

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY-KUMASI

COLLEGE OF ART AND SOCIAL SCIENCES

KNUST SCHOOL OF BUSINESS

TOPIC:

**EFFECT OF INFORMATION COMMUNICATION AND TECHNOLOGY (ICT) ON
THE PERFORMANCE OF FINANCIAL INSTITUTIONS
(A CASE STUDY OF GHANA COMMERCIAL BANK, KNUST BRANCH)**

**THESIS SUBMITTED TO KNUST SCHOOL OF BUSINESS IN PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF
BUSINESS ADMINISTRATION**

BY

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DECLARATION

I hereby declare that, except for the specific references which have been duly acknowledge, this work is the result of my own field research and it has not been submitted either in part or whole for any other degree elsewhere.

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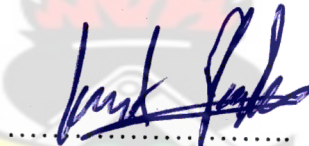
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DEDICATION

To my mother: Madam Mercy Kyei

&

Wife: Mrs Benedicta Adjei Baah



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LIST OF ABBREVIATION

GCB: Ghana Commercial Bank Limited

ICT: Information Communication and Technology

IT: Information Technology

KNUST: Kwame Nkrumah University of Science and Technology

KNUST



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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In Sub-Saharan Africa, developments in information and communication technology (ICT) are radically changing the way business is done. Electronic commerce is now thought to hold the promise of a new commercial revolution by offering an inexpensive and direct way to exchange information and to sell or buy products and services. This revolution in the market place has set in motion a revolution in the banking sector for the provision of a payment system that is compatible with the demands of the electronic marketplace (Balachandher *et al*, 2001).

Innovations in information processing, telecommunications, and related technologies – known collectively as “information technology” (IT) – are often credited with helping fuel strong growth in the many economies (Coombs *et al*, 1987). It seems apparent then that, technological innovation affects not just banking and financial services, but also the direction of an economy and its capacity for continued growth. IT is defined as the modern handling of information by electronic means, which involves its access, storage, processing, transportation or transfer and delivery (Ige, 1995). According to Alu (2002), IT affects financial institutions by easing enquiry, saving time, and improving service delivery. In recent decades, investment in IT by commercial banks has served to streamline operations, improve competitiveness, and increase the variety and quality of services provided. According to Yasuharu (2003), implementation of information technology and communication networking has brought revolution in the functioning of

the banks and the financial institutions. It is argued that dramatic structural changes are in store for financial services industry as a result of the Internet revolution; others see a continuation of trends already under way.

Many banks are making what seem like huge investments in technology to maintain and upgrade their infrastructure, in order not only to provide new electronic information-based services, but also to manage their risk positions and pricing. At the same time, new off-the-shelf electronic services such as online retail banking are making it possible for very small institutions to take advantage of new technologies at quite reasonable costs. These developments may ultimately change the competitive landscape in the financial services.

A number of studies have concluded that IT has appreciable positive effects on bank productivity, cashiers' work, banking transaction, bank patronage, customer services and bank service delivery. They concluded that, these have positive effects on the growth of banking (Balachandher *et al*, 2001; Idowu *et al*, 2002; Hunter, 1991; Whaling, 1995; Yasuharu, 2003). This paper seeks to evaluate the effect of Information, Communication and Technology on the performance of financial institutions in Ghana (a case study of Ghana Commercial Bank, KNUST Branch).

Iles *et al* (2004) is however quick to point out some key ICT problems such as: time-wasting on non-work related e-mail, games-playing, chat-rooms and online shopping, the introduction of viruses in downloaded files, the downloading and installation of non-work related software, illegal copying of licensed software, sabotage, computer fraud,

and non-compliance with legal requirements related to the processing of information about individuals. But as to whether ICT has effect on the performance of the KNUST Ghana Commercial Bank is yet to be researched and known.

1.1.1 Computerization of Ghana Commercial Bank Limited

Computerization started in the early 90's with just about five branches (5) on a software by name *Autobank*. In the 1996 other branches were also on software by name SCS BANK. Though some few were also on a manual system. In 1998 the five (5) on *Autobank* were migrated to a new software by name *Finware*. All this while GCB was trying to see where it can comfortably be abreast with the computerization in the third world. In 2000, GCB moved to yet software called *Flexcube 4.6*. Twenty (25) branches were hooked on this software. GCB saw that the 25 branches was a success after two (2) years. After that period, management decided to roll the other branches of GCB onto *Flexcube*. In 2002, the success story started; as it lead to the improvement of service delivery, customer care and computer literacy for all staff.

1.2 Statement of the Problem

The performance of Ghana Commercial Bank with respect to customer service delivery leaves much to be desired. Being the bank of the nation, it is equipped with the necessary logistics and the newest technologies which give it a competitive edge over its other financial competitors. In 2007, it received the First ICT Award organized by the Ministry of Communications for being the first bank to computerize its operations and network its branches across the nation (www.gcb.gh.com).

However, there has been frequent breakdown of the bank's Automated Teller Machine (ATM) coupled with frequent system link disruption or failure which often causes delays and queues during banking transactions.

Besides, apart from depositing, customers encounter difficulty in accessing other services such as statement requisition, online withdrawal, cheque book requisition etc. from other networked branches other than their main branch. The above problems and others have called for the research into these issues.

1.3 Research Objectives

The main objective of this research is to assess the impact of Information Communication Technology (ICT) on the service delivery of Ghana Commercial Bank (GCB) with respect to its customer satisfaction.

Specifically, the study seeks:

- 1) To investigate service quality of GCB with respect to computerization of its services.
- 2) To examine customers' perceptions of GCB customer services.
- 3) To assess the impact of branch network to the GCB service quality.
- 4) To identify the challenges faced by the GCB with its adoption of ICT.

1.4 Research Questions

- 1) Does computerization improve service quality?
- 2) Can ICT change the customers' perceptions of a bank?
- 3) Does banks' networking improve service quality?
- 4) Does ICT adoption come with its challenges?

1.5 Significance of the Study

Many financial institutions have strived for survival, growth and development by using various competitive strategies such as benchmarking, competitive analysis, customers care, customer relationship management etc. But the current competitive tool sweeping across the face of the globe is the adoption of Information Communication and Technology. This newest discovery has come with its benefits and challenges. But the question which still remains a point of debate is: “Does the adoption of ICT matters in the performance of organizations?”, “Does it improve the service quality of an organization?”.

Ghana Commercial Bank Ltd. received the First ICT Award 2007 by Ministry of Communication for being the first bank to computerize and networked its operations. But as to whether this has affected its performance and improved upon its customer service is an issue worth researching into. Since there is a general perception among the bank's customers that it serves the worse of service contrary to its motto: “we serve you better”.

This study is relevant for two major reasons. This study will help to ascertain whether ICT has impacted on the service quality and the general operation of the bank. In addition, the study will also provide a critical and analytical perspective for understanding the problems and challenges impeding the bank's performance in the wake of modern technological banking.

1.6 Overview of Research Methodology

The data collected during face-to-face interviews with the bank's branch manager and IT officer, and questionnaires administered to both employees and customers of the bank were used for making a comparative analysis based on explanatory statistical methods. Explanatory approach was chosen since the study seeks to find the causal relationship between two variables (ICT and organizational performance). Data was analyzed using Statistical Package for Social Sciences (SPSS) and the analysis made it possible to identify the reasons for the bank's poor performance in its customer service delivery.

1.7 Scope of the Study

The research is limited to the Kwame Nkrumah University of Science and Technology. It would have been prudent to have undertaken the study in a bigger area but it was not possible due to the time frame given for the completion of study. The respondents are the branch manager, functional managers, heads of departments, and customers of the bank. The areas covered were: service quality of GCB with respect to computerization, examination of the customers' perception of the bank's customer service, impact of branch network on service quality and challenges faced by GCB in adopting ICT. Findings from the study are limited to only KNUST Ghana Commercial Bank Ltd. which was selected for the study. However other financial institutions in the country with similar characteristic could adopt the findings to the solution of their own management problems.

1.8 Definition of operational Terms

Effect: a change or changed state occurring as a direct result of action by somebody or something else (Microsoft Encarta 2008).

Information and Communication Technology (ICT)-a range of technologies for gathering, storing, retrieving, processing, analyzing and transmitting information-
www.investorword.com

Performance: the manner in which something or somebody functions, operates, or behaves (Microsoft Encarta Dictionary 2008). The performance of the bank would be evaluated in terms of service quality delivery with to respect its reliability, efficiency and convenience.

Perception: The psychological ability to process or use information received through the sense organs.

Financial Institution: an institution which collects funds from the public and places them in financial assets, such as deposits, loans, and bonds, rather than tangible property(www.investorwords.com/1950/financial_institution.html)

1.9 Limitation of Study

The core of the study was to investigate the effect of ICT on the performance of Ghana Commercial Bank, KNUST branch. Time constraint was a major setback in the conduct of the study and therefore enough time was not available for the researcher to sample a

larger population. In addition, since the research focus was on a single bank branch, comparative statistical analysis among various branches of GCB could not be done to give a clearer picture of the situation. On the part of the management, some did not see the essence of the study; as they were of the mindset that the weaknesses in their customer service would be exposed and hence were somehow indifferent towards the study. Some staffs members had to be convinced of the essence, relevance and benefits of the study to their organization before they decided to fill questionnaires and grant interviews. Also funding was also a limitation that the researcher had to deal with since the research was solely financed by the researcher.

