1. Statement of financial position at the end of the period
2. Statement of comprehensive income for the period
3. Statement of changes in equity for the period
4. Statement of cash flows for the period. (Elliot and Elliot, 2006)
5. Notes and explanatory notes to the accounting policies used (Greuning, 2006)

In addition to these statements, the Companies Code also outlines other additional reports such as:

- i. A report by the directors
- ii. A report by auditors (s. 133)

In the past, in order to achieve the above requirements, many businesses maintained their records manually in books (Journal, Cash Book, Special Purpose Books, and Ledgers, among others)–hence the term “bookkeeping” came about. This method of keeping manual records was cumbersome, slow, and prone to human errors of translation. Those days, due to the small volume of accounting data, accountants found it quite manageable using the manual system.

At the turn of the millennium, internationalization of economic trade and globalization of businesses have been on the ascendancy. Businesses are going international for various reasons which include: the presence of cheap resources overseas, better tax regulations, trade liberalization, and other favourable legal requirements. Other businesses are expanding internally. All these activities have bearing on the accounting procedures and processes of an organisation. With a substantial increase in the volume of accounting transactions and increase in exposure of information to errors due to complexity of these accounting systems, there was a need for a system which could store and process accounting data with increased speed, storage, and processing capacity. This led to the development and introduction of accounting software packages.

Accounting Software is a class of computer programs that perform accounting operations. Accounting Software is an application software that records and processes accounting transactions within functional modules such as accounts payable, accounts receivable, payroll, and trial balance. Thus, these software packages allow the whole accounting system to be run on a computer hence the name Computerised Accounting System. (Daniel Bricklin, 1985). Every business has numerous processes;

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some simple, others complex and cumbersome. But as the business grows, acquires new customers, enters new markets and keeps pace with constant changes in information technology, companies need to maintain highly accurate and up-to-date accounting, inventory and statutory records. This is where a Computerised Accounting System helps simplify, integrate, and streamline all the business processes, cost-effectively and easily and helps presents the true picture of all the business undertakings to users of financial reports. With the decrease in the price of computers and accounting programs, this method of keeping books is becoming popular (Raymond and Bergeron, 1992).

In today's computerized, interconnected, global business environment, the accounting profession must deal with a host of complex issues that never existed in the past. For instance, how to capture and record new business transactions and events, develop value-added business and information processes, create new value-chain and supply-chain opportunities, disseminate useful knowledge to a wide array of information consumers, and provide assurance services across the entire spectrum of economic activities to reflect some of the more compelling topics of interest.

Banking in Ghana has witness impressive development in recent time particularly within the last decade in time with growth in economic activities and complexities, banking service have expanded significantly in size and variety due to increased by computerization of banks.

### **Statement of Problem**

The advancements in information technology have eventually led to the introduction of Computerised Accounting Systems in corporate reporting to help produce relevant and faithful representative financial reports for both management and external users for decision making (Greuning, 2006). The many advantages from the use of these systems have led many to conclude that Computerised Accounting Systems in Corporate Reporting is the ‘engine of growth’ in business organisations (Frenzel, 2006).

In spite of the benefit of computer to the banking industry and businesses in general, some problems are still left unsolved and new ones have been credited by the use of computer itself being a problem such as the use of computer to keep accounting records.

Another problem is the displacement of labour hands in the accounting department and its union implication and the problem of low turnover (volume of operation) and profitability in banks.

### **Objectives of the Study**

The major purpose of this study is to examine how the adoption of information technology affects the performance of commercial banks in Ghana, focusing on Access bank Ghana Ltd.

The specific objectives therefore are:

- i. To determine the relationship between the application of the manual accounting system and the computerized accounting system in the banking system.
- ii. To determine the effects of computerized accounting system on the profitability of the Ga rural bank.
- iii. To examine the impact of using computer to keep accounting records.

### **Research Question**

In order to address the research problem, the following questions would be administered:

- i. Are there any relationship between the manual accounting system and the computerized accounting system in the banking industry?
- ii. Also, to what extent does the application of computerized accounting system impacted on the profitability of the Ga rural bank?
- iii. Finally, what are the effects of using computers to keep accounting records?

### **Scope of Study**

The focus of this study shall cover the role computerized accounting system play on the performance of commercial banks in Ghana, focusing on three branches of the Ga rural bank. The study lasted for a period of three months.

### **Significance of Study**

In the light of the stated objectives which this study is set to achieve, the following represent the significance of the study;

1. It will highlight on the relationship between the application of manual accounting system and the computerized accounting system in the banking system.
2. It will prove the success and growth associated with the adoption of computerized accounting system in banking.
3. It would also be a resource material for students, academic institutions, and individuals that want to know more about the impact and relevance of information technology in Ghanaian banking sector.

### **Limitation of the Study**

The main constraint of the study is the limited time; the specified time for the study is not adequate for a thorough research. Also, the problem of finance for printing of materials and cost of internet access for data.

### **Organisation of the Study**

This study is organized into five distinct chapters. Chapter one (1) introduces the study by looking at the background through to the significance of the study and its limitations. Chapter two (2) deals with a critical analysis of prior related literature, however, chapter three (3) looks at the methodology of the research under study. Chapter four (4) deals with the presentation of the findings and the analysis of the data collected. Finally, chapter five (5) deals with the summary, conclusion & recommendations.

## **REVIEW OF RELATED LITERATURE**

### **Introduction**

In an evolving Ghanaian banking industry, strategies are being adopted by the major players in order to achieve their long-term organizational goals- profitability and survival. In the light of this belief, much emphasis is being laid on the computerization of their banking operations. Within the last decade, the Ghanaian banking industry has been at the forefront of computerization. This is with the aim of: improving their information system, delivery of efficient and high quality service to their customers.

In the advent of computerization, old generation (local) banks in the industry are force to wake up from their slumbers and face reality. The new generation banks come into the industry with innovation, research and development, in order to push these less competent old ones out of business. This revolution can only be aided by computerization. It's very pertinent to state that computerization is a very powerful weapon which can be employed to annihilate competitors. The Ghanaian banking industry ensures that their data base is updated as at when due.

According to Rob Kling (1996), “when a specialist discusses computerization and work, they often appeal to a strong implicit image about the transformation of work in the last one hundred years and the role that technology has played in some of these changes.” In view of this, it's quite imperative to analyze this information with the Nigerian banking industry, and to take actions aimed at guiding against the problems associated with computerization.

The use of Accounting Information Systems (AIS) is a widely researched topic. While there is much research on the impact of Accounting Information Systems (AIS) in general; there is little research specifically on Computerised Accounting System (CAS) and its impact on financial reporting. Computerized Accounting Systems (CAS), however, is widely used in many corporate bodies including SMEs. For example, in Australia, the Yellow Pages (1997) reported that 76% of the small businesses surveyed had at least one computer and 75% of these used accounting software. Burgess(1997) in his view of IT adoption by Australian small businesses concluded that the main software application package used was accounting (Burgess 1997 and Wenzler 1996).To investigate the impact of Computerized Accounting Systems(CAS) on financial reporting, it would be reasonable to first review the more comprehensive literature on CAS and financial reporting. This literature review, therefore, begins with a discussion of the brief history of accounting, manual accounting systems and then review studies specifically focused on Computerized Accounting Systems and financial reporting. It will also take into account the history and financial reporting requirement of rural banks.

## **Accounting**

Accounting is not only the oldest but also the most stable of the management disciplines. In spite of its stability and continuity, accounting has seen major changes during the past century. It would be surprising if a century from now, accounting is the same as today. Although we cannot look so far ahead, we can analyze the current conditions for clues about what to expect in the next decade or two (Sunder1999). Accounting provides financial information about a business or a not-for-profit organisation. Owners, managers, investors and other interested parties need financial information for decision making.

Financial accounting is the art of systematically identifying, measuring, recording, classifying and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of financial nature, and communicating, analyzing and interpreting the results there of (Woode & Sangster, 2008).

## **Role/Functions of Accounting**

According to Sunder (1997) a business organization can be seen as a set of contracts among various participants: employees, shareholders, customers, vendors, managers, creditors, auditors, government, among others. Each party in the contract agrees to contribute resources. For example, employees and managers contribute skills, shareholders and creditors contribute capital, vendors provide machinery and materials, and customers provide cash. Each participant demands an inducement at least as large as the opportunity value of his contribution to the organization. For an organization to succeed, its production technology and set of contracts must satisfy each one of its participants. If he can get more elsewhere, he will quit the organization. If enough people quit, the organization collapses. They therefore argued that, accounting is necessary to assemble, implement, enforce, modify, and maintain the contract set of organization. Accounting therefore plays five main functions in an organization.

The first requirement of control is to devise a system of measuring the contributions made by each agent. It should also determine the amount of incentive due them, and monitor the distribution of inducements so that each agent receives his due, no more and no less.

In addition, accounting helps compare the contributions made and the incentives received by each participant and distributing this information. Furthermore, accounting distributes information to various factor markets to keep them liquid and find replacements for participants who leave. Finally, accounting makes some information available in the form of common knowledge or public disclosure to help reduce conflict among participants at the time they re-negotiate their contracts (Sunder1997).

In its second function, the accounting system measures, records, and controls the outflow of resources from the organization. Payroll and benefit accounts for employees, shipping to customers, accounts payable to suppliers, and tax accounts measure the out flow of resources to the government (Sunder1997).

