UNIVERSITY OF ZIMBABWE

GRADUATE SCHOOL OF MANAGEMENT

MASTERS DEGREE IN BUSINESS ADMINISTRATION

TOPIC

EVALUATING THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON THE PROVISION OF BANKING SERVICES IN ZIMBABWE 2011 – 2012: THE CASE OF INFRASTRUCTURE DEVELOPMENT BANK OF ZIMBABWE.

BY

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A DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZIMBABWE IN PARTIAL FULFILLMENT OF THE MASTERS DEGREE IN BUSINESS ADMINISTRATION (MBA)

SUPERVISOR: DR N. KASEKE

SEPTEMBER 2012
DECLARATION

I, Ephias Chitsa, do hereby declare that this dissertation is a result of my own investigation and research, except to the extent indicated in the acknowledgements, references and by comments indicated in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.

Name: Ephias Chitsa          Date: 28 September 2012

............................................
Student’s Signature

Supervisor: Dr. N. Kaseke     Date: 28 September 2012

............................................
Supervisor’s Signature
DEDICATION

This work is dedicated to the Almighty God for His strength and guidance that I continue to receive from him. It is also dedicated to my wife, Loveness and children Tadiwanashe and Kunashe.
ACKNOWLEDGEMENT

This dissertation would not have been possible without the guidance and help of several individuals who in one way or another contributed and extended their valuable assistance in the preparation and completion of this study.

First and foremost, my gratitude goes to Dr. N. Kaseke who supervised this dissertation. I say a big thank you and God bless you and your family.

My greatest appreciation also goes to the staff and customers of Infrastructure Development of Zimbabwe, who took time of their busy schedules and assisted in the completion of my questionnaires. God bless you all.

I am also grateful to my mother Mrs. N. Chitsa, for her encouragement and support all this while.

My deepest appreciation goes to my wife Mrs. Loveness Chitsa for her input, encouragement and immense support throughout my course of study and thesis.

I remain grateful to all persons who in diverse ways contributed to the success of this project through their suggestions and inputs. God bless you all abundantly.
**ABSTRACT**

The purpose of the study is to evaluate the impact of information and communication technology (ICT) on provision of banking services in a development bank in Zimbabwe. Different sources of literature, theories and empirical evidence relating to ICT and banking services were initially evaluated. The research was based on both quantitative and qualitative methods. The research strategy was a case study and primary data was collected through a survey. The results of the study suggest that ICT positively impacted provision of banking services at the Infrastructure Development Bank of Zimbabwe (IDBZ). The study concluded that banks need to invest in ICT as it has appreciable positive effect on service delivery thus gaining competitive advantage.
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CHAPTER ONE

1 INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction
This research evaluates the impact of information and communication technology on the provision of banking services in a development bank in Zimbabwe. According to Alhaji and Rosmaini (2012), information and communication technology has become the heart of banking sector. Banking industry is the heart of every robust economy. If it collapses so will the economy, and this is absolutely evident from the current recession, in European banks’ crises, and in turn. Developments in information and communication technology have resulted in new ways of doing business in Zimbabwe. The usage of information technology (IT), broadly referring to computers and peripheral equipment, has seen tremendous growth in service industries in the recent past. The most obvious example is perhaps the banking industry, where through the introduction of IT related products in internet banking, electronic payments, security investments, information exchanges (Berger, 2003), banks now can provide more diverse services to their customers. The nature and profile of banking services have changed due to technology based banking solutions that go with the changing times. Banks have to be particular on the quality of services provided to their customers. Differentiation and competitive advantage is attained through offering a unique and memorable service to a customer for renewed and sustainable business growth. The quality of services is measured by the service experience the customer encounters at a bank and all this builds from the way internal processes are managed. Technology has had an effect on how this is done. This chapter reviews the background of the study, problem statement, research objectives, research questions, research hypothesis, research justification, research scope and finally the organisation of the study.
1.2 Background

1.2.1 Banking Industry in Zimbabwe

The banking sector in Zimbabwe is well diversified. As at 31 December 2011, there were 26 banking institutions including POSB, 16 licensed Asset Management companies and 157 Micro-finance institutions under the supervision of the Reserve Bank of Zimbabwe (RBZ) as shown in Table 1 below (Monetary Policy 2012, RBZ). The Infrastructure Development Bank of Zimbabwe (IDBZ) therefore competes with all the above mentioned financial institutions. The IDBZ is a statutory bank established by act of parliament so it is not under the supervision of the RBZ.

Table 1.1: Structure of the Banking Sector of Zimbabwe, January 2012

<table>
<thead>
<tr>
<th>Type of Institution</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Banks</td>
<td>17</td>
</tr>
<tr>
<td>Merchant Banks</td>
<td>4</td>
</tr>
<tr>
<td>Finance Houses</td>
<td>0</td>
</tr>
<tr>
<td>Discount Houses</td>
<td>0</td>
</tr>
<tr>
<td>Building Societies</td>
<td>4</td>
</tr>
<tr>
<td>Savings Bank</td>
<td>1</td>
</tr>
<tr>
<td>Micro-Finance Banks</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26</strong></td>
</tr>
<tr>
<td>Asset Management Companies</td>
<td>16</td>
</tr>
<tr>
<td>Micro-finance Institutions</td>
<td>132</td>
</tr>
<tr>
<td>Development Bank</td>
<td>1</td>
</tr>
</tbody>
</table>

*Source: Reserve Bank of Zimbabwe Monetary Policy (January, 2012)*

The introduction of multicurrency system in February 2009 and the eventual relaxation of various controls ushered in a new business friendly environment that is a direct contrast to hyperinflationary and overly regulated climate that prevailed in the previous years.

The transition to multicurrency system also presented many challenges to companies and banks alike, as the cost to doing business immediately
switched to dollarization while revenue streams where still at infancy. Business models that had adopted defensive tactics against hyperinflation environment of “build and protect strategy” in order to safeguard their capital had to transform and unwind their defensive position and release capital to the core functions.

In addition, the banking sector was and is still faced with a host of other challenges, key among them:

- Core deposits are of short term nature while funding needs are medium to long-term;
- Absence of lender of last resort and interbank market;
- Lack of available external lines of credit;
- High perceived country risk impacting on cost of credit.

Given the Zimbabwean environment, for banks to be competitive they need to have effective cost structure which can come as a result of adoption of ICT. Adoption of ICT has influenced the content and quality of banking operations. According to Obasan (2011), ICT presents great potential for business process reengineering of banks. Investment in information and communication technology should form an important component in the overall strategy of banking operators to ensure effective performance. It is imperative for bank management to intensify investment in ICT products to facilitate speed, convenience, and accurate services, or otherwise lose out to their competitors.