1.10 Organization of the Study

This is divided into five chapters. The first chapter examines the background of the study, research questions, statement of objectives and the significance of the study. Chapter two focuses on reviewing of existing literature and the key issues confronting this study. It basically looks at the effect of ICT on the performance of financial institutions (a case study of the KNUST Ghana Commercial Bank).

The third chapter, which is the methodology, looks at the research instruments used for data collection from the field. It also looks at the population, sample size and how it was analyzed. Chapter four analyses the data collected. The final chapter deals with findings of the study, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

During the last decade, service organizations have been undergoing considerable transformations at both macro and micro level, mainly due to the rapid development, proliferation and business applications of technological advances as well as the requirements and implications of the knowledge and experience-based economy. As a result, customers are becoming less loyal, more price sensitive and discerning. To address such challenges and satisfy the dynamically changing customer needs, exploitation of information technology capabilities for reengineering business processes and creating business value has become a business necessity (Sigala, 2003).

The changes in financial services have been brought about to a greater or lesser degree by the growing financial sophistication of customers, the greater and more efficient use of information technology, and the entry of new aggressive competitors in the marketplace (Owusu-Frimpong, 1999). (Kumar & Hillegersberg, 2008) on their part see this radical transformation from the confluence of five trends: globalization; deregulation in different parts of the world; convergence of various financial services; increasing movement of wealth to emerging economies; fundamentally changing nature and structure of financial services around the globe through international trade agreements on services.

The outstanding among the major forces behind these developments is technology, which is breaching geographical, industrial, and regulatory barriers, creating new products, services, market opportunities, and developing more information and systems-oriented business and management processes (Liao and Cheung, 2002). In the world of banking, the developments in information technology have had an enormous effect in development of more flexible payment methods and more user-friendly banking services. Online banking and other electronic payment systems are new, and the development and diffusion of these technologies by financial institutions is expected to result in a more efficient banking system (Liao and Cheung, 2002). But access to these technologies in a form suitable to the specific needs of a country is a prerequisite for participation in the global information society (Kiessling, 2007). Current developments not only require service organizations to transform their business operating models, but also to redefine their strategic scope and role. Indeed, service organizations are currently challenged to redefine themselves as “experience creators and stagers” in order to create long-term customer relations and enhance customer patronage and loyalty (Pine and Gilmore, 1999; Kandampully and Duddy, 1999).

Overall, within this turbulent economic environment, business competitiveness and performance is currently being related with issues such as service quality, experiences adding customer value, exploitation of information and communication technologies, customer relationship management, personalization and customization of services, cross-cultural understanding and eventual satisfaction of customer needs. However, studies investigating the ICT productivity impact have always led to contradictory and or questionable results regarding the ICT benefits.

2.2 Information Communication Technology

Information and Communications Technology - or technologies (ICT) is an umbrella term that includes all technologies for the manipulation and communication of information. The term is sometimes used in preference to Information Technology (IT), particularly in two communities: education and government. In the common usage it is often assumed that ICT is synonymous with IT; ICT in fact encompasses any medium to record information (magnetic disk/tape, optical disks (CD/DVD), flash memory etc. and arguably also paper records); technology for broadcasting information - radio, television; and technology for communicating through voice and sound or images - microphone, camera, loudspeaker, telephone to cellular phones. It includes the wide variety of computing hardware (PCs, servers, mainframes, networked storage), the rapidly developing personal hardware market comprising mobile phones, personal devices, MP3 players, and much more; the full gamut of application software from the smallest home-developed spreadsheet to the largest enterprise packages and online software services; and the hardware and software needed to operate networks for transmission of information, again ranging from a home network to the largest global private networks operated by major commercial enterprises and, of course, the Internet. Thus, "ICT" makes more explicit that technologies such as broadcasting and wireless mobile telecommunications are included.

However, in this research the term ICT will be limited to the use of equipment such as automated teller machines, computers, satellites, networking equipment, telephones, cell

phones, electronic cards, internet, intranet, and softwares used within the banking domain ([www. en.wikipedia.org](http://www.en.wikipedia.org)).

2.3 Factors Necessary for Successful ICT Implementation in Financial Institutions

Though the extensive use of advanced service technologies (AST) and information and communication technologies (ICT) has modified numerous functional areas and has changed the work environment at the firm level; many authors have also come to realize that, along with the impact of new technologies, organizational changes such as the introduction of high-performance work practices also play an important role in the transformation of the firm (Osterman, 1994; Bresnahan et al., 2002). Besides, there are actions that facilitate or orient the appropriation process and the development of employee's perceptions of appropriate ICT usage. These include some managerial actions such as training, awareness campaigns, user interface design, technology-use mediation, or formalization and diffusion of a code of conduct among employees (Bia et al, 2007).

As the banks personnel are inevitably instrumental in the creation of quality in the service product, a programme designed to encompass activities related to staff attitude and behavior should emphasize the increasing need for a high level of service and the importance of the customer and training staff with the knowledge required to deal with customers. A prerequisite for success will be the total commitment of the organization from top management downward with effective leadership driving a customer-oriented culture throughout the organization (Frimpong, 1999). In addition, as people age they show a greater reluctance to adopt new technologies and become more cautious in their

decision making, thus increasing their level of commitment to doing things the same way they have always done them (Fiorito, 2006). On the other hand, (Kiessling, 2007) is of the belief that the quality of institutions matters for the adoption rate of ICT technologies at a level comparable to that of income and education.

2.4 The Role of ICT in Financial Institutions

The use of ICT has a positive relation with the overall performance of a company (Byrd and Davidson, 2003). ICT provides a supportive role for human activities to enhance organizational (or personal) efficiency and effectiveness (Cohen et al., 2002). As a major driver of sector restructuring and globalization is information technology. Most money is now no more than a digital record. Most transactions between banks are electronic and an increasing number of companies and individuals use the Internet to communicate with their bank. Electronic money has, however, been little more than new ways of executing transactions, rather than new forms of money. Neither has accounting and clearing procedures changed. It still takes several days to transfer money between accounts in different financial institutions. A boost to electronic banking may occur as mobile telephony and digital television become more common (May, 2004).

Furthermore, the internalization of ICT applications affects business operations directly. The ability to transfer information seamlessly through shared electronic files and networked computers improves the efficiency of business processes such as documentation, data processing, and other back-office functions (for example, organizing incoming orders and preparing invoices). Increasingly sophisticated ICT

applications—such as customer resource management (CRM) and electronic data interchange (EDI)—allow firms to store, share, and use their acquired knowledge (Zhen-Wei Qiang et al, 2006).

In addition, a further impact of ICT in enhancing the performance financial institutions is seen in terms of information management systems, product development, and risk management and distribution capabilities. In fact greater utilization of ICT will undoubtedly reduce costs for both consumers and the institution themselves (Abidin 2004). ICT offers institutions alternative or non-traditional delivery channels through which banking products and services can be delivered to consumers more conveniently and economically without diminishing the existing service levels. Internet banking (IB) is such a delivery channel that deserves special attention from financial institutions, policy-makers, researchers, and academicians owing to its enormous potential from the viewpoint of banks, businesses, and retail consumers (Liao and Cheung, 2002). Besides, ICT has introduced what is known as the 'Networked economy', where successful businesses are linked with their suppliers, internal manufacturing processes, shippers and customers in real-time. Businesses are now able to move data and communicate with each other in real time. This has transformed the way businesses are being done. ICT has the capacity to cut costs of coordination, communication and information processing and many businesses have taken advantage of this (Brynjolfsson and Hitt 2000).

In short, the internalization of ICT applications affects business operations directly. The ability to transfer information seamlessly through shared electronic files and networked computers improves the efficiency of business processes such as documentation, data

processing, and other back-office functions (for example, organizing incoming orders and preparing invoices). Increasingly sophisticated ICT applications—such as customer resource management (CRM) and electronic data interchange (EDI)—allow firms to store, share, and use their acquired knowledge.(Zhen-Wei Qiang et al, 2006).

Therefore, ICT helps to execute activities faster, support autonomous decision-making processes, and enable distributive operations (Huang and Nof, 1999) in order to achieve higher logistics efficiency (Faber et al., 2002). In a way, the use of ICT makes the processes more transparent to the stakeholders, which in turn, could lead to adoption of better business practices to meet the customer service levels (Bharadwaj, 2000; Yazici, 2002; Andersen, 2001) and increase in organizational capability to respond to a dynamic environment (Monteiro and Macdonald, 1996) thereby reducing the cost of operation by as much as 50 per cent over the traditional business practices (Gattorna and Berger, 2001). In addition, ICT enables the principles of TQM to be put into practice – principles such as customer-driven standards, customer-supplier links, the prevention of error, quality at source, and continuous improvement (Laudon and Laudon, 2000).