In its third function, the accounting system compares the data on resource inflows and outflows to determine who has fulfilled his contract and to what degree. The accounting system prepares comparative reports on resource inflows and outflows related to various individuals in the organization. These statements are used to evaluate and adjust the contracts of these individuals (Sunder1997).

In a fourth function, accounting helps assemble and maintain the contract set by finding the appropriate participants in the factor markets for labour, managers, customers, suppliers, and investors among others. All these people must be convinced that participating in such an enterprise is in their own best interests. Proforma financial statements, business plans, and budgets prepared by the organization before the enterprise starts functioning help agents assess the costs and benefits of participating in the proposed enterprise in various roles. When contractual slots fall vacant, they must be filled from the factor markets (Sunder1997).

Finally, when contract terms expire, they are often re-negotiated under changed circumstances. Agents are tempted to issue threats, to quit their position in the organization if their terms were not revised in their favour. Such bluff and threats sometimes lead to deadlock in negotiations, strikes, and therefore dead weight losses to society. Accounting performs its fifth function by sharing at least a minimal set of information among the negotiating parties to make it common knowledge, and help

reduce the chances of breakdown. This is the primary purpose of public disclosure in larger organizations (Sunder 1997).

Conclusively, an organization can be seen as a set of contracts or alliances among many people who join them with the expectation of gain. Accounting, therefore, is the mechanism that defines implements, enforces, modifies, and maintains this system of contract.

### **What is Accounting System?**

Hussey (2005) defines accounting system as the system designed to record the accounting transaction and events of a business and account for them in a way that complies with its policies and procedures.

Hartzell (2006) says that accounting system is a consistent way of organizing, recording, summarizing and reporting financial transactions. The minimum requirements for an accounting system include the following; It must provide financial information for management to make policy decisions, prepare budgets and grant proposals and provide other. Useful financial reports, also, similar transitions must receive consistent accounting treatment.

Ama (2004) defines the accounting system as “a formal system for identifying, measuring, accumulating, analyzing, preparing, interpreting and communicating accounting information about a particular entity to a particular group”. By formal system, we mean that the accounting system carries out its functions with laid down rules, regulations, methods, procedures and techniques. It is also a routine and an automatic system. An accounting system as opined by Ama (2001) is a formal mechanism for gathering, organizing and communicating information about an organization’s activities.

An accounting system can also be defined as mechanism for gathering and communicating data for the ends of assisting and co-ordinating collective decision in view of the overall objective of a firm or an organization. Accounting system by definition is a financial information system which includes accounting terms, records instruction manuals flow charts programs, and reports to fit the particular needs of the business. Accounting system is a set of records, procedures and equipment that routinely deals with the events affecting the financial performance and position of the organization.

Finally, according to business online dictionary, a system is an organized set of manual and computerized accounting methods procedures and control established together, record, classify, analyze, summarized interpret and present accurate and timely financial data for management decisions.

### **Methods for Computerization in Accounting**

The two main method of computerization in accounting which dictate how the company’s transactions are recorded in the company’s financial books are cash basic accounting and accrual basis accounting.

#### **Cash – Basis Accounting**

Ama (2003), states that cash basis of accounting revenue is recognized and recorded only when the cash is received. Expenses are recognized in the period when payment is made. Recording of revenue and expenses during an accounting period is based on an inflow and outflow of cash. A matching of cash receipts and cash disbursement is done to determine operating results during the period. This method is simple in application.

Rao (2006) defines cash basis as a basis of accounting by which a transaction is recognized only if cash is received or paid. Cash basis of accounting is suitable for such business organizations which operate for a short-term duration.

#### **Accrual – Basis Accounting**

The accrual basis of accounting is based on the principle that all revenue earned during a period and the related incurred expenses of earnings that revenue assignable to the period must be determined. These then are matched against each other to determine net income or net loss.

Revenue is recognized at a time of sales of services or merchandise and expenses are usually recognized at the time the service are received and used in the production of revenue.

Rao (2006) defines accrual basis as a system of classifying and summarizing transactions into assets, liabilities, capital, cost and resources and recording thereof. A transaction is recognized when either a

liability or asset is created or impaired. Whether payment is made or received is immaterial in accrued basis accounting.

The following are the essential features of accrual basis:

- i. Revenue is recognized as it is earned.
- ii. Costs are matched either against revenues so recognized or against the relevant time period to determine periodic income.

Costs which are not charged to income are carried forward and are kept under continuous review. Any cost that appears to have lost its utility or its power to generate future revenue is written off as a loss.

### **Types of Accounting System**

Generally, there are two major types of Accounting System;

- i. Manual Accounting system and
- ii. Computerized Accounting System.

#### **Manual Accounting System**

According to Ama (2004), this is a system, which uses special journals to stream line the journalizing and posting procedures. To handle a large volume of transaction rapidly and effectively, it is helpful to group the transactions into classes and to use a specialized journal for each. Recording and posting are made for these journals using the double entry record keeping.

Also according to free online Merriam, manual system is a system in which the accountant or the book-keeper is required to post business transactions to the general journal, general ledger and worksheet by hand. This process can be computed by either using actual paper journal and ledger sheets or by creating these sheets in a computer program such as excel it is considered manual because each transactions is entered into the systems individually.

#### **Computerised Accounting System**

Ama (2004) defines this system as a system that uses specialized machines called calculators and computer in gathering information. It is technically known as Electronic Data Processing (EDP) Accounting System.

A computer – based accounting system processes data in basically the same manner as does a manual system. Transactions are initially recorded manually on source documents, the data from these source documents are then key – punched into punched cards, which can be read by the computer. The computer process the information and performs such routine tasks as printing journals, posting to ledger accounts, determining account balances and printing financial statements and other reports. A computerized accounting system according free online Merriam is system which allows the user to enter the transaction into the program once and all accounts are updates as necessary.

### **Principles of Computerized Accounting Systems**

In the course of recording, classifying and summarizing financial data, there may arise cases where the exercise of discretion becomes very essential. Some practical principles have been developed to help accountants in the exercise of such judgments, the four basic principles of accounting are important because they provide the conceptual guidelines for application of the basic accounting system. Also they give the measurement, recording and reporting phases of the accounting information processing cycle. They include:

- i. Historical Cost Principles
- ii. Revenue Recognition Principles
- iii. Matching principles
- iv. Full-disclosure principles

#### **Historical Cost principles**

According to GAAP, this principle requires companies to account and report based on acquisition cost rather than fair market value for most assets and liabilities. This principles provides information that is reliable (removing opportunity biased market values) but not very relevant.

According to Bhorkar (2005), states that historical cost principle in account usually past happenings is recorded. This is based on assumption of realizations. Accounting involves recording of business

transactions which have taken place. The business transactions are recorded as and when they take place i.e date – wise. This lead to the preparation of the historical records of all transactions.

Ama (2004) states that the principle defines the conceptual basis for measuring the assets, liabilities and owner’s equity (including revenues and expenses) of a business, the cost principle states that the cash equivalent cost should be used for recognizing (i.e, recording) all financial statement elements.

Cost is measured as the cash paid plus the current value of all non-cash consideration.

### **Revenue Recognition Principles**

Ama (2004) states that the revenue principle relates to the income statement model (Revenue minus – Expenses = Income). This principle specifies when revenue should be recognized (ie recorded) and how it should be measured. Revenue should be recognized when there is an inflow of net assets from the sale of goods or services. Revenue is measured as the cash received plus the current Naira value of all non-cash considerations received.

This principle requires companies to record when revenue is:

- i. realized or realizable and
- ii. earned not when cash is received

This way of accounting is called accrual basis accounting.

### **Matching Principles**

In this principle, expenses have to be matched with revenues as long as it is reasonable to do so. Expenses are recognized not when the work is performed or when a product actually makes its contribution to revenue.

According to Bhorkar (2005), states that matching principles explains that we have to match the income of a certain period with expenses of that period only. The term matching refers to close relationship that exists between certain expired cost and revenues realized as result of incurring those costs.

Ama (2004) states that this principle relates directly to the income statement (Revenue – Expenses = income). Resources that are used to earn revenues are called expenses. The matching principle holds that when the accounting period revenues are properly recognized in conformity with the revenue principle, all of the expenses incurred in earning those revenues must be matched with the revenue of that period.

### **Full-Disclosure Principles**

Bhorkar (2005) states that entries are made in such a way so that they provide honestly all information relating to the activities of the business, the records should not conceal anything from outsiders this implies that accounts must be honestly prepared and all material information must be disclosed there in. Information disclosed should also be enough to make a judgment while keeping costs reasonable.

Ama (2004) states that the periodic financial statements of a business must clearly report (ie. disclose) every relevant information about the economic affairs of a business. This principle requires (a) Complete Financial Statement. (b) Notes on the financial statements to elaborate on the “numbers”.

## **What is Computer and Computer Trends?**

### **Computer**

Tanenbaum (2010) defines computer as an electronic device for storing and processing data, typically in binary form, according to instruments given to it in a variable program. According to O’Leary (2001) computers are electronic devices that can follow instructions to accept input, process that input, and produce information.

Vermant and Shelly (2011) define computer as electronic device, operating under the control of instructions stored in its own memory, that can accept data, process the data according to specified rules, produce results and store the results for future use.

Computers process data into information. Data is a collection of unprocessed items, which can include text, numbers, images, audios and videos. Information conveys meaning and is useful to people.