1.2.2 Infrastructure Development Bank of Zimbabwe

The Infrastructure Development Bank of Zimbabwe (IDBZ) was created through the transformation of Zimbabwe Development Bank (ZDB) by amending the Zimbabwe Development Bank Act to Infrastructure Development Bank of Zimbabwe Act [chapter 24:14] as well as broadening its operations.
The IDBZ was set up to mobilize and provide debt and equity capital to public and private institutions involved in infrastructure development. The Bank focuses its interventions in the sectors of energy, housing, water, agriculture, transport, information and communications technology, as well as any other infrastructure critical for national development. In addition to mobilising funds IDBZ also plays an important role in promoting Public Private Partnerships (PPPs) and projects management advisory services. With its main emphasis being on infrastructure finance, it is expected that over time the Bank will evolve into a fully fledged development finance institution, where the short term banking activities will be mainly retained for purposes of bridging the gap, as well as covering the Bank’s day-to-day operational costs.

The Government of Zimbabwe is the major shareholder, with 85.31% of the shares, followed by the Reserve Bank of Zimbabwe with 14.30%. The balance of shares is held by local and foreign institutional investors. It is the intention of the Bank to retain foreign shareholders, as they can assist the Bank in its efforts to raise foreign lines of credit, which are critical to its resource mobilization program. Most infrastructure projects in Zimbabwe are capital intensive, hence the importance of mobilizing foreign lines of credit. The Bank also intends to bring on board additional local and foreign shareholders in order to diversify and strengthen its shareholder base (IDBZ Strategic Plan 2011 – 2015)

Currently IDBZ has offices in Harare and Bulawayo and with increase in business it will expand into other cities.

The **Vision** for IDBZ is: ‘To be the preferred provider of development and related finance for economic growth and social transformation in Zimbabwe and the region’

The **Mission** of the Bank is: ‘To champion infrastructure development through effective mobilization of appropriate resources for sustainable socio-economic development’.
The Bank will be guided by the following **Values:**

- Integrity
- Professionalism
- Team Work
- Service Orientation
- Social Responsibility

The Bank adopted the following objectives as guided by the IDBZ Act [Chapter 24:14];

(i) To promote economic development growth, and to improve the living standards of Zimbabweans, through the development of infrastructure including, but not limited to, roads, dams, water reticulation, housing, sewerage, technology, energy, amenities and utilities;

(ii) To develop institutional capacity in undertakings and enterprises of all kinds in Zimbabwe; and

(iii) To support development projects and programmes in all sectors of the Zimbabwean economy.

This will be achieved by;

a) Providing capital for the expansion or modernization of existing infrastructure, undertakings and enterprises or the creation or development of the new infrastructure, undertakings and enterprises;

b) Mobilising internal and external resources from the public and private sectors;

c) Facilitating the participation of the private sector and community organizations in development projects and programmes;

d) Appraising, planning and monitoring the implementation of development projects and programmes; and

e) Providing technical assistance with regard to identification, preparation, evaluation, financing, implementation and management of development projects and programmes.
<table>
<thead>
<tr>
<th>Product</th>
<th>Market Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Funds Transfer</td>
<td>All groups of customers i.e.</td>
</tr>
<tr>
<td>(Local and International)</td>
<td>• Individuals,</td>
</tr>
<tr>
<td></td>
<td>• Government Departments, Parastatals,</td>
</tr>
<tr>
<td></td>
<td>• Large Corporates,</td>
</tr>
<tr>
<td></td>
<td>• Small-to-Medium Enterprises (SME’s)</td>
</tr>
<tr>
<td></td>
<td>• Non Profit making Organisations (Government Organisations (NGO’s), churches etc)</td>
</tr>
<tr>
<td>Foreign Currency Accounts</td>
<td>All groups of customers i.e.</td>
</tr>
<tr>
<td></td>
<td>• Individuals;</td>
</tr>
<tr>
<td></td>
<td>• Government Departments, Parastatals;</td>
</tr>
<tr>
<td></td>
<td>• Large Corporates; and</td>
</tr>
<tr>
<td></td>
<td>• Small-to-Medium Enterprises (SME’s); and</td>
</tr>
<tr>
<td></td>
<td>• Non Profit making Organisations (Government Organisations (NGO’s), churches etc)</td>
</tr>
<tr>
<td>Short and Medium Term Loans</td>
<td>• SME’s;</td>
</tr>
<tr>
<td></td>
<td>• Large Corporates; and</td>
</tr>
<tr>
<td></td>
<td>• Parastatals</td>
</tr>
<tr>
<td>Long Term Loans</td>
<td>• Large Corporates; and</td>
</tr>
<tr>
<td></td>
<td>• Parastatals</td>
</tr>
<tr>
<td>Project Management and Advisory</td>
<td>• Government Departments, Parastatals;</td>
</tr>
<tr>
<td>Services</td>
<td>• Large Corporates; and</td>
</tr>
<tr>
<td></td>
<td>• Non Profit making Organisations (Government Organisations (NGO’s), churches etc)</td>
</tr>
<tr>
<td>Treasury Investments</td>
<td>All groups of customers i.e.</td>
</tr>
<tr>
<td></td>
<td>• Individuals,</td>
</tr>
<tr>
<td></td>
<td>• Government Departments, Parastatals,</td>
</tr>
<tr>
<td></td>
<td>• Large Corporates,</td>
</tr>
<tr>
<td></td>
<td>• Small-to-Medium Enterprises (SME’s)</td>
</tr>
<tr>
<td></td>
<td>• Non Profit making Organisations (Government Organisations (NGO’s), churches etc)</td>
</tr>
<tr>
<td>Capacity building</td>
<td>• Government Departments and Parastatals,</td>
</tr>
</tbody>
</table>

*Source: IDBZ Strategic Plan 2011-15*

Although IDBZ is facing the challenge of raising long term finance through lines of credit, issuing of bonds and capitalisation, it is monitoring and implementing infrastructure projects for the Government. Table 1.3 below shows the Government projects under the management of IDBZ.
Table 1.3: Infrastructure Projects Under the IDBZ Management as at 30 June 2012