However, measuring the impact of information technology (IT) on organizational performance is a complicated task. Since organizational performance cannot be shaped only by IT applications, other factors such as business strategies and organizational culture should also be taken into consideration while measuring the impact of IT on overall performance. Gunes, F.; Basoglu, A.N.; Kimiloglu, H.(2003).

Furthermore, as to whether the increasing use of ICT enhances or destroys performance remains a subject of debate. Theory suggests that the net impact depends on the relative strength of two competing effects: On the one hand, the use of ICT can lead to innovations, which can result in output growth and a concomitant growth in service. On the other hand, process innovation and ICT-related productivity gains imply that a given output level can be produced with less labor effort. In addition, there can be substitution effects if new ICT-related products and services replace other, potentially more labor-intensive products and service (Koellinger, 2006). Also from a different perspective, the level of ICT application in an organization could differ significantly for small or large companies, as the level of risks, constraints and expertise faced by these companies could be quite different (Kuan and Chau, 2001; Lee et al., 1999). In addition, when the use of ICT is not properly aligned to the required business processes, it could create disillusion on its benefits of facilitating business processes (Closs et al., 1997).

2.5 Challenges in ICT Adoption

Despite some promising and optimistic views of the contribution of ICT on business value, however, there has been a long debate on the impact of ICT on organizational performance, which is called the “IT productivity paradox” (Brynjolfsson, 1993). The impact of ICT on specific performance outcomes has shown mixed and ambiguous results. This paradox basically points out that ICT does not necessarily enhance productivity or business performance; in fact, it may even be viewed as a commodity which can easily be replicated by competitors (Carr, 2003), thus diminishing the prospects to develop sustained competitive advantage.

In all, ICT serves a paradoxical function. On one side it deteriorates business performance, if simply seen as an ICT investment without paralleling managerial support processes. On the other side, it may help, if leveraged by appropriate business and management processes to facilitate governance relationships and balance the power between key players. It is also quite important to point out that ICT may not have a direct effect on business performance, as originally envisaged by managers and researchers, but is suggested to be mediated by coordination, control and opportunism processes (Jean 2007). In a different perspective, (Lesjak and Vehovar, 2007) noted that measurement of the impacts of investments in ICT is traditionally a difficult research topic. Despite the seemingly apparent and obvious benefits of ICT, doubts about its productivity have accompanied ICT spending from the very beginning of its commercial exploration and numerous studies have thus already attacked this problem in past decades (Lesjak and Vehovar, 2007).

In fact, not all service firms as well as business transformation efforts have been successful so far. Professional experience and academic research have identified the failure and/or the inability of several information technology projects to deliver expected business results. Research has also identified the unsuccessful efforts of service firms to fully satisfy customers' needs and expectations. Service innovation, improvement and technological enhancement require careful business planning and commitment; service organizations need to be aware of it before getting engaged with any transformation activity (Sigala, 2003). This has reveals the dangers which come along with using ICT as a way of enhancing performance of an institution. For example, managers perceive several potential sources of threat to quality associated with employees whose jobs

involve working with ICT; key problems include time-wasting on non-work related e-mail, games-playing, chat-rooms and online shopping, the introduction of viruses in downloaded files, the downloading and installation of non-work related software, illegal copying of licensed software, sabotage, computer fraud, and non-compliance with legal requirements related to the processing of information about individuals (Iles 2004). Furthermore, ICT adoption comes along with a lot of constraints. Constraints at the personal level include limited budget for ICT investment, commitment from other project participants, issues of ICT standardization, and security problems. At the organizational level, constraints include basic levels computer experience, time available to learn, and the identification of clear benefits of ICT use. Constraints at the group level include time available to share information, quality of personal contact and geographical distance.

Although ICT has become a strategic asset which helps improve business processes and change the function of markets, it is necessary for organizations to continue their efforts in developing and implementing the up-to-date technology. Nevertheless, many organizations still hesitate to adopt new ICT and some even believe IT does not matter as a strategic resource because of its commoditization (Carr, 2003). Spithoven A.H.G.M. (2003) notes some interesting insights about ICT adoption by organizations. He believes that, management style factors, such as the CEO's attitude toward ICT and interest in ICT, evaluation period and initial implementation time, and the CIO's age and attitude toward change are important to promote ICT adoption. As Rizzi and Zamboni, (1999) also hinted that, the use of ICT requires redesign and reorganization of logistics processes.

On a final note, measuring the impacts of investments in ICT is traditionally a difficult research topic. Despite the seemingly apparent and obvious benefits of ICT, doubts about its productivity have accompanied ICT spending from the very beginning of its commercial exploration and numerous studies have thus already attacked this problem in past decades Lesjak et al. (2007).

2.6 Organizational Performance

Defining and measuring business performance have been the interests of researchers for centuries. Business performance can be viewed as an outcome of business process in a company Voss & Voss (2000), or can be studied on the relationship between market share and profitability Szymanski et al. (1993). Wikipedia.org views organizational performance as comprising of the actual output or results of an organization as measured against its intended outputs (or goals and objectives). Specialists in many fields concerned with organizational performance include strategic planners, operations, finance, legal, and organizational development. The recent increasingly competitive trading environment is some of the compelling factors to improve organizational performance. Typical targets for improvement programs have been production quantity and service quality, innovation, and creativity. Top management teams (TMTs) and their importance as a potential determinant of firm performance continues to be a focus of strategic management researchers Goll et al. (2001). Organizational performance studies have inconsistency results because of the different characteristics of the sample used, the variance in measurements employed and the lack of consensus on the definition of performance.

Performance has been conceptualized in different ways for different researchers. It can be measured objectively based on historical data organizations (Bharadwaj, 2000; Sanders & Premus, 2005) or measured subjectively based on perception of respondents on organizational performance in relation to their expectations, goals or in comparison with performance of company's competitors Ravinchandran *et al.* (2005).

2.6.1 Determinants of Bank Performance

Research on the performance of financial institutions has typically emphasized the external environment: financial institutions are seen as trapped by their socioeconomic contexts and the rule of administration and law. Empirical evidence supports this contention and indicates that the external context constrains the performance of public agencies (Andrews *et al.* forthcoming). Molyneux and Thorton (1992), were among the first who examined the determinants of banks profitability in several countries using a sample of 18 European countries over the period 1986-1989 and found a positive association between the return on equity and the level of interest rates, bank concentration and the government ownership. Also Giniger *et al.* (1983) advanced that the decremental theory of aging provides a theoretical basis for a negative relationship between age and performance. His theory posits that certain abilities decline as workers age. Based on this, a natural result of aging amongst workers would be a decreased level of performance.

From a different perspective, IES (1997) believes that a higher level of education can positively influence the abilities and skills of employees. As education enables employees to use productive and more advanced technologies, enhances their ability to work in teams and also makes them more adaptable to new tasks or to changes in old

tasks. Hence education level is an important factor in firm performance (Norburn and Birley, 1988). Higher education levels are expected to equate to more creative solutions to problems Goll et al., (2001) and more firm innovation Bantel et al (1989).

However, some other studies do not support the idea that more education will translate into better performance. Nafukho and Hinton (2003) find that education levels do not predict better performance amongst Kenyan drivers. Ariss and Timmins (1989) find that graduate education does not improve managerial performance at work. Even other researchers have been quick to relate performance with age but studies that examined this relationship offered mixed results. Ali and Davies (2003) found that total output increased with age until subjects reach their mid-1940s. After that, output declines with age. Interestingly, they also found that tenure/ experience is a more important determinant of performance than age. A negative relationship between age and job performance evaluations was found in a sample of entry-level professionals in accounting firms (Saks and Waldman, 1998). Experience was found to be a better predictor of performance than age in non-managerial jobs (Avolio et al., 1990). In a sample of employees in the garment manufacturing industry, Giniger et al. (1983) found that older workers outperformed younger ones in jobs that required speed and skills. They also found that experience, rather than age, determined better performance. Meta-analysis studies show that on average, age is responsible for little variance in job performance (McEvoy and Cascio 1989; Waldman and Avolio, 1986). A study by Kutscher and Walker (1960) shows that the output per working hour in office workers is not related to differences in age. Furthermore, they found that experience in a job seems to be a significant factor on average performance amongst different age groups.

Based on previous evidence, it can be argued that the relationship between age and performance is far from clear.

From the forgone studies, it could be deduced that an approach based solely upon the external environment is misplaced. A growing number of studies show that management does indeed matter (Andrews, Boyne, and Walker forthcoming; Boyne 2004; Brewer and Selden 2000; Meier and O'Toole 2002; Nicholson-Crotty and O'Toole 2004; O'Toole and Meier 2003) and successful performance must be linked to the group objectives and tactics Seeker and Wilson (1997).

2.6.2 Effect of ICT on Performance of Institutions

Issues relating to organizational performance have been researched from various perspectives. For example, the economic perspective emphasizes the importance of external factors. This perspective claims that the alignment of the organization's internal strength with the external environment is the major determinant of performance, while the resource-based approach hypothesizes that to enjoy sustainable growth, the organizations' competitive advantage has to be supported by resources that cannot be duplicated easily (Tvorik and McGivern, 1997). On the other hand the contingency and configuration theorists state that there is a relationship between organizational alignment and performance (Mintzberg, 1979). Regardless of the perspectives one uses to view organizational performance, the bottom line of the debate is the importance of identifying factors that contribute to the performance of organization and managing them appropriately.