## **Computer Trends**

According to Wikipedia, the free encyclopedia, computer trends are changes or evaluations in the ways that computer are used which becomes widespread and integrated into popular thought with regard to these system. These movements often begin with one or two companies adopting or promoting a new technology which grabs the attention of others and becomes popular. Both hardware and software can be part of computer trends such as the developments and proliferation of mobile devices including smart phones and tablets changes in the internet, the developments of new websites, and the expansion of the cloud. Computing models are likely to be similar software trends throughout the early part of the 21st century. Much like changing fashions in clothing, computer trends indicate the types of technology or concepts that are popular at a given time. This can occur in a number of ways including a company introducing new technology to a market and computers finding that they can use certain products more effectively than others. As changes happen computer trends typically evolve and grow over time, so that popular technology one year may be considered out-dated the next. Identifying the next major trend and finding a way to get in on it ahead of time can be substantially profitable for companies that work with technology. Developments in interest coding and viewing continue to make its growth a major trend in the computer industry.

## **Types and Why We Use Computer Systems**

### **Types of Computers**

Computers have revolutionized all types of industries they proved to be a boon to main kind. A computer is one of the most brilliant inventions of main kind. Thanks for computers technology, we were able to achieve strong and processing of huge amounts of data we could rest on basis by employing computers memory capacities for storage of information.

According to the Wikipedia, the free encyclopedia states the different types of computers and are categorized based on their operational, style of functioning based on the operational principle of computers, they are categorized as analog, digital and hybrid computers. The classification of computer based on their style of functioning following is a classification of the different types of computers based on their sizes and processing powers.

- i. Mainframe
- ii. Micro Computers

Some personal computers are:

Desktop, Servers, Laptop, Super Computers, Notebook, Wearable Computers, Minicomputers, Tablet, PDA.

### **Analog Computers**

These are almost extinct today. These are different form of a digital computer because an analog computer can perform several mathematical operations simultaneously. It uses continuous various for mathematical operations and utilize mathematical or electrical energy.

### **Digital Computers**

They use digital circuits and are designed to operate on two states namely bits 0 and 1. They are analogous to states ON and OFF. Data on these computers are suitable for complex computation and have higher processing speeds. They are programmable and either general or special purpose computers. Such as digital cameras. A digital camera is a device that allows users to take pictures and stores the photographed images digitally, instead of on traditional film.

### **Hybrid Computers**

These computers are a combination of both digital and analog computers. In this type of computer the digital segments perform process control by conversion of analog signals to digital ones.

### **Mainframe Computers**

According to Vermaat and Shelly (2011), a mainframe is a large, expensive powerful computer that can handle hundreds or thousands of connected users simultaneously. Mainframes store tremendous amounts of data, instructions and information. Most major corporations use mainframe for business activities. With mainframes, enterprises are able to bill millions of customers, prepare payroll for

thousands of employees, and manage thousands of items in inventory. One study reported that mainframe process more than 83 percent of transactions around the world.

According to O’Leary (2011), mainframe computers occupy specially wired air-conditioned rooms. Although not nearly as powerful as supercomputers mainframe computers are capable of great processing speeds and data storage. For example, insurance companies use mainframes to process information about millions of policy holders.

### **Micro Computers**

Microcomputers are the least powerful, yet the most widely used and fastest growing type of computer. They do not occupy space as much as mainframes do. When supplemented with a keyboard and mouse, microcomputers can also be called personal computers. A monitor, a keyboard and other similar input and output device, computer memory in the form of RAM and a power supply unit come packaged in a microcomputer. These can be fixed on desk or tables and prove to be the best choice for single – user’s tasks. These are six types of micro computers; desktop, net book, notebook, handheld, tablet PC and media center computers.

### **Desktop Computers**

According to O’Leary (2011) are small enough to fit on top of or alongside a desk yet are too big to carry around. A desktop is intended to be used on a single location. The space parts of a desktop computer are readily available at relatively lower costs. Power consumption is not as critical as that in laptops. Desktops are widely popular for daily use in the work place and household.

### **Laptop / Notebook Computers**

Also portable, light weight and fit into most briefcases. Laptops are similar in operation to desktops, laptops computers are miniaturized and optimized for mobile use. Laptops run on a single battery or an external adapter that charges the computer battery. They are enabled with an in built keyboard touch pad acting as a mouse and a liquid crystal display.

Net Books are smaller lighter and less expensive than notebook computers. They had a smaller features set and lesser capacities in comparison to regular laptops at the time they came into the market.

### **Handheld Computers**

They are the smallest and are designed to fit into the palm of one hand. These systems contain an entire computer system, including the electronic components secondary storage and input and output devices. Personal Digital Assistants (PDAs) and Smart phones are the most widely used handheld computers.

### **Personal Digital Assistance**

According free online Marniam is a handheld computers and popularly known as a palmtop. It has a touch screen and a memory card for storage of data. PDAs can also be used as potable audio players, web browsers and smart phones.

Media Centers blur the line between desktop computers and dedicated entertainment devices. O’Leary (2011).

### **Mini Computers**

O’ Leary (2011) states that minicomputers are also known as midrange computers are refrigerator – sized machines. Medium – sized companies or departments of large companies typically use them for specific purpose. For example, product departments use minicomputers to monitor certain manufacturing processes and assemble – line operations.

### **Servers**

They are computers designed to provide services to client machines in a computer network. They have larger storage capacities and powerful processors. Running on them are programmes that serve client request and locate resources, like memory and time to client machine usually they are very large in size to be fail safe & resistant to crash.

Tanenbaum (2010) states that beefed – up personal computers or workstations are often used as network servers, both for local areas networks (typically within a single company), and for the

internet. These come in single – processor and multiple – processor configurations have gigabytes of memory, hundreds of gigabytes of hard disk space and high – speed networking capability. Some of them can handle thousands of transactions per second. Architecturally, however a single – processor server is not really very different from a single – processor personal computer. It is just faster bigger, has more disk space and possibly a faster network connection.

Supercomputers are the most powerful type of computer. These machines are special high – capacity computers used by very large organizations. IBM’s Blue Gene is one of the fastest computers in the world. The highly calculations intensive task can be effectively performed by means of supercomputers, Quantum physics, mechanics, Weather forecasting, Molecular theory are bests studied by means of supercomputers.

### **Wearable Computer**

A record setting step in the evolution of computers was the creation of wearable computers. They can be worn in the body and are often used in the study of behaviour modeling and human health. Military and health professionals have incorporated wearable computers into their daily routine as a part of such studies.

### **Uses of Computers**

According to Wikipedia the free encyclopedia, computers are now being used extensively in office administration to perform the routine clerical work. Today, most large and medium sized organizations are almost totally dependent on their computers. Routine uses of computers are given below:

- i. Accounting, billing, inventory control system with MIS, CRM.
- ii. Computers are extensively used in accounting and there are multitude of computer software for accounting MIS, CRM, HITECH financial accounting is one such software which has been customized for users in many segments in business and services.
- iii. Payroll and Personnel records: Payroll according was the first commercial area to become widely computerized. The calculation of wages or salaries involves a number of variables which relates to the personal details of each employee such as gross pay or rate for the job, individual deductions tax liabilities of the employees and so on.
- iv. Stock control: The computer helps to exercise the type of stock control needed by the organization. It up to dates the sales and purchases records determines optimum reorder levels for different items and prints out stock list when desired.
- v. Sales Accounts Records: Programming can be done for any sales accounting system. The computer will pin point defaulting debtors, determines the right limit for each debtors and maintain stores ledger.
- vi. Costing and Budgetary Control: Costing and Budgetary control can be affected through the computer, the computer will pin point out the variations from the planned performance.
- vii. Production Control: The computers also help greatly in planning and control. It is possible that scheduling of the work may become necessary due to break downs etc a new critical path may have to be worked out. The computer helps the lay down this new critical path.

### **Accounting Packages**

According to free Marriam online, accounting software programmes have greatly increased the productivity of back offices for the past several decades. The type of accounting software packages used in businesses depends on the size of company operations, members of users and different segments or departments in a company. Several options are available and may be customized for business depending on how much they are willing to spend on the accounting software. Some of the accounting packages are:

#### **1. Quicks Book:**

Small businesses and sole proprietorship may use simple accounting software programs like Quick Books or basic computers programs like Microsoft word or Excel. These programs are in expensive and often basis solutions for billing, paying vendors and recording sales.

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Quick Books is an easy – To – use load – and – click style of software that allows individuals to quickly set up their business by answering of few, ledgers and invoicing modules are provided for business owners to use in their daily operations.

### 2. Peach tree Accounting sage’s software packages)

Mid-size software programs of more functionality for multiple users of business software. Companies can select different models based on business size and the number of users accessing the software. While they are more expensive, the customization options help limit purchasing unnecessary modules. Sage’s software packages can be server – or – web – based allowing users to access company information from multiple locations.

### 3. ERPs (Enterprise Resources Systems)

Large companies with several operational department or multiple locations may use ERPs as their preferred accounting software packages ERPs, are fully. Customizable packages that can take several weeks to fully implement in a company oracle, people soft, sage and SAP AG are the most common ERPs vendors.