<table>
<thead>
<tr>
<th>Project</th>
<th>Value (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Railways Zimbabwe – Rehabilitation of the railway lines</td>
<td>20,000,000.00</td>
</tr>
<tr>
<td>Ministry of National Housing &amp; Social Amenities – Housing projects in various cities and towns</td>
<td>9,000,000.00</td>
</tr>
<tr>
<td>Zimbabwe National Road Authority – Harare-Gweru Road Dualisation</td>
<td>1,500,000.00</td>
</tr>
<tr>
<td>Zimbabwe Power Company – Hwange Power Station</td>
<td>20,000,000.00</td>
</tr>
<tr>
<td>Zimbabwe Power Company (various power generating projects)</td>
<td>35,850,000.00</td>
</tr>
<tr>
<td>Zimbabwe Power Company- Kariba Power Station</td>
<td>7,500,000.00</td>
</tr>
<tr>
<td>Civil Aviation Authority of Zimbabwe – J. M. Nkomo Airport</td>
<td>8,500,000.00</td>
</tr>
<tr>
<td>Civil Aviation Authority of Zimbabwe – Harare International Airport</td>
<td>7,000,000.00</td>
</tr>
<tr>
<td>Civil Aviation Authority of Zimbabwe – Buffalo Range Airport</td>
<td>500,000.00</td>
</tr>
<tr>
<td>Zimbabwe National Water Authority -Tokwe Murkosi Dam</td>
<td>38,200,000.00</td>
</tr>
<tr>
<td>Zimbabwe National Water Authority – Gwai-Shangani Dam</td>
<td>5,000,000.00</td>
</tr>
<tr>
<td>Zimbabwe National Water Authority – Beitbridge Water Supply</td>
<td>10,000,000.00</td>
</tr>
<tr>
<td>Local Authorities (various)</td>
<td>63,000,000.00</td>
</tr>
<tr>
<td>National Railways Zimbabwe - Road Motor Services</td>
<td>1,000,000.00</td>
</tr>
<tr>
<td>Zimbabwe National Water Authority – Bubi-Lupane</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Zimbabwe National Water Authority – Mutange Dam</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Zimbabwe National Water Authority – Wenimbi Dam</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Central Registry Building Construction</td>
<td>5,500,000</td>
</tr>
<tr>
<td>Transmedia</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Zimbabwe National Water Authority – Mtshabezi pipeline</td>
<td>1,500,000</td>
</tr>
<tr>
<td><strong>TOTAL.</strong></td>
<td><strong>239,050,000.00</strong></td>
</tr>
</tbody>
</table>
Table 1.4: IDBZ Industrial Development Projects being funded through Zimbabwe Economic and Trade Revival Fund (ZETRF) and other lines of credit as at 30 June 2012

<table>
<thead>
<tr>
<th>Project</th>
<th>Brief Project Description</th>
<th>Amount (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acsend Investments (Private) Limited</td>
<td>Equipment for manufacturing concrete pipes, drainage shelves and storm drainage pipes</td>
<td>600,000</td>
</tr>
<tr>
<td>Munted Motors</td>
<td>Retailing of farming and earthmoving equipment</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Meikles Limited</td>
<td>Tourism &amp; Hospitality</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Africa Albida Tourism</td>
<td>Tourism &amp; Hospitality</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Rainbow Tourism Group</td>
<td>Tourism &amp; Hospitality</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Premier Services Medical Investments</td>
<td>Health services - Acquisition of medical equipment</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Hunyani Holdings Limited</td>
<td>Manufacturing - Manufacturing of packaging material</td>
<td>1,800,000</td>
</tr>
<tr>
<td>Green Fuel (Private) Limited</td>
<td>Energy - Production of ethanol</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Anchor Yeast</td>
<td>Manufacturing - Importation of bleaching equipment</td>
<td>1,900,000</td>
</tr>
<tr>
<td>Elengrow</td>
<td>Manufacturing - Raw materials for plastic containers</td>
<td>750,000</td>
</tr>
<tr>
<td>Pioneer Seeds</td>
<td>Maize projects with 89 farmers</td>
<td>1,880,000</td>
</tr>
<tr>
<td>Ocean marketing (T/A Tashas)</td>
<td>Retailing - Milling &amp; Bakery plant</td>
<td>337,000</td>
</tr>
<tr>
<td>Plus Five Pharmaceuticals</td>
<td>Manufacture of drugs</td>
<td>900,000</td>
</tr>
<tr>
<td>Edgars</td>
<td>Manufacturing</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Smart bags</td>
<td>Manufacturing</td>
<td>280,000</td>
</tr>
<tr>
<td>Hippo Valley</td>
<td>Agro processing</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Dunlop</td>
<td>Manufacturing</td>
<td>750,000</td>
</tr>
<tr>
<td>Chemplex</td>
<td>Manufacturing</td>
<td>845,000</td>
</tr>
<tr>
<td>Afrosoft</td>
<td>IT</td>
<td>1,000,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>37,742,000</strong></td>
</tr>
</tbody>
</table>

The study centres on a comprehensive evaluation of the impact of ICT on a development bank (IDBZ). Three categories of variables that relate to the adoption and implementation of information technology enablers will be used for the study. These include the nature and degree of adoption of innovative technologies, degree of utilization of the identified technologies, and the impact of the adoption of ICT devices on the bank’s operations that lead to
service delivery. According to Seranmadevi and Saravanaraj (2012), developments in technology have resulted in new delivery channels for banking products and services such as Automated Teller Machines (ATMs), Telephone Banking, Mobile Banking, and Electronic Funds Transfer. The study also evaluates the impact of ICT innovations on development banking services in Zimbabwe from a customer perspective.

1.3 Problem Statement
Electronic banking system has become the main technology driven revolution in conducting financial transactions. Banks have made huge investments in telecommunication and electronic systems, users have also been validated to accept electronic banking system as useful and easy to use (Adesina and Ayo, 2010). Given a tightly competed market for banking products and services, homogeneity of banking products, dynamic clients’ needs, further improvements in ICT and the need to stay profitable and grow, development banks and banking institutions in general are faced with a challenge to device effective service delivery channels that suit the environment, stay ahead of competition and meet customer expectations.

According to Abor (2005) and Yasuharu (2003) a number of studies have shown that ICT has appreciable positive effects on bank productivity, cashiers’ work, banking transaction, bank patronage, bank services delivery, customers’ services and bank services. There have been few studies which have examined the impact of ICT by analyzing the perceptions of bank customers (Abor, 2005 and Yasuharu, 2003).

In 2011, IDBZ implemented a new IT system called Rubikon. Since the implementation of the new core banking with its modules, no evaluation has been done to see if the new ICT system has improved the quality of service in the bank as this was one of the major reasons for acquiring Rubikon.

Therefore this study evaluates the impact of ICT on provision of banking services in Zimbabwe based on a development bank customers’ perspective.
1.4 Research Objectives

- To establish ICT based banking products (innovations) adopted and implemented by IDBZ
- To analyze how effectively the bank has been utilizing ICT based platforms to deliver banking services to its clients.
- To assess the impact of ICT capabilities on the quality of banking services provided by the bank.
- Make recommendations on how development banks can utilise and benefit from ICT.