Recently the major driver of sector restructuring and globalization has been information communication technology. Most money is now no more than a digital record. Most

transactions between banks are electronic and an increasing number of companies and individuals use the Internet to communicate with their bank (May, 2004). It has further been demonstrated that advanced ICT can facilitate the acquisition of performance data and motivates firms to increase their control and monitoring efforts vis-a-vis their exchange partners (Jacobides and Croson, 2001). In another study, Yamin and Sinkovics (2007) pointed out that coordination via advanced ICT can reduce costs and enhance information exchange quality, improving visibility of business process and procedures. For example, the internalization of ICT applications affects business operations directly. The ability to transfer information seamlessly through shared electronic files and networked computers improves the efficiency of business processes such as documentation, data processing, and other back-office functions (for example, organizing incoming orders and preparing invoices). Increasingly sophisticated ICT applications—such as customer resource management (CRM) and electronic data interchange (EDI)—allow organizations to store, share, and use their acquired knowledge (Zhen-Wei Qiang et al, 2006).

A further impact of ICT in enhancing the performance of financial institutions is seen in terms of information management systems, product development, and risk management and distribution capabilities. In fact greater utilization of ICT will undoubtedly reduce costs for both consumers and the institution themselves (Abidin 2004). But aside Information technology, (Dixon, 2006) identified other impacts of organizational performance, such as sales and employment growth, labor productivity, total factor productivity, and investment.

However, in examining how performance unfolds in practice, Khandekar and Sharma (2005) argues that, performance may be influenced by job satisfaction, age and the level of one's education, organizational culture and management style. In addition, Bayo-Moriones *et al* (2008) have also discovered that ICT and innovative work practices are positively related to skills, although they have different effects on workforce composition and training.

2.7 Brief Explanation of Conceptual Framework

The original conceptual framework was developed based on inputs from the literature review findings, key propositions of the then existing partial frameworks and the new trends unfolding in the area of the study. The steps involved in this exercise included the following:

- (a) Identification of organizational variables on which the impact of IT needs to be examined.
- (b) Classification of organizational variables into broad groups.
- (c) Developing a hierarchy of the impact of IT on various organizational variables identified above.
- (d) Developing an integrated framework based on the above.
- (e) Defining and identifying contingency factors.

Literature reviewed revealed that ICT impacts on the performance of an organization. The changes it brings can come either as an enhancer or as a challenge to the performance of the organization. The ICT adoption in an organization comes about as a

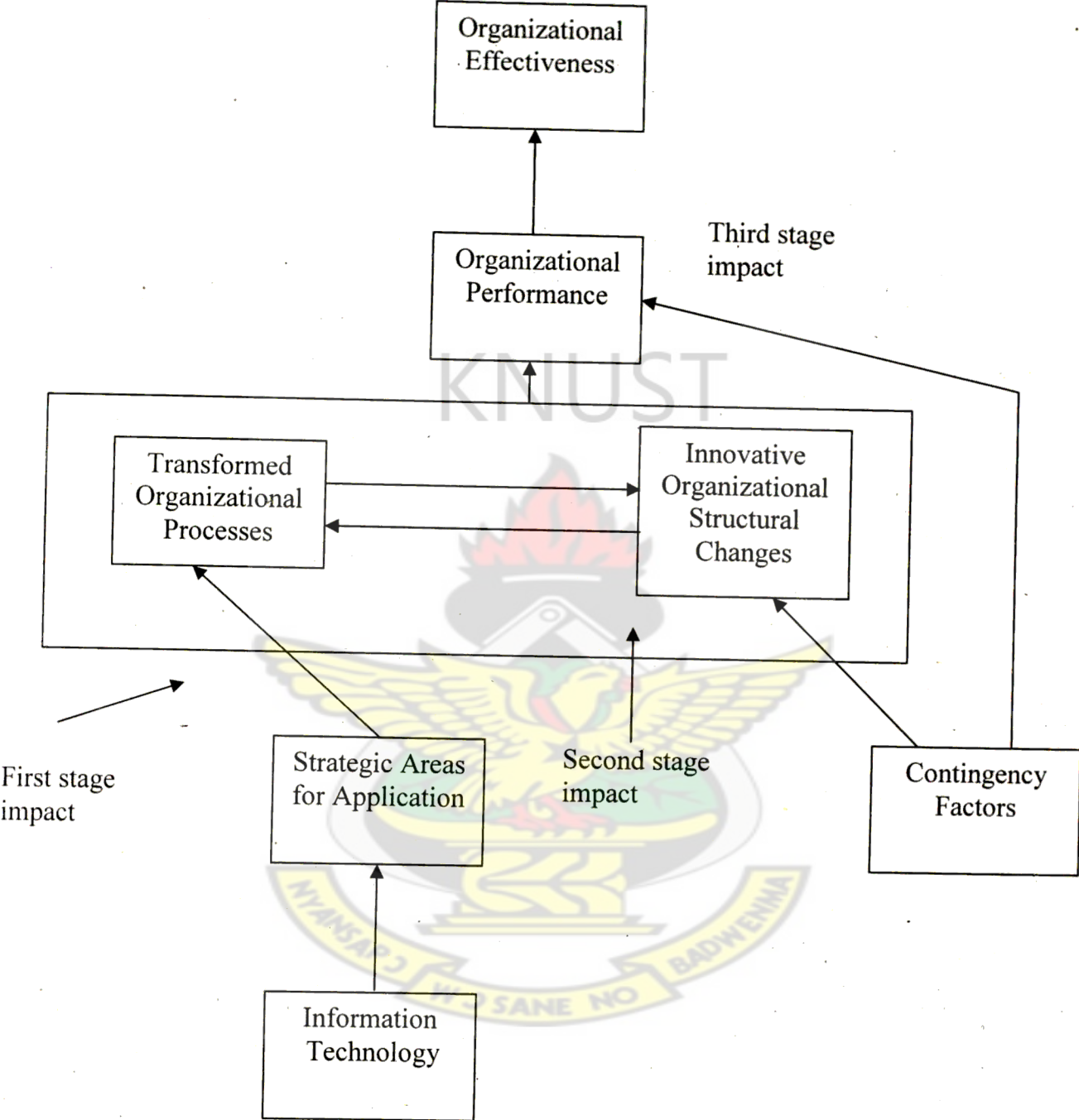
result of the need to revamp certain organizational processes and service delivery patterns in order to meet customer needs and also to remain competitive.

The first stage impact focuses at the organization identifying the weaknesses in its operations and applying the right technologies to these strategic areas in order to improve customer service delivery. This stage is accomplished by giving employees the needed training and education necessary for the take off.

At the second stage, ICT adoption comes as a resource which transforms organizational processes leading to innovative organizational structural changes and improved service delivery patterns which comes as a benefit to both the organization and its customers. This often registers in the form of improve data management system, speed of service, reduction in service cost and improvement in customer satisfaction.

The third stage is the realization of improvement in organizational performance leading to organizational effectiveness. However, this can be impeded by contingency factors such as addition capital investment in ICT, replication of technology by competitors, networked problems etc. as a result of organizational expansion. The case of GCB is the frequent system link disruptions resulting from the centralization of the bank IT operations which has brought the IT Department under serious constrains in the bank's bid to open more branches to be the widest networked bank.

2.7 Conceptual Framework of the Impact of IT on Organizational Performance



Author's Own Construct (2009)

CHAPTER THREE

METHODOLOGY

3.1 Introduction

In this chapter, the researcher discussed the various procedures that were followed to obtain research data. This involved research design, the population, sample and sampling technique, research instruments, pretesting of the instruments, data collection procedure and data analysis.

3.2 Research Design

The design employed for this study was explanatory sample survey. This approach was chosen because the researcher sought to find the causal relationship between ICT and performance by seeking opinions held, processes that were ongoing, and trends which had developed. This design was used for the study because it helps in discovering the real state of affairs or events as they were on the ground.

According Wisker (2001) it specifically looks at the cause and effect relationship between two or more phenomena. It can be immensely helpful when a simple exploratory have come up with a number of variables which confuses rather than clarify the assumptions and hypothesis. This sort of approach is more possible to utilize and employ quantitative methods, especially in a survey, but one could also seek descriptive and explanatory research type by means of case studies and observational data (Frankel and Wallen 1993).

The designed was considered so that the facts on the ground could be discovered and the relationship which exists between the variables could be detected and commented upon. The assessment of the situation was conducted by serving questionnaires to staffs and customers of the bank and also interviewing some key personalities in the bank such as the branch manager, IT officer etc.

The design however had a few weaknesses of which the researcher was cautious and tried to reduce its magnitude. Some questions which may not be understood by the respondents would let them give answers that may not be needed by the researcher. Another problem was the likelihood of the respondents to state something which is convenient to them. Such expected problems were kept low by resorting to the following measures. Firstly, the researcher undertook a pre-testing of the instrument to help come out with questions that might be well understood by the respondents. Secondly the researcher checked if the respondents would state something which they do not know or would not be sure of by carrying out informal interviews or checking other groups' opinions.