## Application of Computer in Accounting System

According to Wikipedia the free encyclopedia, some applications of computer in accounting system are:

1. Word processor: Word processing is a software used in the preparation of typescripts, using computing facilities for the storage and manipulation of text for e.g word processor has ability to merge names and addresses with standard text so as to give impression that the letter is personalized even in case of circular letter.
2. Data Base: It is simple collections of information (data) on a particular subject. Data base file allows you to manipulate the data in desired form. So database allows us to work on facts and figures to store and manipulates data in any desired way for e.g from the same basic information trial balance is prepared, trading and profit and loss accounts may be prepared; list of debtors creditors may be prepared, purchase and sales forecast may be made etc.
3. Spread sheet: This is one of the software programs which have increased the utility of computers for accounting purposes. Spreadsheet programs help you to draw vertical as well as horizontal columns on a large sized paper. Each column’s length and breadth can be adjusted according to suitability.

## Merits and Demerit of Computerized Accounting System and its Differences with Manual Accounting System

### Merits and Demerits of Computerized Accounting System

According to Vertmaat and Shelly (2011), society has reaped many benefits from using computers. Both business and home users can make well – informed decisions because they have instant access to information from anywhere in the world. Students another type of users, have more tools to assist them in the learning process. Benefits from using computers are possible because computers have the advantages of speed, reliability, consistency, storage and communication.

**Speed:** When data, instructions, and information flow along electronic circuits in a computer, they travel at incredibly fast speeds. Many computers process millions or trillions of operations in a single second. Processing involves computing (e.g., adding, subtracting), sorting (e.g, alphabetizing) or gaining, displaying images, recording audio, playing music, and showing a movie or video.

**Reliability:** The electronic components in modern computers are dependable and reliable they rarely break of fail.

**Consistency:** Given the same input and processes, a computer will produce the same results – consistently. A computing phrase – known as garbage in, garbage out – points out that the accuracy of a computer’s output depends on the accuracy of the input. For example, if you do not use the flash on a digital camera when indoors, the resulting pictures that are displayed on the computer screen may be unable because they are to dark.

**Storage:** A computer can transfer data quickly from storage to memory, process it, and then store it again for future use. Many computers store enormous amounts of data and make this data available for processing anytime it is needed.

**Communications:** most computers today can communicate with other computers, often wirelessly. Computers with this capability can share any of the few information processing cycle operations – input, process, output, and storage – with another computer or a user.

### **Demerits of Computerized Accounting System**

Vermaat and Shelly (2011) states that some disadvantages of computers relates to health risks, the violation of privacy, public safety, the impact on the labor force, and the impact on the environment.

**Health Risks:** Prolonged or improper computer use can lead to injuries or disorders of the hands, wrists, elbows, eyes, neck and back. Computers users can protect themselves from these health risks through proper workplace design, good posture while at the computer, and appropriately spaced work breaks. Two behavioral health risks are computers addiction occurs when someone becomes obsessed with using computers. Individuals suffering from technology overload feel distressed when deprived of computers and mobile devices.

**Violation of Privacy:** Nearly every life event is stored in a computer somewhere --- in medical records credit reports, tax records, etc. In many instances, where personal and confidential records were not protected properly individuals have found their privacy violated and identities stolen.

**Public Safety:** Adults, teens and children around the world are using computers to share publicly their photos, videos, journals, music and other personal information. Some of these unsuspecting, innocent computer users have fallen victim to crimes committed by dangerous storage protect yourself and your dependents from these criminals by being cautious in e-mail messages and on web – sites for example, do not share information that would allow others to identify or locate you and do not disclose identification numbers, passwords or other personal security details.

**Impact in Labor Force:** Although computers have improved productivity in many ways and created an entire industry with hundreds of thousands of new job, the skills of millions of employees have been replaced by computers. Thus, it is crucial that workers keep their education up-to-date. A separate impact on the labor force is that some companies are outsourcing jobs to foreign countries instead of keeping their homeland labor force employed.

**Impact on Environment:** Computer manufacturing processes and computer waste are depleting material resources and polluting the environment. When computers are discarded in landfills, they can release toxic materials and potentially dangerous levels of lead, mercury and flame retardants.

### **Difference between Computerized and Manual Accounting System**

According to the free online Marriam, it has the following differences.

**Speed:** The main difference between manual and computerized system is speed. Accounting software processes data and creates reports much faster than manual system. Calculations are done automatically in software programs, minimizing errors and increasing efficiency. Once data is input you can create reports literally by pressing a button in a computerized system.

**Cost:** Another difference between manual and computerized system is cost. Manual accounting with paper and pencil is much cheaper than a computerized system, which requires a machine and software include training and program maintenance. Expenses can add up fast with cost for printers, paper, ink and other suppliers.

**Back-up:** A third difference between manual and computerized system is the easy of backup of a computerized system. All transactions can be saved and backed up in case of fire or other mishap. You cannot do this with paper records, unless you make copies of all pages – long and inefficient process.

### **Problems and Controls of Computerised Accounting System**

According to free online Marrian, the problems of computerized accounting system comes with its own set of problems such as the need to protect against data loss through power failure or virus and

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the danger of hackers stealing data. Computer fraud is also a concern for who has access to the information particularly customer information. If there a security breach and data is stolen management can be held personally liable for the loss of data has been correctly entered into the system as a mistake in data entry can throw off a whole set of data.

Green computing involves reducing the electricity consumed and environmental waste generated when using a computer. Strategies that support green computing include recycling, regulating manufacturing process, extending the life of computers, and immediately donating or properly disposing of replaced computers.

### **The Effect of Computerized Accounting System on the Performance of Banking Industry in Ghana**

Tanenbaum (2010) states that manual processing of accounting data is too slow, and labour intensive in the banking industry. The speed at which computers can get according data processed cannot be matched. Computerized accounting system provides a means for those firms to record, very high volume of transaction with great speed and financial and prepare a wide range of detailed financial reports. Computerized accounting system affects strongly on the accounting work and on the performance of banking industry the computers can handle the recording process able to spend more time analyzing, planning and controlling financial operations for management, this can provide a greater amount of analytical information for use in decision making. Pandey (2007) adds that management is also in a better position to monitor the financial performance of all segments of the organization because a computerized accounting system can produce a broad range of detailed reports at short interval.

This is highly important for the selected branches of the Ga Rural Bank used as a population in this research because of their separate location. Thus, computerized systems avoid the time lost in correcting common errors. Computerized accounting system provides management with current accounting balance information since balance is posted as the transaction occur. This computerized accounting system provides management with current information to support decision making.

### **Organisational Profile of Ga Rural Bank**

The mission of the Ga Rural bank is to mobilize idle funds and channel such funds through provision of loans and Overdrafts to finance the economic activities of Rural dwellers within their catchment area thereby improving the standard of living in the Rural area. Also, to deliver innovative banking solutions to meet the needs and aspirations thus empowering economically rural dwellers within their catchment area.

This idea was mooted by Messrs Archibald Amponsa and Mr. Robert Larmiayi Golightly both of the then Examinations Department, now Banking supervision Department of the Bank of Ghana in the early 1980's.

The bank believes in the following philosophies:

- i. Quality and prompt service to small scale farmers, rural entrepreneurs and salaried workers.
- ii. Promoting economic and infrastructural development of its area of operation.
- iii. Development of professional skills and attitudes of its staff through training, seminars and exposures to modern trends of banking.

The vision of the bank is to work with the Local Rural Community to become a first class rural bank in Ghana. The Bank operates both personal and corporate account. Their products includes: Apex link, Ga Fidespo, Treasure Bills, Fixed Deposits, Current Account, Savings Account, Loans and Overdrafts, Microfinance Group Loans and Money Transfer (Western Union and MoneyGram).

The bank controls a customer base of over 300,000 with six (6) branches in Accra with its head office located at Amasaman.

## **METHODOLOGY**

### **Introduction**

The methodology of research is a conceptual field work on which the whole /conduct of research is based.

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Ozo and Odo (2007) define research as the systematic and scientific method of finding solutions to a problem. Research is a planned and systematic process of collecting, presenting, analyzing and interpreting data for purpose of arriving at dependable solution to human problem. The methodology for users on the various method and technique employed by the research in the course of collecting and analyzing data with the view of obtaining solutions to the problems.

This chapter seeks to discuss the population and sample size, the techniques used for sampling and data collection methods, the various data collection instruments as well as the procedures used in measuring and analyzing the data. This chapter therefore seeks to describe how the whole research was conducted.

### Research Design

Saunders and Philip (2012) states that research design is general plan of how you will go about answering your research questions it will contain clear objectives derived from your research questions specify the sources from which you intend to collect data, how you propose to collect and analyze them.

Ani and Ugwu (2007) adds that research design composes of series of prior decisions that take together provide a master plan for executing a research project. They continues that it is the specification of procedures for collecting and analyzing the data necessary to help solve the problem at hand the researcher used survey research design for the study, which was employed because of the research topic for this study.

The survey research design was adopted. It allows the collection of data about subjects that are exclusively internal to the participant, such as attitudes, opinions, expectations and intentions, and data on these areas are important for the study. Furthermore, it is often obtained by using questionnaires. These data are standardized allowing easy comparison.

### Population

Ozo (2007) states that population is the totality of people or object being considered. For the purpose of this study, the population size will be restricted to the staff of three selected branches of the Ga Rural Bank. The selected branches are:-

1. Achimota Branch
2. Kwabenya Branch
3. Taifa Branch

The population of the study was first divided into sub-population based on sections which comprises of;

- i. Accounting / Audit
- ii. Marketing
- iii. Administrative
- iv. Operation

After which the researcher systematically selected some staff in each sections depending on the position of such staff in their department. The total number of staff was 70 (seventy) and they form the population size.