1.5 Research Questions

- What are the ICT based products and services (innovations) adopted by IDBZ?
- How effectively has the bank been utilizing ICT based platforms to deliver banking services to its clients?
- What has been the impact of ICT capabilities on the quality of banking services provided by the bank?
- What recommendations can be made to development banks on the utilisation and benefiting fully from ICT?

1.6 Research Hypothesis

ICT has a positive impact on the provision of banking services in a development bank in Zimbabwe.

1.7 Research Justification

The research will add value to strategic and operational decision makers in bank strategic marketing, business development and bank executives by exposing loopholes and challenges in the implementation of ICT based banking solutions and enlightening such officials for purposes of corrective action plans. The study is intended to add value to the central bank as banking technologies are scrutinised in relation to their implications on the regulation of banking institutions. Banking consumers will benefit from improved application of ICT based service channels and refined operating
practices in banks due to technological improvements. It will identify and propose remedies on practical gaps between generic operating approaches that lack technological input and that called for by a constantly changing ICT environment. This will then bring to light the possible ways of going around existing challenges in the market environment as relates to ICT banking solutions. On the other hand the research output will form a foundation and basis for further research by other scholars. The research probes the effects and influence of current ICT solutions at IDBZ and past experiences hence bringing to light the room for improvement in ICT platforms and banking services delivery. The whole exercise has an end effect of marrying the researcher’s theoretical and current practical worlds thus enhancing a solid standing in the technological and financial markets of today.

1.8 Research Scope
The study will cover ICT issues and banking services delivery concerns in banking institutions in Zimbabwe with special reference to services provision at IDBZ, analysing the ICT technologies implementation path at the company, related challenges and the influence of ICT solutions on banking services quality. An evaluation and assessment of current operational practices against the dictates of the technological changes will play a central role. Banking services delivery challenges will be discussed in the context of profitability and market share. The main practical reference case will be drawn from IDBZ. The research will focus on the bank’s head office.

1.9 Dissertation Outline
Chapter one discussed the background of the study, problem statement, objectives of the study, research questions, scope of the study, justification of the study and finally the organisation of the study. This chapter has provided the introduction to the study.

Chapter two reviews literature on ICT and its impact on development banking services. This chapter will provide a discussion of relevant concepts and theories related to the subject in an attempt to answer objectives of the study.
Chapter three focuses on the research methodology and ties the research process to the research question, the research problems and the research instruments. It describes the sample and reasons why this sample was selected. The chapter concludes by discussing the data collection techniques and the instruments, their validity and reliability.

Chapter four discusses and presents the study findings.

Chapter five discusses the conclusions and recommendations drawn from the study findings. The area of further study is also presented in this chapter.

1.10 Chapter Summary
This chapter provided the purpose of the study and then looked at the background of the banking industry in Zimbabwe and that of IDBZ, problem statement, research objectives, research questions, research hypothesis, research justification, research scope and finally the organisation of the study.
CHAPTER TWO

2. LITERATURE REVIEW

2.1 Introduction
This chapter reviews the theoretical framework as proposed by various researchers on the area of impact of ICT on provision of banking services in IDBZ. Literature on ICT innovations that have been adopted by banks was reviewed. The literature on provision of services was reviewed to identify the models that have been proposed on how to measure service provision.

2.2 What is ICT?
Information and communications technology - or technologies (ICT) is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICTs are often spoken of in a particular context, such as ICTs in banking, education, health care, or libraries (Amoako, 2012). According to European Commission Report (2008), ICT is an umbrella term that encompasses a wide array of systems, devices and services used for data processing (the "I" and information part in ICT) plus telecommunications equipment and services for data transmission and communication (the "C" and communication part in ICT). According to Coombs et al, (1987) “information technology” is a term that generally covers the harnessing of electronic technology for the information needs of a business at all levels. Coombs et al, (1987) further states that innovations in information processing, telecommunications, and related technologies are often credited with helping fuel strong growth in the many economies. Ige (1995) defines information technology as the modern handling of information by electronic means, which involves its access, storage, processing, transportation or transfer and delivery. Information technology affects financial institutions by easing enquiry, saving time, and improving service delivery (Alu, 2002). 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. (Moya, Balunywa and Nanyuma, 2010)

The use of Information and Communication Technology (ICT) helps in the efficient management and execution of transactions since it could be designed to suit one's operations. The success of Information and Communication Technology (ICT) is not the technology per se, but the ability to manage it well (Amoako, 2012)

**2.3 Effects of ICT to Banks**
Managers cannot ignore Information Systems because they play a critical role in contemporary organisation (Laudon and Laudon, 2012). Moya, Balunywa and Nanyuma, (2010) state that the use of information and communication technology (ICT) concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry (Laudon and Laudon, 2012). In addition Laudon and Laudon (2012) state that IT has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

Companies use ICT in their business processes mainly for three purposes: to reduce costs, to better serve the customer, and to support growth (e.g. by increasing their market reach) (European Commission Study Report, 2008). The increasing competitive pressure on companies, many of which operate in a global economy, has been a strong driver for ICT adoption. Firms are constantly searching for opportunities to cut costs and ICT holds great promise in this respect as it increases the efficiency of a firm’s business processes, both internally and between trading partners in the value chain (European Commission Study Report, 2008)
While cutting costs continues to motivate e-business activity, innovative firms have discovered and begun to exploit the potential of ICT for delivering against key business objectives. They have integrated ICT into their production processes and quality management and, most recently, in marketing and customer services. These last sectors are widely considered key to improve competitiveness in the current phase of development of European economies (European Commission Study Report, 2008).

The ICT development has a significant effect on development of more flexible and user friendly banking services (Alhaji and Rosmaini, 2012). 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. There has been a revolution in the way banks operate as a result of implementation of information technology and communication networking (Yasuharu, 2003). Yasuharu (2003) concurred with Idowu et al. (2002), Balachandher et al. (2001) and Hunter (1991) that a number of studies have concluded that IT has appreciable positive effects on bank productivity, cashiers’ work, banking transaction, bank patronage, bank services delivery, customers’ services and bank services. They concluded that, these have positive effects on the growth of banking.

According to Amaoko (2012) technology has affected the banking sector in terms of competition and the degree of contestability, economy of scale, delivery of service, safety and accessibility for users, and convenience and easiness to customers.

• *Technology is influencing competition and the degree of contestability in banking:* According to Amaoko (2012) as a result of the development of technology, bank’s superiority in information is declining. Entry barrier have been declining, new competitors have emerged. Some financial products and services have become more transparent and, customers show willingness to unbundle the demand for financial products and services, all these lead to a more competitive
environment. Due to lowered entry and exist and deconstruction, for some sub-financial markets, contestability in banking is also raised (Lucas, 2003).