3.3 Population Size

According to Frankel and Wallen (1993), a population is the group to which the result of the study is intended to apply. The population is the large group of people who exhibit characteristics that stimulate research work. The target population of the KNUST GCB was a total of 5032 comprising of 20 staffs and 5012 customers.

3.4 Sample

According to Agyedu (1999), the process of sampling makes it possible to limit a study to relatively small portion of the population. A sample is thus a subset of the population and consists of representative group of individuals, objects or events that form the population of the study. Since it was not possible to deal with whole target population due to accessibility, effort was made to sample a reasonable number of people, which gave a representation for the research. A sample size of 140 respondents made of 20 staffs and 120 customers were chosen for the study. This was arrived at as a result of observing sample sizes of similar studies and choosing a similar sample size. According to Denscombe, (2000) as quoted in Vretborn and Astrom, (2008) one common motivation for choosing a certain sample is that it is typical which means that the sample is similar to other potential samples that could have been selected. These respondents were chosen because they were the right people to give the needed information to the researcher. According to Holme and Solvang, (1997) as quoted in Ofori (2008) it is of great importance to find the respondents to get the right information.

3.5 Sampling Technique

Purposive and systematic sampling techniques were employed for this research. Nueman (2000) is of the view that purposive sampling enables the researcher to use value judgment to select cases that will best enable an individual to answer research questions and to meet objectives. He further suggested that the form of sampling is often used when working with very small samples such as in a case study and when the researcher intends to select cases that are particularly informative (ibid).

The researcher went to the bank premise on different occasions to distribute the questionnaires. On each visit, 30 questionnaires were administered customers till the 120 questionnaires were finished whilst that of the staffs was given one-off. This was done to help reduced biases that were likely to crop up.

On the part of the bank's customers, systematic random sampling was used to give each individual an equal chance to respond to the questionnaire. Gay (1987) said systematic sampling technique is used because it guarantees desired representation of the relevant sub groups. Hence this can be said to be a representation of the total population of the study.

3.6 Research Instrument for Data Collection

Two set of questionnaires were designed to collect data from staff members and customers. Gay (1987), states that explanatory research is usually conducted by administering questionnaires. The questionnaires for both staffs and customers comprised of three and four sections respectively.

On the part of the staff at one hand, the section A was used to elicit personal data of respondents. Section B on one hand dealt with set of items designed to elicit information on the view of the staff on the effect of computerization on service quality. Section C covered items which enabled the researcher to evaluate the challenges which the bank faces with the adoption of ICT.

One the part of customers on the hand, section A sought for personal data of respondents. Section B also dealt with set of items to inquire about customers views on

the effect of computerization on service quality. Section C sought to examine the effect of branch network on customer service whilst section D of the questionnaire assess customers views on the bank challenges with the adoption of ICT.

3.7 Procedure for Data Collection

Copies of the questionnaires were personally hand delivered to respondents who were given some few minutes to respond. Prior to the administration of the questionnaire, an introductory letter was collected from the Dean, School of Business KNUST to the Branch Manager, seeking permission for the exercise to be carried out. The procedure involved a lot of movement from one place to another by the researcher. The researcher explained the questionnaires to the respondents thoroughly after copies had been given to them. The purpose was to help the respondents to understand the content of the questionnaire and to do away with ambiguities, suspicions, partiality and also to be able to provide their independent opinions on the questionnaire items given them. Rapport was established between researcher and respondents throughout the distribution and collection periods.

3.8 Pre-Testing of the Instrument

According to Agyedu (1999), "prior to using any instrument, its validity and reliability needs to be assessed to determine its accuracy and consistency" (p.66). To enable the researcher to test the usability of the questionnaires, pre-testing of the instrument was

conducted. 10 questionnaires were given out to some staffs of the bank while 20 were given out to the sampled customers.

3.9 Data Analysis

The collected data were statistically analyzed, using the Statistical Package for Social Sciences Software (SPSS). Representations like tables and figures were used to ensure easy and quick interpretation of data. Data from completed questionnaires was checked for consistency. The open-ended items were grouped based on the responses given by the respondents. Quantifiable data employing tables were used to bring the differences between sets of data values obtained from different respondents. These values were used in the succeeding analysis.

3.10 History of Ghana Commercial Bank Ltd.

Ghana Commercial Bank Ltd. which was established in May 1953 for Ghanaian entrepreneurs is now the largest indigenous Bank with 151 branches nation-wide. The bank's objective among others is to support the private sector and facilitate the nation's economic growth. GCB brings banking to the doorstep of existing and potential customers and extends credit facilities to the private sector.

It is the vision of the bank to be the established leader in commercial banking in Ghana, satisfying the expectations of customers and shareholders, providing a wide range of cost efficient and high quality services nation-wide through the optimization of information technology and efficient branch network. For the achievement of this mission, the bank is committed to: the provision of first class customer service by focusing on their core business/competencies-commercial banking, constant

improvement in the use of information technology, ensuring that staff are well motivated and have a conducive work environment. Also by recruiting and retaining the best human resource to carry out the bank's mandate, applying best practices in internal policies, procedures, processes and service delivery and constant improvement in shareholder's value.

In 1996, the Bank was listed on the Ghana Stock Exchange and it is one of the heavily capitalized companies. In line with its mission, GCB is committed to providing first class customer service and developing long-lasting relationships with its publics. In consonance with GCB's motto - WE SERVE YOU BETTER - the Bank is represented in all the 10 regions and 170 districts of the nation in a bid to make banking accessible to all Ghanaians. GCB is an entity having a large number of branches managed by qualified staff and competent management. The bank is proud of its executive management team, which provides the required leadership for a 2,158-strong workforce. This workforce is currently being moulded, with the Human Resources Division ensuring that key positions are filled with high calibre personnel, while staff is provided with the requisite training to empower and motivate them for efficient service delivery.

Source: <http://www.gcb.com.gh/page.php?pid=1>, 19th May, 2009.

3.11 Profile of KNUST Ghana Commercial Bank

The research being a case study focuses on KNUST Ghana Commercial Bank which is one of the branches of Ghana Commercial Bank Ltd. situated on the campus of Kwame Nkrumah University of Science and Technology. KNUST Ghana Commercial Bank was established in 1960. The purpose was to provide banking services to the university community and its environs such as Ayigya, Bomso, Ayeduase and Kentinkrono. The management team as at that time was composed of the Branch Manager, The Assistant Manager and Heads of Department such as Savings, Current Account and Advances Department.

Among the customers the bank sought to serve was the university (KNUST), university lecturers and workers, students and the general public.

Currently, the bank's business has expanded to the extent that another branch had to be opened at the Tech. Junction to meet the growing demands of customers.

Since its inception, the operations of the bank were purely manual in nature but presently the bank is relying on the optimum use of information technology to satisfy the expectations of its customer.

Source: www.gcb.com.gh, 2008

3.12 Technological History of Banks in Ghana

Over time, technology has increased in importance in Ghanaian banks. Traditionally, banks have always sought media through which they would serve their clients more cost-effectively as well as increase the utility to their clientele. Their main concern has been to serve clients more conveniently, and in the process increase profits and competitiveness. Electronic and communications technologies have been used extensively in banking for many years to advance agenda of banks.

In Ghana, the earliest forms of electronic and communications technologies used were mainly office automation devices. Telephones, telex and facsimile were employed to speed up and make more efficient, the process of servicing clients. For decades, they remained the main information and communication technologies used for transacting bank business.

Later in the 1980s, as competition intensified and the personal computer (PC) receives attention, Ghanaian banks began to use them in back-office operations and later tellers used them to service clients. Advancements in computer technology saw the banks networking their branches and operations thereby making the one-branch philosophy a reality. Barclays Bank (Gh.) and Standard Chartered Bank (Gh.) pioneered this very important electronic novelty, which changed the banking landscape in the country.

Arguably, the most revolutionary electronic innovation in this country and the world over has been the ATM. In Ghana, banks with ATM offerings have them networked and this has increased their utility to customers. The Trust Bank Ghana, in 1995 installed the

first ATM. Not long after, most of the major banks began their ATM networks at competitive positions. Ghana Commercial Bank started its ATM offering in 2001 in collaboration with Agricultural Development Bank. Almost all the banks (with the exception of the rural banks) currently operate ATMs in Ghana. The ATM has been the most successful delivery medium for consumer banking in this country. Customers consider it as important in their choice of banks, and banks that delayed the implementation of their ATM systems, have suffered irreparably. ATMs have been able to entrench the one-branch philosophy in this country, by being networked, so people do not necessarily have to go to their branch to do some banking.

Another technological innovation in Ghanaian banking is the various electronic cards, which the banks have developed over the years. The first major cash card is a product of Social Security Bank, now Socete Generale SSB, introduced in May 1997. Their card, 'Sika Card' is a value card, onto which a cash amount is electronically loaded. In the earlier part of year 2001 Standard Chartered Bank launched the first ever debit card in this country. Its functions have recently been integrated with the customers' ATM cards, which have increased its availability to the public since a separate application process is not needed to access it. A consortium of three (3) banks (Ecobank, Cal Merchant Bank and The Trust Bank) introduced a further development in electronic cards in November 2001, called 'E-Card'. This card is online in real time, so anytime a client uses the card, or changes occur in their account balance, their card automatically reflects the change.