**Table1.** Population Distribution Table for all three branches

S/N	Sections of workers	Achimota B	Kwabenya B	Taifa B	Total
A	Accounting/Audit	10	6	9	25
B	Marketing	8	5	8	21
C	Administrative	5	4	5	14
D	Operation	3	5	2	10
	Total	26	20	24	70

**Source:** field data, 2015

### Sampling Size and Sampling Techniques

Sample here refers to operation of the universe or population which reasonably reflects to opinions attitude or behaviours of the entire group. Sampling/sample size is a process of selecting a proportion

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of the population considered adequate to represent all the existing characteristics within the target population for the purpose of generating the finding from the sample itself. The sample will be obtained using the formular-Taro Yamene’s formula below:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = Sample size

N = Population Size

e = Significant level of error (0.05) or 5%

Where;

$$N = 70 \text{ and } e = 0.05 \text{ or } 5\%$$

$$n = \frac{70}{1 + N(e)^2}$$

$$n = \frac{70}{1 + 70(0.05)^2}$$

$$n = \frac{70}{1 + 70(0.0025)}$$

$$n = \frac{70}{1 + 0.175}$$

$$n = \frac{70}{1.175}$$

$$n = 59.5744681$$

Therefore n = 60 sample size

The sample size of the population is 60 and the researcher issue the same number of questionnaire to the staff of both banks to the responses in the study.

The simple random sampling techniques allows for generalization to take place. Bowley’s proportional allocation formular was applied thus;  $nh = \frac{n \times Nh}{N}$

Where;

Nh = Number of questionnaires allocated to each firm

N = total sample size

Nh = number of employees in each section of the population

N = Population size

**Achimota Branch**

$$\text{Accounting Section: } nh = \frac{20 \times 10}{26} = 7.6 = 8$$

$$\text{Marketing Section; } nh = \frac{20 \times 8}{26} = 6$$

$$\text{Administrative Section; } nh = \frac{20 \times 5}{26} = 4$$

$$\text{Operations sections; } nh = \frac{20 \times 3}{26} = 2$$

Equal total number issued to the bank = 20



### **Kwabenya Branch**

$$\text{Accounting Section; nh} = \frac{20 \times 6}{20} = 6$$

$$\text{Marketing Section; nh} = \frac{20 \times 5}{20} = 5$$

$$\text{Administrative Section; nh} = \frac{20 \times 4}{20} = 4$$

$$\text{Operations sections; nh} = \frac{20 \times 5}{24} = 5$$

$$\text{Equal total number issued to the bank} = 20$$

### **Taifa Branch**

$$\text{Accounting Section; nh} = \frac{20 \times 9}{24} = 8$$

$$\text{Marketing Section; nh} = \frac{20 \times 8}{24} = 7$$

$$\text{Administrative Section; nh} = \frac{20 \times 5}{24} = 4$$

$$\text{Operations sections; nh} = \frac{20 \times 2}{24} = 1$$

$$\text{Equal total number issued to the bank} = 20$$

### **Methods of Data Collection**

In collecting data for the study, two basic sources were employed;

Primary Source

Secondary Source

#### **Primary Sources**

These area data collected first hand i.e. by the user or his paid agent, form original source for the users express purpose. These referred to the data gathered as a result of direct interaction with the respondents. Primary data are usually obtained from the field through interviews questionnaires surveys, planned experimental observations or recording of official transactions.

##### **(a) Interview**

Ozo (2007) define interview as a mechanism through oral information is collected from an individual. It is a verbal interaction between the person seeking information (interviewer) and the person supplying the information (Interviewee).

##### **(b) Questionnaire**

A questionnaire is a “formalized set of questions for eliciting information”. This was the main instrument of measurement used for the collection of primary data. It contains series of written questions on the effect of computerized accounting system on the performance of banking industry.

#### **Secondary Sources**

These are data obtained second hand from published or recorded sources and used for a purpose different from that of the agency that initially collected and published the data. These are data gotten from reports, financial statements, account and budget plans, magazines etc. In this case, the information was gotten from official documents of the banking industries, varies research work on computerized accounting system, accounting journals, textbooks and websites.

### **Research Instrument**

The research used close – ended questions in order to sources information from responses. The questionnaire was structured in a five point like it response format to extract the data or information. In order to convert the likert scale to internal scale a weighting was given to each point in the scale as follows:

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Strongly Agree (SA)	=	5points
Agree (A)	=	4points
Strongly Disagree (SD)	=	2points
Disagree (D)	=	3points
Undecided (UD)	=	0points

**Validity and Reliability of Research Instrument**

Validity concept is concerned with average scope and adequacy of the information obtained during the inquiry. The instrument used in this study enjoys face validity. An instrument enjoys face validity when it is accepted by an expert without further verification. However, the questionnaire developed or designed for this study has face validity, since it was carefully examined and approved for the inquiry by the project supervisor of this study.

Reliability refers to consistency with which an instrument measures whatever it measures. Here the researcher is interested in determining how accurately the measuring tool is measured in the trait of interest. The instrument is considered reliable by the researcher since it tends to proffer answers to the research questions and hypothesis which are to be tested.

**Administration of Research Instrument**

The questionnaire was administered and collected from respondent immediately.

**Data Analysis**

Data obtained were analyzed using simple mean and one way analyses of variance (ANOVA) fastest by fisher (1929). The method was used to analyze these questionnaire to help in decision of which hypothesis will be accepted or rejected ANOVA has the following calculation;

(i) Total sum of square (TSS)	=	$\frac{\sum x^2 - (\sum x)^2}{n}$
(ii) Treatment sum of square (TRSS)	=	$r \{ \sum x^2 - (\sum x)^2 \}$
(iii) Error sum of square (ESS)	=	TSS – TRSS
Of (Degree of Freedom)	=	{r - 1}{N - r}
Level of significance	=	5% / 0.05

F – variance

**Decision Criterion for validation of Hypothesis**

If the calculated F ie (Fcal) is greater than tabulated F i.e. (Ftab), we reject the null (Ho) hypothesis and accept the alternative (Hi) hypothesis will be accepted while the alternative (Hi) will rejected. OR Ho is accepted if Fcal < f1 -∞, r-I, N-r & rejected if Fcal > f1 - ∞, r-i, N-r where; f1 -∞, r - 1, N-r is the tabulated values obtained from table of F – distribution.

**RESULTS AND DISCUSSIONS**

**Data Presentation and Analysis**

Data presentation means the various ways of carrying the different forms of data obtained through various data collecting techniques to enable the researcher perform analysis and extract new meaning from it. This research is targeted at understanding in a comparative analysis the effect of computerized accounting system on the performance of banking industry, data analyzed and derived by way of questionnaire administration are presented and analyze and so is done by statistical calculations / computations as tool for hypothesis is analysis of variance (ANOVA) and percentages. At the end inferences and conclusions are arrived at based on the statistical calculations.

**Presentation of Data**

The study is the effect of computerized accounting system on the performance of banking industry with primary focus on selected branches of the Ga Rural Bank.

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A cross section of the sections in the banks and staffs occupying various positions in the banks were covered. As can be seen below a total of 60 questionnaire were administered responded to and returned.

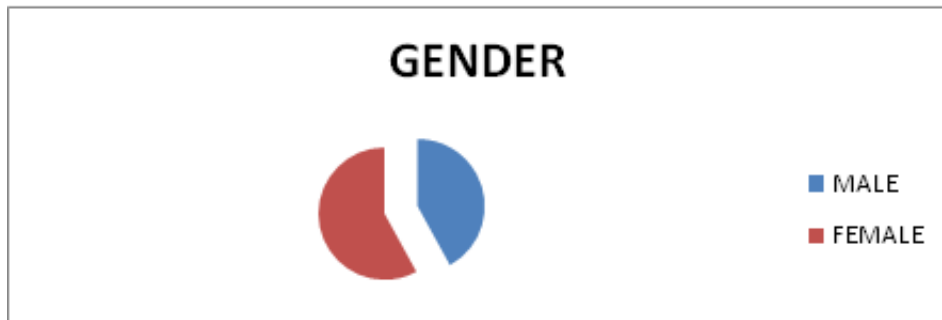
**Data Analysis**



**Figure1.** Questionnaire Distributions and Retrieval

**Source:** Field data; 2015

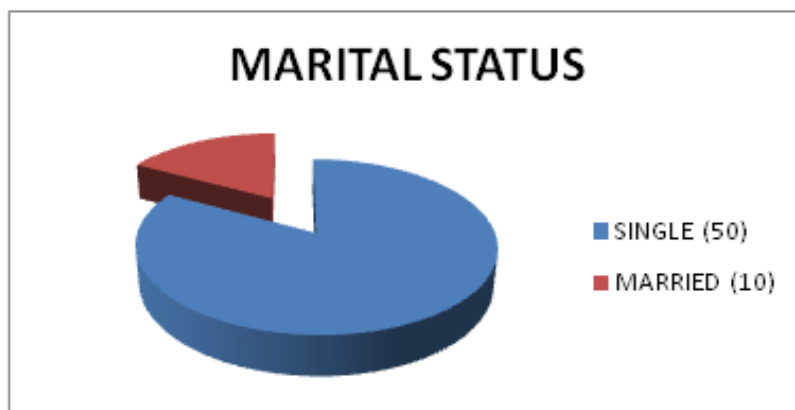
The table above shows that a total number of 60 questionnaires was distributed and returned from accounting section, marketing section, administrative sections and operations sections. 22 questionnaire representing 37% was distributed to staff of accounting/audit sections and the same number where returned 18 questionnaire representing 30% was issued and the number was returned, 12 (20%) questionnaire was distributed and the same number was returned and also in operations sections 8 represent (13%) was distributed and the same number were returned.