Performing better, being faster and cheaper is what is required by organisations in service sectors such as banking (Amaoko, 2012). The developments in information and communication technology (ICT) are radically changing the way business is done. According to Abor (2005), there is a feeling that electronic commerce now 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. Abor (2005), further states that this revolution in the marketplace 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.

• *Technology influences economy of scale:* Competitive pressure forces banks to lower their cost. Bank seeks to get economy of scale in bank progression instead of being a big bank. Bank seeks to secure the optimal business structure, and secure the competitive imperative of economy of scale. There are other options to get economy of scale, including joint venture and confederation of financial firms. Small firms also can get economy of scale by outsource (Amoako, 2012).

• *Technology has improved delivery of service:* Technology has a major impact on the way banking and financial services are delivered. A wide range of alternative delivery mechanism becomes available, internet, ATM etc. these reduces the dependence on the branch network as a core delivery mechanism. With the development of technology, the financial systems are substantially over-supplied with delivery system through a duplication of network; bank has to change their delivery strategy, restructured their branch network strategy, and rationalized their strategy or the whole course of action (Amoako, 2012).
• *Technology is safe and accessible for users:* Internet Banking gives you access to banking 24 hours a day, seven days a week. Online Banking also eliminates time and distance as barriers to banking. The use of internet banking helps to keep operating costs down for banks, resulting in cheaper transaction costs for customers. Bill payment is a service that allows you pay your bills online whenever you want to and whatever account you have. You can pay almost anyone from friends to businesses and creditors. Through this feature you can schedule your payments in advance, set up recurring payments on regular bills and even view your payment history. There is no need to waste any time or money waiting in line at the post office to get stamps, making extra trips to the mailbox and ordering cheque (Amoako, 2012).

• *Technology is convenient and easy:* Customers have needed a banking service at one time or another. Online banking has made this feature convenient and easy. With this feature you can transfer money between your accounts. This is not just limited to your accounts within one particular banking institution but almost any banking institution that you have an account with. E-banking allows you to obtain real-time information about your bank accounts. This allows you to verify whether a transaction or a cheque has cleared or whether there are any unauthorized transactions on your account (Amoako, 2012).

2.4 ICT Innovations Adopted by Banks

Computers have been used in the banking industry since the international Business Machine (IBM) computers were introduced in 1980s. However, their impact was limited because there were not enough of them. As technology has already advanced, it has become a major influence in the banking industry (Curtain, 1998).

With the ambitious advancement in IT, a number of banks in their latest move in a decade of banking industrial upheaval, brought about by enormous
advance in IT. This development has affected nearly all aspects of the banking industry (International Society for Technological Advancement in Banking, 1998).

The improvement in Information and Communication Technology (ICT) has enhanced the creation of new business models and has revolutionized the distribution channels of financial system resulting in not only a reduction in the transaction costs but also has improved the convenience and accessibility for the customer (Curtain, 1998).

Implementation of information technology and communication networking has brought revolution in the functioning of the banks and the financial institutions. According to Moya, Balunywa and Nanyuma (2010), structural changes are in store for financial services industry as a result of the Internet revolution.

Banks have made extensive use of Information and Communication Technology (ICT) for many years in operations (Amoako, 2012). Moya et al. (2010), Amoako (2012) gave Banker’s Automated Clearing Services (BACS), Automated Teller Machines (ATM), Telephone Banking, Personal Computer Banking, Electronic Funds Transfer at Point of Sale (EFTPoS), Internet Banking, branch networking and electronic cards as ICT innovations adopted by banks.

2.4.1 Banker’s Automated Clearing Services (BACS)

Banker’s Automated Clearing Services (BACS) use computers to carry out most financial transactions between banks. These consist of, clearing cheques, paying salaries, payment of standing orders or direct debits (Amoako, 2012).

The BACS does its processing by batch processing in which all transactions from the previous day are processed at one time. The processed data is passed between banks on magnetic tapes. Logs are kept of all the transaction (Amoako, 2012).
2.4.2 Automated Teller Machines (ATM)
The most revolutionary electronic innovation the world over has been the ATM (Amoako, 2012). They are mostly located outside of banks, allowing customers to have access anytime of the day. ATMs are able to provide a wide range of services, such as making deposits, fund transfer between two accounts and bill payments. According to Rose (1999), “an ATM combines a computer terminal, record-keeping system and cash vault in one unit, permitting customers to enter the bank’s book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank’s computerized records 24 hours a day”. Abor (2005), states that once access has been gained, ATMs offer customers several retail banking services. Most ATMs are located outside banking halls, and are also found at airports, malls, and places far away from the home bank of customers. According to Moya, Balunywa and Nanyuma, (2010), ATMs were introduced first to function as cash dispensing machines, however, due to advancements in technology, ATMs are able to provide a wide range of services, such as deposits taking, bill payments and funds transfer between two or accounts.

According to Moya, Balunywa and Nanyuma, (2010), the combined services of both the automated and human tellers results in more productivity for the bank during banking hours. Also, as it saves customers time in service delivery as alternative to queuing in bank halls, customers can invest such time saved into other productive activities (Moya, Balunywa and Nanyuma, 2010). According to Rose (1999), ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human tellers. ATMs average about 6,400 transactions per month while human tellers average 4,300 transactions per month. Furthermore, as the ATMs continue when human tellers stop, there is continual productivity for the banks even after banking hours.

2.4.3 Telephone Banking
According to Balachandher et al. (2001), Telephone banking) also referred to as Telebanking can be considered as a “form of remote or virtual banking,
which is essentially the delivery of branch financial services via telecommunication devices where the bank customers can perform retail banking transactions by dialing a touch-tone telephone or mobile communication unit, which is connected to an automated system of the bank by utilizing Automated Voice Response (AVR) technology”.

Moya, Balunywa and Nanyuma, (2010), state that Telebanking has numerous benefits for both customers and banks. From the customer’s perspective, telephone banking provides increased convenience, expanded access and significant time saving. On the other hand, as far as banks are concerned, the costs of delivering telephone-based services are substantially lower than those of branch based services. Telephone Banking has the impact on productivity of ATMs, except that it lacks the productivity generated from cash dispensing by the ATMs. As a delivery conduit that provides retail banking services even after banking hours, that is for 24 hours a day, telephone banking accrues continual productivity for the bank. Retail banking services are offered to customers at their offices and/or homes as an alternative to going to the bank branch or ATM. By this delivery channel time is saved for customers and it gives more convenience for higher productivity (Moya, Balunywa and Nanyuma, 2010).