Though ATMs have enjoyed great success because of their great utility, it has been recognized that it is possible for banks to improve their competitive stance and

profitability by providing their clients with even more convenience. Once again ICT was what saved the day, making it possible for home and office banking services to become a reality. In Ghana, some banks started to offer PC banking services, mainly to corporate clients. The banks provide the customers with the proprietary software, which they use to access their bank accounts, sometimes via the World Wide Web (WWW). This is on a more limited scale though, as it has been targeted largely at corporate clients. Ghana Commercial Bank, Ecobank (Gh.) Ltd, Standard Chartered Bank (Gh.) Ltd. and Barclays Bank (Gh.) Ltd and Stanbic Bank (Gh.) are the main banks known to offer PC banking services.

Banks have recognized the internet as representing an opportunity to increase profits and their competitiveness. Currently, only Ghana Commercial Bank Ltd is offering internet banking (i-banking) in Ghana, but others have some well laid plans to start. Ecobank (Gh.) Ltd, Standard Chartered Bank (Gh.) Ltd. and Barclays Bank (Gh.) Ltd, also have plans for doing so in the not-too-distant future.

Telephone banking, has also taken a big leap with its convenience and time. Barclays Bank (Gh.) launched its telephone banking services in August 28, 2002. SSB Bank also launched its "Sikatel" or "SSB Call Centre" (telephone banking) in September 19, 2002. The services available with this system are ascertaining credible information about the bank's products, the customers' complaints, bank statements and cheque book request and any other complaints and inquiry.

The newest technology is the E-zwich which is the brand name for the National Switch, under the new Universal Electronic Payments (UEPS) technology which would ensure

that all commercial banks, rural banks and savings and loans institutions in Ghana implement a common payment platform and a biometric Smartcard which makes it possible for a E-zwich smartcard holder to access their account from any ATM machine.

Currently, Barclays Bank, CAL Bank, Ecobank, SG-SSB, Stanbic Bank and Standard Chartered Bank and others have all their ATMs hooked to the international VISA platform respectively, as well as issue VISA cards. As of today, customers of any of these banks can use the ATMs of any of the other bank (Abor, 2005).



CHAPTER FOUR

RESEARCH RESULTS, ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter deals with presentation, analysis and discussion of the survey research on the effect ICT on performance. Questionnaires and interviews were used to gather information from 140 respondents made up of 120 customers and 20 staffs of KNUST Ghana Commercial Bank, Kumasi. The aim of the study was to determine the effect Of Information Communication Technology on the performance of KNUST Ghana Commercial Bank, Kumasi. This chapter is discussed under five sections based on the response rate and the research questions below.

1. Does computerization improve service quality?
2. Can ICT change customers' perception of a bank service?
3. Does branch network improve customer service?
4. Does ICT adoption come with its challenges?

4.2 Response Rate

Data collected for this research was analyzed using the SPSS. Frequencies and percentages generated by the software were used to interpret the data. The response rate of customers interviewed was 90.8% whilst that of staff was 90%. This agrees with Backstrom and Hursh (1963) who in their opinion presumed that higher response rates

assure more accurate survey results. It is also in line with Neuman (2000) who suggest that a response rate of up to 90% for face to face interviews. Healy (1991) also suggests a response rate of 75% for face to face interviews.

4.3 Demographic Information of Respondents

Table 4.3.1 Gender of respondents

Gender	Number of respondents
Male	78
Females	42
Total	120

Source: Author's Own Construct (2009)

Figure 4.1 shows the gender status of respondents who access the service of the bank. From the questionnaires administered and received, 65% were males whilst 35% were females. This indicates that many men patronize the bank's services as compared to women.

Table 4.3.2 Ages of Respondents

Age range (Years)	Number of respondents
18 – 40	64
41 – 60	35
60 and Above	21
Total	120

Source: Author's Own Construct (2009)

From the table above, 53.4% of respondents were between the ages of 18-40 years, 29.1% between 41-60 years and 17.5% were 60 years and above. This is an indication that the bank's customers are mostly students who definitely fall within the age range of 18-40 years.

Table 4.3.3 Occupations of Respondents

Occupational status	Number of respondents
Employed	33
Self employed	28
Student	57
Others	2
Total	120

Source: Author's Own Construct (2009)

At KNUST GCB, 27.5% of respondents were employed, 23.4% were self employed, 47.5% were students and 1.6% fell under others. This indicates that majority of customers who accesses the bank's services are students and this becomes an added advantage since students are more likely to give a fairer assessment of ICT impact on the bank performance than other customers.

4.4 Quality of Service of GCB With Respect To Computerization

In this section, the researcher tried to analyze the effect of computerization on service quality in meeting customer satisfaction. This is an effort to answer research question one which states: 'Does computerization improve service quality'?

The research delved into the effect of computerization on service quality in meeting customer satisfaction at KNUST GCB. Questionnaire items 4, 5 and 6 in appendix A and B of both customers' and staff questionnaire were used to obtain the required data. This aspect is line with information acquisition and database management which leads to improved customer satisfaction and needs (Kotler et al, 2002)

4.4.1: Customers' Response on Service Quality In Terms of Computerization

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Excellent	3	2.5	2.5	2.5
Very Good	9	7.5	7.5	10.0
Good	71	59.2	59.2	69.2
Bad	37	30.8	30.8	100.0
Total	120	100.0	100.0	

Source: Author's Own Construct (2009)

The above table gives the responses of customers about their view on the bank service quality in terms of the computerization of its operations. 2.5% of the bank's customers believed the computerization the bank's operation to be *excellent*, 7.5% replied *very good*, 59.2% answered *good* and 30.8 % claimed it *bad*.

The figures above indicate that customers accept that computerization has impact on service quality and will wish for constant update of such facilities to enhance better service delivery.

According to Zhen-Wei Qiang et al, (2006) the ability to transfer information seamlessly

through shared electronic files and networked computers would improves the efficiency of business processes such as documentation, data processing, and other back-office functions and increase sophisticated ICT applications such as customer resource management (CRM) and electronic data interchange. This finding comes to support this assertion.

The views of staff of the bank were also solicited on the same research question: ‘Does computerization improve service quality?’The following data were obtained.

4.4.2 Staff’s Response on Service Quality In Terms of Computerization

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Yes	18	90.0	90.0	90.0
No	2	10.0	10.0	100.0
Total	20	100.0	100.0	

Source: Author’s Own Construct (2009)

As to whether the present computerization of GCB has enabled the bank to improve upon its service quality, the following information was obtained from the staff. From the table above, 90% of respondents said that computerization has improved on their customer service with only 10% percent saying the opposite. This indicates that computerization has improved the service delivery of the bank. The major reason given by staff was that, it has enhanced their data management processes and reduced manual entries of data. This view comes in to support that of customers’ in Table 1. The above finding could imply that the bank is at least abreast with modern banking state of art

technology.

4.4.3 Staffs Response on Computerization and its Reduction on Delays and Queues

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	13	65.0	65.0	65.0
No	5	25.0	25.0	90.0
Somehow	2	10.0	10.0	100.0
Total	20	200.0	100.0	

Source: Author's Own Construct (2009)

Concerning computerization and its effect on queuing and delays, 65% of the staff believed computerization has helped reduce queues and delays at the bank premise whiles 25% disagreed with only 10% remaining undecided. This indicates that most of staffs believe computerization has helped reduced queues and delays at the bank. This comes to refute the allegation that the bank is noted for queuing and delays.

4.4.4 Customers' Response on Computerization and Its Reduction on Delays and Queues.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	23	19.2	19.2	19.2
No	69	57.5	57.5	76.7
Somehow	28	23.3	23.3	100.0
Total	120	100.0	100.0	

Source: Author's Own Construct (2009)

Asking customers as to whether the computerization of the bank's operation has reduced queuing and delays, 19.2% agreed whilst 57.5% disagreed, with 28% remaining uncertain. This indicates that computerization has not impacted much in that direction. And this comes in sharp contrast with the proposition of the staffs. Hence management needs to consider customers' concern and get their loopholes sealed.

4.4.5 Staff's Response on Computerization and Reduction in Data Entry Processes and Procedures.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	13	65.0	65.0	65.0
No	3	15.0	15.0	80.0
Somehow	4	20.0	20.0	100.0
Total	20	100.0	100.0	

Source: Author's Own Construct (2009)

When staff were asked to comment if computerization has helped reduce data entry processes and procedures at the bank, 65% of customers said yes whilst 15% answered no, with 20% remaining undecided. This indicates that computerization has improved data entry process and would help save time in banking transactions.