**Figure2.** Gender

**Source:** Field data, 2015

The above figure shows that 42% representing 25 respondents is male and 58% representing 35 respondents is female.

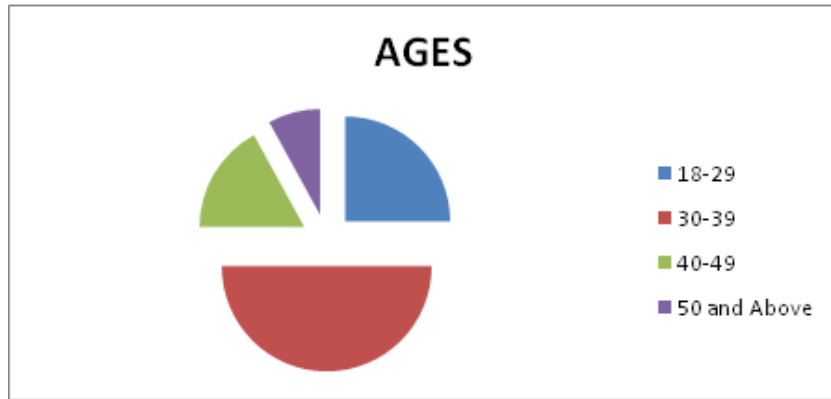


**Figure3.** Marital Statuses

**Source:** Field data, 2015

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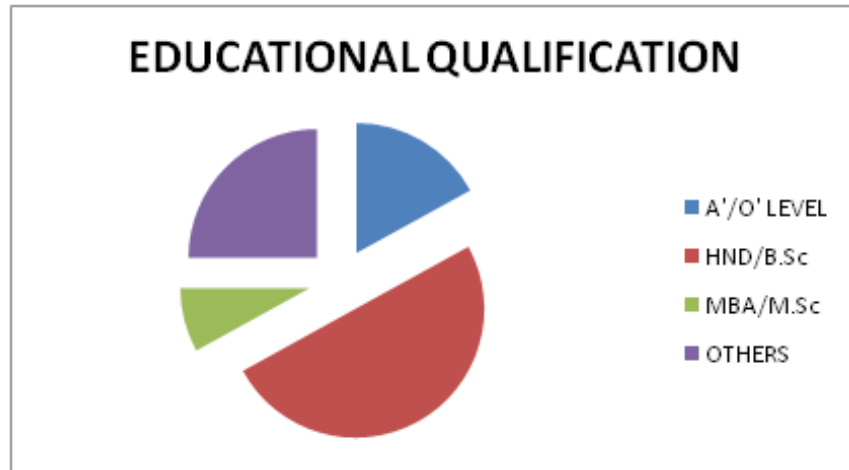
The above figure shows that 83% representing 50 respondents are single while 17% representing 10 respondents are married.



**Figure4.** Ages

**Source:** Field data, 2015

The above figure shows that 25% representing 15 respondents are 18-29 yrs, 50% representing 30 respondents are 30-39 yrs, 17% representing 10 respondents are 40-49 yrs. 8% representing 5 respondent are 50 yrs and above and no respondent for below 18 yrs.



**Figure5.** Academic Qualifications

**Source:** Field data, 2015

This figure above shows that 17% representing 10 respondents have A'/ O' Level, 8% representing 5 respondents have MBA/M.SC, 50% representing 30 respondents have HND/BSC and 25% representing 15 respondents for others.

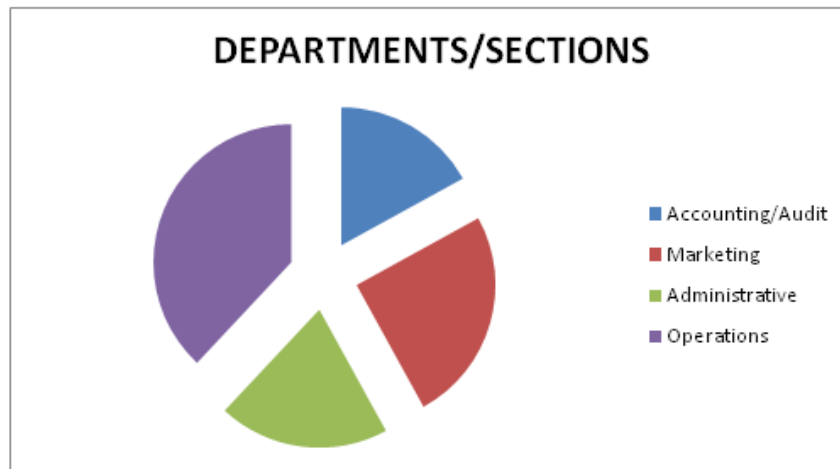


**Figure6.** Work Experience

**Source:** Field data, 2015

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The above shows that 30% representing 18 respondents have 5 years and below work experience, 25% representing 15 of the respondents have 6-10 years’ work experience, 17% representing 10 respondents have 11-15 years’ work experience; 20% representing 12 respondents have 16-20 years’ work experience and 8% representing 5 respondents have above 20 years work experience.



**Figure7.** Departments / Sections

**Source:** Field data; 2015

This table shows that 17% representing 10 respondents are in account / audit section, 25% representing 15 respondents are in marketing section 20% representing 12 respondents are in administrative sections while 38% repenting 23 represents are in operations sections.

**SECTION B**

**Question 1: To what extent is the operations of your bank computerized.**

**Table2.** To what extent is the operations of your bank Computerised

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	30	50
2	Agree	25	42
3	Strongly Disagree	5	8
4	Disagree	-	-
5	Undecided	-	-
	TOTAL	60	100%

**Source:** Field data, 2015

The table above shows that 50% representing 30 respondents strongly agree that the operations of the bank is computerized 42% representing 25 respondent agree that the operations of the banks is computerized, 8% representing 5 respondents strongly disagree while disagree and undecided have no respondents therefore the operations of the bank is computerized.

**Question 2: Does your branch has a data base / section unit?**

**Table3.** Has your branch a data base?

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	45	75
2	Agree	15	25
3	Strongly Disagree	-	-
4	Disagree	-	-
5	Undecided	-	-
	TOTAL	60	100%

**Source:** Field data; 2015

The table above shows that 75% representing 45 respondents strongly agree that there is an existence of a specific computer (data base) department or section unit in the bank 25% representing 15 respondents agree while no respondents for strongly disagree, disagree and undecided.

**Question 3: Does computerization aid quick customer service decision making process and accountability in your bank?**

**Table4.** Does computerisation aid quick customer service?

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	40	67
2	Agree	15	25
3	Strongly Disagree	-	-
4	Disagree	5	8
5	Undecided	-	-
	TOTAL	60	100

**Source:** Field data 2015

The table above shows that 67% representing 40 respondents strongly agree that computerization aids quick customer service decision making process and accountability in bank, 25% representing 15 respondents agree and 8% representing 5 respondents disagrees, while no respondents for strongly disagree and undecided.

**Question 4: Computerized accounting system is an effective means of keeping proper accounting records.**

**Table5.** Effective means of keeping proper accounting records

S/n	Options	Number of Respondents	Percentage
1.	Strongly Agree	35	58
2	Agree	25	42
3	Strongly Disagree	-	-
4	Disagree	-	-
5	Undecided	-	-
	TOTAL	60	100%

**Source:** Field data, 2015

The Table above show that 58% representing 35 respondents strongly agree that computerized accounting system is an effective means of keeping accounting records, 42% representing 25 respondents agree while no respondents for strongly disagree, disagree and undecided.

**Question 5: computerized Accounting system help to gain inherent advantage while minimizing risks involved in the daily banking operations.**

**Table6.** Gaining inherent advantage

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	22	37
2	Agree	20	33
3	Strongly Disagree	-	-
4	Disagree	18	30
5	Undecided	-	-
	TOTAL	60	100

**Source:** Field data, 2015

The above table shows that 37% representing 22 respondents strongly agree that computerized system help to gain inherent advantage while minimizing risks involved in the dally banking operations 33% representing 20 respondents agree 30% representing 18 respondents disagree while no respondents for strongly disagree and undecided.

**Question 6: There is a relationship between the application of the computer and manual system in the accounting system of the banking industry.**

**Table7.** Relationship between computer and manual accounting

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	30	50
2	Agree	20	33
3	Strongly Disagree	-	-
4	Disagree	10	17
5	Undecided	-	-
	TOTAL	60	100%

**Source:** Field data, 2015

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The table above shows that 50% representing 30 respondents strongly agree that there is a relationship between the application of the computer and manual system in the accounting system of the banking industry. 33% representing 20 respondent agree and 17% representing 10 respondents disagree while no respondents for strongly disagree and undecided.

**Question 7: The effect of computerized accounting system enhances higher turnover and profitability in banks.**

**Table8.** *Effect of computerised accounting system*

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	28	46
2	Agree	25	42
3	Strongly Disagree	-	-
4	Disagree	7	12
5	Undecided	-	-
	TOTAL	60	100

**Source:** *Field data, 2015*

The table above shows that 46% representing 28 respondents strongly agree that the effect of computerized accounting system enhances higher turnover and profitability in banks, 42% representing 25 respondents agree, 12% representing 7 respondents disagree while no respondent for strongly disagree and undecided.