2.4.4 Personal Computer Banking (PC-Banking)

Moya, Balunywa and Nanyuma, (2010), define PC-Banking as a “service which allows the bank’s customers to access information about their accounts via a proprietary network, usually with the help of proprietary software installed on their personal computer”. The customer can perform a lot of retail banking functions once he or she has gained access to the bank’s computer system. There has been an increase in the use of personal computers as customers became aware of the importance of computer literacy. This certainly supports the growth of PC banking which virtually establishes a branch in the customers’ home or office, and offers 24-hour service, seven days a week. PC-banking also encompasses the benefits of Telephone Banking and ATMs (Abor, 2005).
2.4.5 Electronic Funds Transfer at Point of Sale (EFTPoS)

Moya, Balunywa and Nanyuma, (2010), describe an electronic Funds Transfer at Point of Sale is “an on-line system that allows customers to transfer funds instantaneously from their bank accounts to merchant accounts when making purchases (at purchase points)”. According to Chorafas (1988) a POS uses a debit card to activate an Electronic Funds Transfer Process.

Moya, Balunywa and Nanyuma, (2010) further state that increased banking productivity results from the use of EFTPoS to service customers shopping payment requirements instead of clerical duties in handling cheques and cash withdrawals for shopping. EFTPoS ensures continual productivity after banking hours since the service continues after banking hours. This delivery channel also saves customers time and energy in getting to bank branches or ATMs for cash withdrawals which can be harnessed into other productive activities (Moya, Balunywa and Nanyuma, 2010).

2.4.6 Internet Banking

Essinger (1999) describes Internet Banking as; “to give customers access to their bank accounts via a web site and to enable them to enact certain transactions on their account, given compliance with stringent security checks”. The Internet Banking Handbook (2001) for Federal Reserve Board of Chicago’s Office of the Comptroller of the Currency (OCC), describes Internet Banking as “the provision of traditional (banking) services over the internet”.

According Moya, Balunywa and Nanyuma, (2010), Internet banking offers more convenience and flexibility to customers coupled with a virtually absolute control over their banking. Moya, Balunywa and Nanyuma, (2010), further state that service delivery through Internet Banking is informational (informing customers on bank’s products, etc) and transactional (conducting retail banking services).

According to Suoranta and Mattila, (2004) Internet Banking has all the impacts on productivity found in Telephone Banking and PC-Banking. They further state that Internet Banking is the most cost-efficient technological
means of yielding higher productivity as it eliminates the barriers of distance, time and provides continual productivity for the bank to far away customers.

2.4.7 Branch Networking
Abor (2005), describes Branch Networking as “the computerization and inter-connecting of geographically scattered stand-alone bank branches, into one unified system in the form of a Wide Area Network (WAN) or Enterprise Network (EN); for the creating and sharing of consolidated customer information/records”

Branch Networking offers a quicker rate of inter-branch transactions as it eliminates the barriers of distance and time. This results in more productivity per time period (Moya, Balunywa and Nanyuma, 2010). Several networked branches serving all customers as one system will simulate division of labour among bank branches and this is associated with positive impact on productivity among the branches. Networking of branches limit distances travelled by customers to bank branches thus offering more time for customers’ productive activities (Moya, Balunywa and Nanyuma, 2010).

2.4.8 Electronic cards
According to Amaoko (2012), another technological innovation in the banking industry is the various electronic cards, which the banks have developed over the years. Amaoko (2012) describes an electronic card as a card, onto which a cash amount is electronically loaded. Mensah (2009) mentioned that various banks in Africa had developed electronic cards by 2001.

2.5 ICT and Banking Services
Amaoko (2012) describes a bank as a financial institution that accepts deposits and channels those deposits into lending activities. Banks primarily provide financial services to customers while enriching investors. Banks are important players in financial, markets and offer services such as investment funds and loans.
According to Moya, Balunywa and Nanyuma, (2010), there are some banking services that have been revolutionized through the use of ICT such as account opening, customer account mandate, and transaction processing and recording. Information and Communication Technology has provided a platform where self-service is offered, for example, automated customer service machines from where prospective customers can complete their account opening documents direct online. According Agboola (2004), ICT enables customers to validate their account numbers and receive instruction on when and how to receive their chequebooks, credit and debit cards. Agboola (2004), goes on further to mention the ICT products in use in the banking industries of both developing and developed countries such as Automated Teller Machine, Smart Cards, Telephone Banking, MICR, Electronic Funds Transfer, Electronic Data Interchange, Electronic Home and Office Banking. Moya, Balunywa and Nanyuma, (2010), in their study of Bank of Africa in Uganda, concluded that ICT associated delivery channels have contributed positively to the provision of banking services particularly ATMs and internet banking. Amoako (2012) concluded that most bank workers and customers support the assertion that ICT has impacted positively on the activities rendered by the banks. The results of his study in general indicated that, ICT have contributed positively to the provision of banking services and the growth of the Ghanaian banking industry.

2.6 Banking Services

It is important to make a distinction between a service and goods. Goods are most tangible (an object) while services are more of an act (a deed, performance or an effort). There are many definitions of services in the literature may depend on the author and focus of the research (Gronroos, 2001). However, one of the most important and unique characteristics of services is that services are processes, not things which means that a service firm has no product, only interactive processes. Gronroos (2001), offer a comprehensive definition of services where a service is “an activity or series of activities of a more or less intangible nature than normal, but not necessarily, take place in the interaction between the customer and service
employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to the customer problems”.

According to Parasuraman (1985), a service has four unique characters: intangibility, inseparability, heterogeneity, and perishability, which make services different from physical products and hard to evaluate. According to Hoffman and Bateson (2002) services are intangible because they cannot be seen, tasted, felt, heard, or smelled before they are purchased. According to Wallström (2002), services are performance rather than objects. This means that services are more like a process than a thing, more a performance than a physical object, and are experienced rather than consumed. According to Hoffman and Bateson (2002), inseparability of services refers to that services are produced and consumed simultaneously. Unlike services, physical products are first produced, then sold and then consumed. According to Hoffman and Bateson (2002), heterogeneity means service performances are highly variable from one service transaction to another and one time to another since services depend on who provide them, when and where they are provided. According to Hoffman and Bateson (2002), perishability means services cannot be stored or saved. Hoffman and Bateson (2002) explained that services will not exist if they are not consumed at their appointed time. Therefore service marketers have less control for handling supply and demand fluctuations.

Smith (1990) studied way the four distinguishing characteristics of services-intangibility, inseparability, heterogeneity and perishability affect clients' perceptions of quality service from banks. The study revealed that intensifying competition and increasing customer expectations have created a climate where 'quality' is considered to be a major strategic variable for improving customer satisfaction and thus the profitability of financial service providers.