4.4.6 Customers' View on Computerization and Reduction in Data Entry Processes and Procedures.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	65	54.2	54.2	54.2
No	24	20	20	74.2
Somehow	31	25.8	25.8	100
Total	120	100.0	100.0	

Source: Author's Own Construct (2009)

When customers were asked to comment if computerization has helped reduce manual data entry processes at the bank, 54.2% of customers said yes whilst 20% answered no, with 25.8% remaining uncertain. These figures from customers come to support staffs stance that computerization has helped improve data entry processes at the bank.

4.5 Customers Perceptions of KNUST GCB Customer Service.

The choice of a bank by an individual may depend on several factors such as its corporate image, technological status, span of network, service quality among other factors. In this section, the researcher plans to treat research Question 2 which states: "Can ICT change customers' perception of a bank service?" and Questionnaire item 8, 9 and 10 on appendix B were used to solicit the response. The tables below are various questions and data obtained in response to the research question 2.

4.5.1 Customer Satisfaction With Respect To GCB Customer Service

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	24	20	20	20
No	69	57.5	57.5	77.5
Somehow	27	22.5	22.5	100
Total	120	100	100	

Source: Author’s Own Construct (2009)

When customers were asked as to whether they are satisfied with the customer service of the bank, 20% responded positively, whilst 57.5% responded negatively with 22.5% remaining undecided. This indicates that most customers are not satisfied with the bank’s customer services. Most customers complained about poor customer relations of the bank and also the bank failing to handle their complaints when lodged.

4.5.2 Customers Perception of GCB Customer Relations

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Excellent	12	10.0	10.0	10.0
Average	50	41.7	41.7	51.7
Poor	58	48.3	48.3	100.0
Total	120	100.0	100.0	

Source: Author’s Own Construct (2009)

In finding out as to how the customers will rate the customer relations of the bank, 10% of customers rated it excellent whilst 41.7% rated it average, with 48.3% rating it as

poor. This indicates that the customer relation of the bank is poor as this revelation comes to defeat the bank's motto: "we serve you better". This can deter customers from accessing new products of the bank especially those who finds it difficult to change their bank.

4.6 Branch Network of GCB and Its Impact on Customer Service

In this section, the researcher plans to treat research Question 3 which states: "Does branch network improve customer service?" and Questionnaire item 7 and, 8 on appendix B were used to solicit the response. The table shows the data generated from customers' response.

4.6.1 Customers' response on GCB Network and its effect on customer service

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	9	7.5	7.5	7.5
No	72	60	60	67.5
Somehow	39	32.5	32.5	100.0
Total	120	100.0	100.0	

Source: Author's Own Construct (2009)

When customers were asked to comment if they could access all the services of the bank at its other networked branches across the country, only 7.5% answered yes whilst 60% said no, with 32.5% remaining undecided.

This indicates that the bank has not fully achieved a networked status as these obstacles are absent in other networked banks in the advanced countries like Europe and America.

Customers were of the view that apart from cash deposit and ATM withdrawal services, other services like cheque book requisition, statement requisition, cheque withdrawals etc has not been possible at the other branches of the bank. Customers claimed they had been many times referred to their main branch for such services. To rectify these problems, must management must improve upon their information systems to enable free flow of information from one end to the other.

4.7 Problems and Challenges with ICT Adoption by GCB

In this section, researcher sought to find problems confronting both customers and management with the adoption of ICT by the bank. The objective here was to answer the research question: “Does ICT adoption comes with its challenges?” questionnaire items 9 and 12 on appendix A and questionnaire items 7 and 10 on appendix B.

4.7.1 Customers’ response to the operation of the Bank ATM Service.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Excellent	3	2.5	2.5	2.5
Good	39	32.5	32.5	35
Poor	78	65	65	100.0
Total	120	100.0	100.0	

Source: Author’s Own Construct (2009)

When customers were asked to rate the performance of the bank’s ATM service, only 2.5% perceived it to be excellent whilst 32.5% said it was good, with 78% claiming it to be poor. This indicates that the bank’s ATM service has not adequately improved

service quality and could be a possible cause of queuing at the bank premise. Customers who were not impressed with its operation gave the following reason:

- 1) ATM terminal often breakdown and it take several days for it to be repaired.
- 2) Application for ATM cards takes several months to come.
- 3) Issuance of faulty ATM cards
- 4) Withdrawal discrepancies etc.

These flaws with ATM could be one of the reasons of customers failing to patronize the new E-zwitch Card technology. Customers suggested more ATMs to be added and possibly sited at the Faculty area of KNUST where most of the bank customers can be found in the day time.

4.7.2 Staffs' Response to the operation Bank ATM Service.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Excellent	2	10	10	10
Good	9	45	45	55
Poor	9	45	45	100.0
Total	20	100	100	

Source: Author's Own Construct (2009)

On the part of staffs concerning the ATM service of the bank, 10% of the staffs said it was excellent whilst 45% replied it was good, with 45% claiming it to be poor. The view of 45% of staffs claiming that ATM service is poor exposes the weaknesses of the service. The key reason many gave were the frequent system link failure from their IT Headquarters in Accra. Whiles other also cited some of the problems already mentioned

by customers above. Their views come to affirm that of customers and hence the bank needs to eliminate this flaw by creating more IT substation to reduce the incident of network failure.

According to McAndrews (2003), automated teller machines should offer significant benefits to both banks and their depositors by enabling depositors to withdraw cash at more convenient times and places than during banking hours. For quality of service is an essential factor involved in a service provider's ability to attract more customers. Backman & Veldkamp (1995).

4.7.3 Customers patronage of GCB Internet Banking Service

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Yes	29	24.2	24.2	24.2
No	91	75.8	75.8	100.0
Total	120	100	100	

Source: Author's Own Construct (2009)

When customers were asked if they also access the bank's services through their internet banking service (Commernet Plus) apart from their physical presence at the bank premise, 24.2% said yes whilst 75.8% claimed no. This indicates the internet banking service of the bank has not been receiving much patronage. Among the reasons given by customers who did not access the service are as follows:

- 1) Lack of basic knowledge of computers limits their access to the facility
- 2) Fear of transacting business with the wrong person
- 3) Some see it to be time consuming with slow nature our internet connectivity.
- 4) Others find it difficulty in trusting a completely mechanized system like internet banking in the case of financial matters.

Internet banking requires the development and implementation of a sound security procedure. This involves designing effective methods via which users can be authenticated in a remote environment. Specifically for Internet banking there is a real need for a way uniquely to identify and authenticate users without the possibility of their authenticity being cloned. Some technologies in use have been presented for meeting the security requirements for national, regional and global Internet banking assurance (Hutchinson and Warren, 2003).

4.7.4 Staff View on Customers' patronage of GCB Internet Banking Service

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
High	1	5	5	5
Average	3	15	15	20
Low	16	80	80	100
Total	20	100	100	

Source: Author's Own Construct (2009)

Staff when asked to rate customers' usage of the bank Internet Banking Service, 5% said it was high whilst 15% answered it was average, with 80% claiming it to be low. This indicates that customers' patronage is low and these figures come to support the view of the customers themselves. Among the factors given by some of the staff for low patronage are as follows:

1. Most customers are addicted to teller service
2. Customers' of loose security and system errors in transacting business online.

Leelapongprasut et al. (2005) study on the internet banking service in Thailand, also found that reliability, namely the security system and information accuracy was the most important perspective for the user.

3. Undeveloped nature of internet banking culture in Ghana and others

Management can improve upon the internet banking culture by reducing cost of transacting business online and other incentives to entice customers. This can change customers' attitude towards innovation way of transacting business. As Internet banking should be viewed as an operational rather than a competitive instrument O'Reilly et al. (2003).

CHAPTER FIVE

SUMMARY FINDING, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the overview of the study, summary of findings, conclusions and recommendations.

5.1 Introduction

The main objective of the study was to examine the effect of ICT of the performance of financial institutions: case study of KNUST Ghana Commercial Bank.

Specifically, the study sought to:

1. To investigate service quality of GCB with respect to computerization of its services.
2. To examine customers' perceptions of the bank's service delivery.
3. To assess the effect of the branch network to its service quality.
4. To identify the challenges faced by the bank with its ICT adoption.

5.2 Major Findings

5.2.1 Service Quality of GCB With Respect To Computerization.

1. Computerization of banking operation has improved the operations of the bank in the area of data management and security.
2. However the computerization of the bank operation has not been able to reduce queues and delays at the banking premises.

3. Queuing at the bank usually become intense when KNUST students resume from vacation break.
3. There has been hand counting of cash by tellers after they have counted it with the machine which often causes delays.
4. There has been a frequent system link disruptions which often brings banking transactions to a temporal halt.
5. Quality of service with respect to computerization is viewed from different angles by customers and staffs. Whereas customers look at speed of service delivery, staffs look at efficient data management system.
6. Some staffs perceived queuing to be normal in the banking transaction processes.
7. Computerization has reduced data entry processes at the bank as both tellers and customers do not do much fill-ins. This is in agreement with Zhen-Wei Qiang et al, (2006) who claimed that the ability to transfer information seamlessly through shared electronic files and networked computers would improves the efficiency of business processes such as documentation, data processing, and other back-office functions and increase sophisticated ICT applications such as customer resource management (CRM) and electronic data interchange. This finding comes to buttress his assertion.