**Question 8: There is co-ordination and quality performance in banking operations through the use of computerized accounting system.**

**Table9.** *Coordination and quality performance in banking*

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	25	42
2	Agree	20	33
3	Strongly Disagree	-	-
4	Disagree	15	25
5	Undecided	-	-
	TOTAL	60	100%

**Source:** *Field data, 2015*

The above table shows that 42% representing 25 respondent strongly agree that the use of computerized accounting system brings about co-ordination and quality performance in the banking operations 33% representing 20 respondents agree, 25% representing 15 respondents disagree while on respondents for strongly disagree and undecided

**Question 9: There is an effect of using computer to keep accounting records.**

**Table10.** *Effect of using computer*

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	40	67
2	Agree	20	33
3	Strongly Disagree	-	-
4	Disagree	-	-
5	Undecided	-	-
	TOTAL	60	100%

**Source:** *Field data, 2015*

The table above shows that 67% representing 40 respondents strongly agree that there is an effect of using computer to keep accounting records 33% representing 20 respondents agree, while no respondents for strongly disagree and undecided.

**Question 10: Computerized accounting system aids in the examination of banks statements of financial position to ensure agreement with source documents.**

**Table11.** Computerised accounting system on examination of financial statements

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	20	33
2	Disagree	18	30
3	Strongly Disagree	6	10
4	Disagree	16	27
5	Undecided	-	-
	TOTAL	60	100%

**Source:** Field data, 2015

The table above shows that 33% representing 20 respondents strongly agree that computerized accounting system aids in the examination of banks statements of financial position to ensure agreement with the source documents 30% representing 18 respondent strongly disagree, 27% representing 16 respondents disagree while no respondents for undecided.

**Testing of Hypothesis**

The test of hypothesis seeks to further analyze research questions which relates to the effects of computerized accounting system on the performance of banking industry. Here the three hypothesis stated in chapter one have been derived from the analysis table of 4.1.12, 4.1.13 and 4.1.15 for hypothesis one, two and three respectively.

**Hypothesis One**

Ho: There is no relationship between the application of computer and manual system in the accounting system of the banking industry.

Hi: There is relationship between the application of computer and manual system in the accounting system of the banking industry.

*Analysis Table12*

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	30	50
2	Agree	20	33
3	Strongly Disagree		
4	Disagree	10	17
5	Undecided		
	TOTAL	60	100%

**Source:** Field data, 2015

**Table13.** Reponses and Scoring

S/ no	Section	Strongly Agree	Agree	Strongly Disagree	Disagree	Undecided	Total
1	Accounting/Audit	13 x 5 = 65	8x4=32	-	3x3=9	-	
2	Marketing	4x5=20	3x4=12	-	2x3=6	-	
3	Administration	5x5=25	3x4=12	-	1x3=3	-	
4	Operations	8 x5=40	6x4=24	-	3x3=9	-	
	$\Sigma \times$	<u>150</u>	<u>80</u>	-	<u>30</u>	-	260
	$\times$	37.5	20	-	7.5	-	65
	$\Sigma (\times)^2$	<u>6,850</u>	1888	-	270	-	9008

$$X = \Sigma x \text{ where } n = 20$$

$$= \frac{260}{20} = 13$$



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Therefore  $\bar{X} = 13$

$$SS \text{ total} = \sum x^2 - \frac{(\sum x)^2}{n}$$

$$9008 - \frac{(260)^2}{20}$$

$$9008 - 3380$$

$$= 5,628$$

SS total = 5,628

SST =  $n \sum (1 - x_i) = x_i)^2$  where  $n = 4$

$$= 4(37.5 - 13)^2 + (20 - 13)^2 + (7.5 - 13)^2$$

$$= 4(600.25) + (49) + (30.25)$$

$$= 4(679.5)$$

SST = 2,718

SSE = TSS – SST (SSE)

$$= 5,628 - 2,718$$

SSE = 2,910

**Degree of Freedom**

SS Total =  $n - 1 = 20 - 1 = 19$  = sum square total (SS total)

SST =  $r - 1 = 4 - 1 = 3$  = sum Square Treatment (SST)

SSE =  $n - r = 20 - 4 = 16$  = Sum of square due to Error (SSE)

**Table 14.** Anova Table

Sources of Variations	Degree of Freedom (DF)	Sum of Squares (SS)	Mean of Squares (MS)	F-Ration
Treatment	3	2,718	$\frac{2718}{3} = 906$	$\frac{906}{181.875} = 4.98$
Error	16	2910	181.875	
TOTAL	19	5,628		

$F_{cal} = 4.98$

$F_{tab.} = F_{0.05, 3, 16} = 3.24$

**DECISION**

Since the  $F_{cal}$  is greater than the  $F_{tab}$ , that is  $4.98 > 3.24$  therefore holds that null ( $H_0$ ) hypothesis is rejected and the alternative ( $H_1$ ) is accepted; we therefore conclude that there is a relationship between the application of computer and manual system in the accounting system of the banking industry.

**Hypothesis Two**

$H_0$ : The effect of computerized accounting system does not enhance higher turnover and profitability in banks.

$H_1$ : The effect of computerized accounting system enhances higher turnover and profitability in banks.

*Analysis Table 15*

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	28	46
2	Agree	25	42
3	Strongly Disagree		
4	Disagree	7	12
5	Undecided	-	-
	TOTAL	60	100%

**Source:** Field data, 2015

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**Table16.** *Reponses and Scoring*

S/no	Section	Strongly Agree	Agree	Strongly Disagree	Disagree	Undecided	Total
1	Accounting/Audit	12 x 5 = 60	10x4=40	-	4x3=12	-	
2	Marketing	3x5=15	5x4=20	-	-	-	
3	Administration	3x5=15	4x4=16	-	-	-	
4	Operations	5 x 10=20	6x4=24	-	3x3=9	-	
	$\Sigma x$	<u>140</u>	<u>100</u>	-	<u>21</u>	-	261
	$\times$	35	25	-	5.25	-	65.25
	$\Sigma (x)^2$	<u>6,550</u>	2832	-	225	-	9607

$$X = \frac{\Sigma x}{n} \text{ where } n = 20$$

$$= \frac{261}{20}$$

$$= 13.05$$

Therefore  $x = 13.05$

$$SS \text{ total} = \frac{\Sigma x^2 - (\Sigma x)^2}{n}$$

$$= \frac{9607 - (261)^2}{20}$$

$$= 9607 - 3406.05$$

$$= 6200.95$$

SS total= 6200.95

$$SST = n \Sigma (1 - x) = x^2 \text{ where } n = 4$$

$$= 4[(35 - 13.05)^2 + (25 - 13.05)^2 + (21 - 13.05)^2]$$

$$= 4(481.8025) + (142.8025) + (63.2025)$$

$$= 4(687.8075)$$

$$= 2751.23$$

SST = 2,751.23

$$SSE = TSS - SST (SSE)$$

$$= 6200.95 - 2,751.23$$

$$= 3449.72$$

SSE = 3449.72

**Degree of Freedom**

SS Total =  $n - 1 = 20 - 1 = 19 =$  sum square total (SS total)

SST =  $r - 1 = 4 - 1 = 3 =$  sum Square Treatment (SST)

SSE =  $n - r = 20 - 4 = 16 =$  Sum of square due to Error (SSE)

*Anova Table17*

Sources of Variations	Degree of Freedom (DF)	Sum of Squares (SS)	Mean of Squares (MS)	F-Ration
Treatment	3	2,751.23	$\frac{2,751.23}{3} = 917.077$	$\frac{917.077}{215.6075} = 4.25$
Error	16	3449.72	215.6075	
<b>TOTAL</b>	<b>19</b>	<b>6200.95</b>		

F cal = 4.25

F tab. =  $F_{0.05, 3, 16} = 3.24$

**DECISION**

Since the  $F_{cal}$  is greater than the  $F_{tab}$ , that is  $4.25 > 3.24$  therefore holds that null ( $H_0$ ) hypothesis is rejected and the alternative ( $H_1$ ) is accepted; we therefore conclude that the effect of computerized accounting system enhances higher turnover and profitability in banks.