Amaoko (2012) identified the following as services offered by banks:

- Trading of financial assets on behalf of their customers, i.e. acting as brokers or agents for clients
• Trading in financial assets for their own accounts, i.e. acting as propriety dealers
• Helping to create financial assets for their customers and then selling these assets to other in the market, example underwriting and issuing new shares
• Providing investment advice to personal customers or business advice to firms on mergers and takeovers
• Fund management, for example managing the whole or part of a pension funds and Insurance services Bill Payment - Issuance of cheque books so that bills can be paid and other kinds of payments can be delivered by post
• Money Transfer
• Provide personal loans, commercial loans, and mortgage loans (typically loans to purchase a home, property or business)
• Issuance of credit cards and processing of credit card transactions and billing
• Issuance of debit cards for use as a substitute for checks
• Allow financial transactions at branches or by using Automatic Teller Machines (ATMs)
• Provide wire transfers of funds and Electronic fund transfers between banks
• Facilitation of standing orders and direct debits, so payments for bills can be made automatically
• Provide overdraft agreements for the temporary advancement of the Bank’s own money to meet monthly spending commitments of a customer in their current account.
• Provide Charge card advances of the Bank’s own money for customers wishing to settle credit advances monthly.
• Provide a check guaranteed by the Bank itself and prepaid by the customer, such as a cashier’s check or certified check. Keeping money safe while also allowing withdrawals when needed Clearing and cashing of cheques.
2.7 Banking Service Quality

Recent studies have shown that high level of customer service quality can exert a positive influence on customer satisfaction (Parasuraman et al., 1988; Cronin and Taylor, 1992). Service quality is a concept that has aroused considerable interest and debate in the research literature because of the difficulties in both defining it and measuring it with no overall consensus emerging on either (Wisniewski, 2001). There are a number of different "definitions" as to what is meant by service quality. One that is commonly used defines service quality as the extent to which a service meets customers' needs or expectations (Lewis and Mitchell, 1990; Dotchin and Oakland, 1994a; Asubonteng et al., 1996; Wisniewski and Donnelly, 1996). Service quality can thus be defined as the difference between customer expectations of service and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman et al., 1985; Lewis and Mitchell, 1990).

Service quality is a critical issue in the service industry and of particular importance for financial service providers who characteristically offer products that are homogeneous in nature. Furthermore, service quality is both directly and indirectly related to bank loyalty via satisfaction. A telephone survey conducted throughout the state of Victoria identified poor customer service as the most commonly given reason by consumers for considering switching accounts (Quadrant Research Services, 1992).

The service quality has been wildly used to assess the service performance of various service organizations including banks (Cowling and Newman, 1995). SERVQUAL is the most widely used and tested general measure of service quality (Bennington and Cummane, 1998). This instrument has been widely adopted by both managers (Parasuraman, Zeithaml and Berry, 1991) and academics (Babakus and Boller, 1992; Cronin and Taylor, 1992; Carman, 1990; Crompton and MacKay, 1989) to evaluate customer perceptions of service quality for a variety of services. Measurement allows for comparison before and after changes, for the location of quality related problems and for
the establishment of clear standards for service delivery. Edvardsen et al. (1994) state that, in their experience, the starting point in developing quality in services is analysis and measurement. While there have been efforts to study service quality, there has been no general agreement on the measurement of the concept. The majority of the work to date has attempted to use the SERVQUAL (Parasuraman et al., 1985; 1988) methodology in an effort to measure service quality (Shahin, 2005).

Gronroos (1982) described the total service quality as customer’s perception of difference between the expected service and the perceived service. He then defined the concept of perceived service quality as the outcome an evaluation process, where the consumer compares his expectations with the service he perceives or has received (Gronroos, 1982).

Parasuraman et al. (1985) also defined service quality as the comparison between customer expectations and perceptions of service. Parasuraman et al. (1985) suggested three underlying themes:

i. service quality is more difficult for the consumer to evaluate than goods quality,

ii. service quality perceptions result from a comparison of consumer expectations with actual service performance, and

iii. quality evaluations are not made solely on the outcome of service; they also involve evaluations of the process of service delivery (Parasuraman et al., 1985).

The “Service Quality Model” was suggested by Parasuraman et al. (1985) in order to serve as a framework for further research.

### 2.7.1 Service Quality Model Gaps

There are seven major gaps in the service quality concept (Shahin, 2003), which are shown in Figure 2.1 (see page 25). The model is an extension of Parasuraman et al. (1985). According to Shahin (2003), the three important gaps, which are more associated with the external customers, are Gap1, Gap5 and Gap6; since they have a direct relationship with customers.
• **Gap1:** *Customers’ expectations versus management perceptions:* as a result of the lack of a marketing research orientation, inadequate upward communication and too many layers of management.

• **Gap2:** *Management perceptions versus service specifications:* as a result of inadequate commitment to service quality, a perception of unfeasibility, inadequate task standardisation and an absence of goal setting.

• **Gap3:** *Service specifications versus service delivery:* as a result of role ambiguity and conflict, poor employee-job fit and poor technology-job fit, inappropriate supervisory control systems, lack of perceived control and lack of teamwork.

• **Gap4:** *Service delivery versus external communication:* as a result of inadequate horizontal communications and propensity to over-promise.

• **Gap5:** *The discrepancy between customer expectations and their perceptions of the service delivered:* as a result of the influences exerted from the customer side and the shortfalls (gaps) on the part of the service provider. In this case, customer expectations are influenced by the extent of personal needs, word of mouth recommendation and past service experiences.

• **Gap6:** *The discrepancy between customer expectations and employees’ perceptions:* as a result of the differences in the understanding of customer expectations by front-line service providers.

• **Gap7:** *The discrepancy between employee’s perceptions and management perceptions:* as a result of the differences in the understanding of customer expectations between managers and service providers. (Shahin A., 2005)
This model is a diagnostic tool and externally focused. If used properly and correctly, it has the potential to assist the management to identify the relative service quality factors from customer perspective (Yang et al., 2004).

Parasuraman et al. (1988) further explained that service quality is the overall evaluation of a firm’s service by comparing the firm’s performance with the customer’s general expectations of how firms should perform. They then stated the perceived service quality as global judgment, or attitude, relating to the superiority of the service (Parasuraman et al., 1988).
Page and Spreng (2002) argued that a performance-only measure is superior since it’s more reliable and defensible. They further argued that performance is a much stronger indicator of service quality than expectation. Although the conceptual discussion about service quality continues, it can be seen that service quality is a multi-level and multi-dimensional concept that might mean different things to different researchers in the literature (Cronin et al., 2000).

2.7.2 Service Quality Dimensions

Studies by Gronroos (1982, 1984) and Parasuraman et al. (1985, 1988) have sought to uncover the global attributes of services that contribute most significantly to relevant quality assessments in the traditional service environment.

Gronroos (1982) state three dimensions of service quality as:

(i) *The technical quality of outcome*. That is to say, the actual outcome of the service encounter. The service outcome can often measured by the consumer in an objective manner.