5.2.2 Customers' Perceptions of the Bank Service Delivery.

1. Most customers have a bleak perception about the general services of the bank. This stems from the poor customer relations of the bank.
2. Customers are not curious in finding out about new product packages of the bank.

3. There could be possible future exit of customers if the bank does not respond to customers' complains with tact and professionalism.
4. Some customers seemed content with the bank's service as they are of the belief that a superior service can hardly be provided by a government bank.
5. Customers' perception of the bank is not formed alone from the nature of services rendered their bank, but also from what other competing banks are doing which are missing in their bank.

5.2.3 Effect of The Bank's Network to Its Service Quality.

1. The networking of the bank to its other branches has made little impact. Customers were of the view that apart from cash deposits and ATM cash withdrawals other services like statement requisition, cheque book requisition, account transfers and others could not be provided at these GCB branches; as they were many times referred to their main branch for such services.

5.2.4 Challenges Faced By the Bank with Its Adoption of ICT

1. The bank's only ATM terminal often breakdown and usually take a long time to be repaired.
2. Other ATM service flaws such as withdrawal discrepancies, issuance of faulty cards and long time for applied ATM cards to arrive deter most customers from accessing the service.
3. There is also frequent system link failure or disruptions which often lead long queues and delays during banking transactions.

4. Staffs claimed customers has limited knowledge about the bank internet banking service (Commernet Plus) and its benefits and hence do not access them to their advantage. Goodstadt, (1990) contends the importance of product knowledge resulted in a reassessment of service delivery. He concludes that quality of service is the differentiator.
5. Customers who are aware of the service but not accessing the service claimed to be limited by rampant internet fraud, unstable network connectivity, and the consequence of being made liable and responsible for any error which may occur during online transaction. Attaran (2000), contends that in practice, banks normally issues internet banking contracts or agreement with limitations on their liability, noting the bank is not responsible for any loss caused by the internet banking service or customer use of the service.
6. Also, in-depth interviews demonstrate that there are still some serious barriers to adoption of internet banking by GCB Customer. The barriers are stronger for the non-users, but users are entirely not comfortable with internet banking, and have not switched most of their transactions to the internet yet.
7. It was also discovered that the bank has a centralized IT Operation Department at GCB Tower House in Accra which controls all the operations of the bank and its networked branches. This has put the IT Department under serious constraint in its effort to network these old and newly branches consequently leading to poor network connectivity and frequent system link failures.

8. The bank has to constantly update its banking software in order to meet the growing demands of its customers and also to remain competitive in the banking industry. The bank is currently undergoing software upgrading process from Flexcube 4.5 to *Flexcube 6.9*. This is in agreement with Carr (2003) who is of solemn conviction that though ICT has become a strategic asset which helps improve business processes and change the function of markets, it is necessary for organizations to continue in their efforts of developing and implementing the up-to-date technology.

5.3 Recommendations

1. The bank should focus customer needs and meet their satisfaction by addressing their complaints in order to change their wrong perception towards it. According Roth (1992), service quality is a key to gaining competitive advantage, for it is difficult to find today a bank that has not initiated some kind of service quality improvement program.
2. More ATM terminals located at KNUST campus presumably the Faculty area where the bulk of the bank's customers can be found in the normal working days.
3. Shared networks could be used to increase the convenience of ATM by its customers by enabling the bank's customers to carry out banking transactions over a wider geographic area than would be possible with a proprietary network.
4. Management should identify and eliminate problems that prevent other services from being rendered to customers at other networked branches.

5. The bank should nurse the internet banking culture in their customers in order to reduce customer physical presence at the bank which often results in queues and delays during transaction. But to boost customers' interest, Zugeldar et al (2000), mentioned that customer protection is the major legal issue associated with internet marketing. Among other things customer protection issues can cover unfair and deceptive trade practices by suppliers, unauthorized access and usage by others, such as hackers, or system failures. Customer protection is important in building online customer confidence because there is no face to face contact, and there is a great possibility (at least in customer perceptions) for having problems or making mistakes via the web. With lack of specific laws governing internet banking, bank customers hesitate to use it (Larpsiri 2002).

6. Ghana Commercial Bank should decentralize its IT operations by creating more substations in individual regions. This will help improve efficient network connectivity and reduce pressure on their main server thus reducing system link disruptions which characterize the bank operations.

7. The bank should also understudy the IT operations of some expatriate banks like Standchart and Barclays in order learn from their success story.

8. The bank should constantly update its information communication technologies in order to improve on its service quality.

5.4 Conclusions

From the study it was revealed that the adoption of ICT per se does not guarantee service quality but it depends on its efficient application to meet customer needs. In itself can pose problems smooth service quality delivery especially in situation where poor network connectivity can prevent customers from accessing a bank service either from their networked branches or ATM terminals.

From all indications, ICT presents great potential for business process reengineering to meet changing customer needs. Investment in information and communication technology should form an important component in the overall strategy of banking institutions to ensure effective and efficient performance. It is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services, or otherwise loose out to their competitors.

Generally speaking, ICT adoption is both beneficial and challenging. Future studies should continue to advance the understanding ICT impacts and how it can efficiently be utilised to meet customer needs. ICT as a modern resource should be essential in providing a service but not to become an obstacle to its smooth delivery.

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APPENDIX A (QUESTIONNAIRES FOR KNUST GCB CUSTOMERS)

Kwame Nkrumah University of Science and Technology

School Of Business

This study seeks to elicit information from customers of Ghana commercial bank limited on the on effect of ICT on the performance of financial institutions. Please note that this study is purely academic. Your response will therefore be treated very confidential. Please remain anonymous in your response to the items on the questionnaire.

Section A: Personal Data

1. **Gender:** (a) Male ☐ (b) Female ☐
2. **Age:** (a) 18 – 40 ☐ (b) 41 – 60 ☐ (c) Above 60 ☐
3. **Occupation:** (a) Employed ☐ (b) Unemployed ☐
(c) Student ☐ (d) Others, Specify.....

Section B: Computerization of Banking Services and Service Quality

4. *What is your perception on the bank's service quality in terms of computerization?*
(a) Excellent ☐ (b) Very Good ☐ (c) Good ☐ (d) Bad ☐
5. *Has computerization reduced delay and queuing at banking premise?*
(a) Yes ☐ (b) No ☐ (c) Somehow ☐
6. *Has computerization help reduced data entry processes and procedures?*
(a) Yes ☐ (b) No ☐ (c) Somehow ☐

Section C: Effect of Networking on Customer Service

7. *Are you able to access every service at other GCB networked branches?*
(a) Yes [] (b) No [] (c) Somehow []

8. *If your answer to Q.7 is no, give your reason(s)*
.....
.....

Section D: ICT Adoption and Its Challenges

9. *How will you rate the performance of the bank ATM service?*
(a) Excellent [] (b) Good [] (c) Poor []

10. *If your answer to Q.9 is (c), give your reason(s)*
.....

11. *Does the bank need additional ATM terminal on campus?*
(a) Yes [] (b) No [] (c) Somehow []

12. *How will you rate customer usage of the bank Internet Banking Service?*
(a) High [] (b) Average [] (c) Low

13. *If your answer to Q. 12 is (C), give reason(s)*.....
.....

14. *How will you rate the overall performance of GCB?*
(a) Very High [] (b) High [] (c) Low []

15. *What suggestions do you have to help GCB to improve upon its customer services?*
.....
.....

APPENDIX B (QUESTIONNAIRES FOR KNUST GCB STAFF)

Kwame Nkrumah University of Science and Technology
School Of Business

This study seeks to elicit information from KNUST Ghana Commercial Bank staff on the effect of ICT on the performance of the bank. Please note that this study is purely academic. Your answer will therefore be treated very confidential. Please remain anonymous in your response to the items on the questionnaire. Thank you for your cooperation.

SECTION A: APERSONAL DATA

1. **Gender:** (a) Male [] (b) Female []
2. **Age:** (a) 20 – 40 [] (b) 41 – 59 [] (c) 60 and above []
3. **Position Held:** (a) Manager [] (b) IT officer [] (c) Accountant []
(d) Cashier [] (e) Others (specify).....

Section B: Impact of Computerization on Bank’s Service Quality

4. **Has computerization made your services quality and reliable?**
(a) Yes [] (b) No []
5. **Has the computerization help reduced delays and queues at the bank?**
(a) Yes [] (b) No [] (c) Neutral []
6. **Has computerization helped reduce data entry processes and procedure?**
(a) Yes [] (b) No [] (c) somehow []

Section C: ICT Adoption and Challenges facing GCB

7. *How will you rate the performance of the bank ATM service?*

(a) Excellent [] (b) [] Good (c) Poor []

8. *If your answer to Q.7 is (c), give your reason(s)*

9. *Does the bank need additional ATM terminals on campus?*

(a) Yes [] (b) No [] (c) Somehow []

10. *Do customers use the bank Internet Banking Service?*

(a) Yes [] (b) No [] (c) somehow

11. *If your response to Q. 12 is no, give reason(s).....*

12. *How will you rate the overall performance of KNUST GCB?*

(a) Very High [] (b) High [] (c) Low []

13. *What suggestions do you have to help GCB to improve upon its customer service?*