**Hypothesis Three**

$H_0$ : There is no effect of using computer to keep accounting Records

$H_1$ : There is an effect of using computer to keep accounting Records

*Analysis Table18*

S/no	Options	Number of Respondents	Percentage
1	Strongly Agree	40	67
2	Agree	20	33
3	Strongly Disagree	-	-
4	Disagree	-	-
5	Undecided	-	-
	TOTAL	60	100%

**Source:** Field data, 2015

**Table19.** *Reponses and Scoring*

S/no	Section	Strongly Agree	Agree	Strongly Disagree	Disagree	Undecided
1	Accounting/Audit	15 x 5 = 75	8x4=32	-	-	-
2	Marketing	8x5=40	4x4=16	-	-	-
3	Administration	5x5=25	3x4=12	-	-	-
4	Operations	12 x5=60	5x4=20	-	-	-
	$\sum x$	200	80	-	-	280
	$\times$	50	20	-	-	70
	$\sum (x)^2$	11,450	1824	-	-	13,274

$$X = \frac{\sum x}{n} \text{ where } n = 20$$

$$n = \frac{280}{20} = 14$$

$$x = 14$$

$$SS \text{ total} = \sum x^2 - \frac{(\sum x)^2}{n}$$

$$= 13,274 - \frac{(280)^2}{20}$$

$$= 13,274 - 3,920$$

$$= 9,354$$

$$SS \text{ total} = 9,354$$

$$SST = n \sum (x - \bar{x})^2 \text{ where } n = 4$$

$$= 4[(50 - 14)^2 + (20 - 14)^2]$$

$$= 4(1,296) + (36)$$

$$= 4(1,332)$$

$$SST = 5,328$$

$$SSE = TSS - SST \text{ (SSE)}$$

$$= 9,354 - 5,328$$

$$SSE = 4,026$$

**Degree of Freedom**

SS Total =  $n - 1 = 20 - 1 = 19 =$  sum square total (SS total)

SST =  $r - 1 = 4 - 1 = 3 =$  sum Square Treatment (SST)

SSE =  $n - r = 20 - 4 = 16 =$  Sum of square due to Error (SSE)

Anova Table 20

Sources of Variations	Degree of Freedom (DF)	Sum of Squares (SS)	Mean of Squares (MS)	F-Ration
Treatment	3	5,328	$\frac{5,328}{3} = 1776$	$\frac{1,776}{251.675} = 7.06$
Error	16	4,026	251.625	
<b>TOTAL</b>	<b>19</b>	<b>9,354</b>		

$F_{cal} = 7.06$

$F_{tab.} = F_{0.05, 3, 16} = 3.24$

**DECISION**

Since the  $F_{cal}$  is greater than the  $F_{tab}$ , that is  $7.06 > 3.24$  therefore holds that null ( $H_0$ ) hypothesis is rejected and the alternative ( $H_1$ ) is accepted; we therefore conclude that there is an effect of using computer to keep accounting records.

**SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION**

**Summary of Findings**

The effect of computerized Accounting system on the performance of banking industry was the study carried out by the researcher in this research exercise. Three (3) branches of the Ga Rural Bank formed the focus of this study.

The researcher study in consideration of its objectives had made some useful findings from the data collected through personal interviews, questionnaire administration and library research and also from the hypothesis formulated and tested.

Based on the outcome of the investigation, a summary of the findings made are as follows:-

- i. There is a relationship between the application of the computer and manual system in the accounting system of the banking industry. This was found to be true because the application of a computerized accounting system in banking operations aids quick customer services decision making process and quality performance than in manual accounting system. Also, the installation of accounting software in the computer, processes data and creates reports much faster than manual system which is slow.
- ii. It is evident that the impact of computerized accounting system enhances higher turnover and profitability in banks. Through this was corroborated by the test carried out, it was observed that some rural banks are yet to take advantage of the excellent benefits provided by it, as such this reports from banking operations carried out have remained uninterested and unreliable.
- iii. It is evident that the computerized accounting system is an effective means of keeping accounting records. This is because computerized accounting system provides a means for them to record; very high volume of transactions with the great speed and financial and prepare a wide range of detailed financial report. It also provides management with current account balance information since balance is posted as the transactions occur.
- iv. The application of computerized accounting system is effective in strengthening the control system and accountability in banks.
- v. There is co-ordination in the entire banking operations through the use of computerized accounting system.

**Conclusion**

Computerized Accounting System which is technically known as Electronic Data Processing (EDP) accounting system is an integrated, computer – based used machine system which allows the user to enter the transaction into the program once and all accounts are updated as necessary. It is also a specialized machine system use in gathering information. It also provides information for decision

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making functions and has been of tremendous benefits not only in banks also to all manner of firms and organizations. Computerized accounting system has helped in facilitating the provision of timely, quick customer service delivery, accurate and reliable information, required by them ie. (Banks and other firms and organizations).

It has also brought about quality performance in banking operations by abiding by the accounting instructions and guidelines which help them to minimize risk/challenges that are likely to be encountered in the course of their duties as well as evolves adequate measures to combat such challenges and achieve success.

Though the cost of maintenance and designing an effective computerized accounting system and the purchase of the associated facilities needed for it is high, if the banks are well committed to improving their performance and enhancing higher quality of work performed for higher profitability, they should go for it as well as ensure that the recommendations are rigidly followed.

**Recommendations**

From the findings of this study the following recommendations are therefore made to enhance the performance by these selected banks in their banking operations.

The recommendations are:-

- i. Rural Banks should take advantage of the excellent benefits derivable from the adoption of well designed computerized accounting system. This will help them to achieve a high and acceptable standard of quality in the performance of their banking operations.
- ii. Rural banks should channel reasonable proportion of their efforts and resources to the training and development of their bankers and accountants personnel (manpower development) through seminars, workshops and the use of computer. Accounting system so as to promote efficiency in banking operatives and in their statement of financial position ensure accurate timely and much easier and reliable for use.
- iii. Due to the dynamic nature of computerized Accounting system, and in line with the present global computer trends of events which is now widespread and mostly known as “Computer Age”. It is recommended than banks and other firms and organizations that are still in the operations of manual system of accounting to adopt specifically the computer based/Electronic Data processing (EDP) accounting system and this will in no small way aid in quick customer services delivery, produce a wide range of detailed report at short interval and provide management with current information to support decision making and aids collection storage, retrieval, communication and adequate security of information from unauthorized persons or fraudulent purpose and for the purpose of efficient performance and management and the achievement of the terms of their objectives.
- iv. Rural banks should as a matter of necessity and duty strive to incorporate the attributes of a well developed and effective computerized accounting system in the implementation of this quality performance that are stated in form of accounting principles which are important because they provide the conceptual guidelines for application of the basic accounting system. Also they give the measurement, recording and reporting phases of their accounting information processing cycle.
- v. The government should accelerate actions that will create an enabling environment in order to stimulate growth in the banking sector.
- vi. Government should lower the tariff on information technology aided tools and equipments imported should be subsidized by government. Even better, government should part with multinational companies abroad to supply equipments to Ghanaian banks directly at discounted rate.
- vii. All banks should utilize information technologies to render services that meet the genuine needs of the customers and if there’s change in the customer lifestyle, the banks should change along rapidly.
- viii. Given that information technology facilities depend largely on electronic power supply, without good power source, it becomes very difficult to maintain computer and other information

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technology equipments used by banks. Hence government should improve and provide different sources of energy that would complement the current supply.

- ix. The regulatory agencies should upgrade their information technologies constantly so as to align with the rapidly developing private sector banking innovation pace.
- x. The Ghanaian government should strive harder by encouraging local information technology firms towards meeting up the 21<sup>st</sup> century state of the art information technology requirement of the country.

**Direction for Future Research**

Future research should aim to improve impact of, Computerised Accounting system by examining whether it usage or adoption is important. The study neglects the likely impact of respondents' characteristics on perception of Computerised Accounting system adoption. Future research should seek informed answers to such characteristic-related questions.

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**APPENDIX A**

Faculty of Business Administration  
 Department of Accountancy  
 Kings University College  
 Accra

Dear Sir/ Madam,

I am a Lecturer of the above named institution and department, I am conducting a research on the topic “The effect of Computerized Accounting system on Ghanaian banks. A case study of Ga Rural Bank.

The purpose is for academic use and possibly publishes in international journal. The findings will definitely be of immense help to the bank, please kindly provide the appropriate response by ticking the right box to the best of your knowledge of those questions, I plead for your co-operation and be rest assured that the information obtained from this exercise is purely for academic purpose and strict confidentiality of all Information is guaranteed as it will be used for research purpose only.

Thank you.

Yours faithfully,

**PROF. EMMANUEL OPOKU WARE**  
 (Assistant Professor of Business)

**QUESTIONNAIRE**

Instruction; Please read the question carefully and tick any answer you deem appropriate.

**SECTION A**

- 1. Gender (a) Male ( ) (b) Female ( )
- 2. Marital Status (a) Single ( ) (b) Married ( )
- 3. Age (a) Below 18 years( ) (b) 18 – 29 ( ) (c) 30 – 39 ( )  
 (d) 40-49 ( ) (e) 50 and above ( )
- 4. Academic Qualifications (a) A’ / O’ Level ( ) (c) HND/B.Sc. ( )  
 (b) MBA / MSC ( ) (d) Others ( )
- 5. Work Experience (a) 5 years and below ( ) (b) 6 -10 years ( )  
 (c) 11 – 15 years ( ) (d) 16 – 20 years ( )  
 (e) Above 20 years ( )
- (6) Department/Sections (a) Account/Audit ( ) (b) Marketing ( )  
 (c) Administrative ( ) (d) Operation. ( )

**QUESTIONS SECTIONS B**

S/no	Questions	SA	A	SD	D	UD
1	To what extent are the operations of your bank computerized?					
2	Does your branch has a specific computer (data base) department?					
3	Does computerization aid quick customer service decision making process and accountability in your bank					
4	Computerized means of keeping proper accounting records					
5	Computerized accounting system help to gain inherent advantage while minimizing risks involved in the daily banking operations.					
6	There is a relationship between the application of the computer and manual system in the banking Industry.					
7	The effect of computerized according system enhances higher turnover and profitability in banks.					
8	There is co-ordination and quality performance banking operations through the use of computerized accounting system.					
9	There is an effect of using computer to keep accounting records.					
10	Computerized accounting system aids in the examination of banks statements of financial positions to ensure agreement with source documents.					