(ii) *The functional quality of the service encounter*. This element of quality is concerned with the interaction between the provider and recipient of a service and is often perceived in a subject manner.

(iii) *The corporate image*. This is concerned with consumers’ perceptions of the service organization. The image depends on: technical and functional quality; price; external communications; physical location; appearance of the site and the competence and behaviour of service firms’ employees.

Also three service quality dimensions are stated by Lehtinen and Lehtinen (1982), however the differences can be seen below:

(i) *Physical quality*. This includes items such as the condition of buildings and enabling equipment.

(ii) *Corporate quality*. This refers to the organization’s image and profile.
(iii) **Interactive quality.** This derives from the interaction between service organizations’ personnel and the customer as well as the interaction between customers.

According to Lehtinen and Lehtinen (1982) it is necessary to differentiate between the quality associated with the process of service delivery and the quality associated with the outcome of the service when examining the determinants of quality.

Swartz and Brown (1989) compared the work of Grönroos (1982) and Lehtinen (1982) and drew some distinctions concerning the dimensions of service quality. Swartz and Brown (1989) stated that what the service delivers is evaluated after performance. This dimension is called technical quality by Grönroos (1982) and physical quality by Lehtinen and Lehtinen (1982). They also stated that how the service is delivered is evaluated during delivery. This dimension is called functional quality by Grönroos (1982), interactive quality by Lehtinen and Lehtinen (1982).

According to Parasuraman et al. (1985), there are ten dimensions of service quality: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, competence, understanding the customer and tangibles. Among these ten service quality determinants, reliability is identified as the most important. Detailed explanation will be described below in Table 2.1.
Table 2.1: Determinants of Service Quality

<table>
<thead>
<tr>
<th>Service Quality Dimensions</th>
<th>Measurement Criteria</th>
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<tbody>
<tr>
<td>Reliability</td>
<td>It means that the firm performs the service right the first time and the firm honours its promises.</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>It concerns the willingness or readiness of employees to provide service.</td>
</tr>
<tr>
<td>Competence</td>
<td>It means that possession of the required skills and knowledge to perform the service.</td>
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<tr>
<td>Access</td>
<td>It involves approachability and ease of contact.</td>
</tr>
<tr>
<td>Courtesy</td>
<td>It involves politeness, respect, consideration, and friendliness of contact personnel.</td>
</tr>
<tr>
<td>Communication</td>
<td>It means keeping customers informed in language they can understand and listening to them.</td>
</tr>
<tr>
<td>Credibility</td>
<td>It involves trustworthiness, believability, honesty.</td>
</tr>
<tr>
<td>Security</td>
<td>It is the freedom from danger, risk or doubt.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Knowing the customer involves making effort to understand the customer’s needs.</td>
</tr>
<tr>
<td>Tangibles</td>
<td>It includes the physical evidence of the services.</td>
</tr>
</tbody>
</table>

*Source: Parasuraman et al., (1985, p. 47)*

Based on the determinants of service quality listed, Parasuraman et al. (1985) developed a model of Determinants of Perceived Service Quality. It indicated that perceived service quality is the result of the consumer’s comparison of expected service with perceived service.

According to (Parasuraman et al., 1988), the initial ten dimension proposed by Parasuraman et al. (1982) were purified and distilled to five: tangibles, reliability, responsiveness, assurance, and empathy, which constitute the base of a global measurement for service quality. A 22-item services quality scale was then developed by Parasuraman et al. (1988) based on the five dimensions listed above. Moreover, they state that there’s a range of tolerance where customer perception on a service dimension, anchored by
the minimum level consumers would be willing to accept and the level that customers believe can and should be delivered. According to Parasuraman et al., (1988), Reliability is the most critical dimension, followed by responsiveness, assurance and empathy and tangibles was the least critical.

Table 2.2: 22-Item Service Quality

<table>
<thead>
<tr>
<th>Service Quality Dimensions</th>
<th>22-Item Scale</th>
</tr>
</thead>
</table>
| Reliability               | Providing service as promised  
                           | Dependability in handling customers’ service problems.  
                           | Performing services right first time  
                           | Providing services at the promised time  
                           | Maintaining error-free records |
| Responsiveness            | Keeping customer informed as to when services will be performed  
                           | Prompt service to customers  
                           | Willingness to help customers  
                           | Readiness to respond to customers’ requests |
| Assurance                 | Employees who instil confidence in customers  
                           | Making customers feel safe in their transactions  
                           | Employees who are consistently courteous  
                           | Employees who have the knowledge to answer customers questions |
| Empathy                   | Giving customers individual attention  
                           | Employees who deal with customers in a caring fashion  
                           | Having the customer’s best interests at heart  
                           | Employees who understand the needs of their customers  
                           | Convenience business hours |
| Tangibles                 | Modern equipment  
                           | Visually appealing facilities  
                           | Employees who have a neat, professional appearance  
                           | Visually appealing materials associated with the service |

Source: Parasuraman et al., (Referred to in Kolter and Keller, 2006, p.414)

According Johnston (1995), there are 18 service dimensions which are: access, aesthetics, attentiveness, availability, care, cleanliness/tidiness,
comfort, commitment, communication, competence, courtesy, flexibility, friendliness, functionality, integrity, reliability, responsiveness, and security. According to Johnston (1997), security and reliability were considered most important by customers; responsiveness communication and competence were important. He also stated that the areas, such as comfort, cleanliness and aesthetic were not worth much attention. Additionally, Nantel (2000) propose six underlying key dimensions in retail banking. These dimensions are: effectiveness and assurance, access, price, tangibles, service portfolio and reliability Nantel, 2000).

According Yang et al. (2004), studies by both of Parasuraman et al. (1988) and Johnston (1995) offer particularly robust service quality dimensions for measuring traditional services and could serve as a good starting point for further research.

2.7.3 Measuring Service Quality

An important theoretical approach for investigating the service quality is SERVQUAL Analysis (Wisher and Corney, 2001). According to Wisner and Corney (2001) service quality is ‘global judgment or attitude, relating to the superiority of the service’, and explained it as involving evaluations of the outcome and process of service act. According to Parasuraman et al., (1988) service quality can be viewed as the difference between consumer expectations of ‘what they want’ and their perceptions of ‘what they get’. A service measurement scale called as ‘SERVQUAL’ scale based on the definition by Parasuraman et al. (1988). According to Dalholhar et al. (2000), validity of the difference between perception and expectation (P-E) measurement framework has also come under severe criticisms due to problems with the conceptualization and measurement of expectations components of the SERVQUAL scale. While perception (P) is definable and measurable in a straightforward manner as the consumers’ belief about service is experienced, expectation (E) is subject to multiple interpretations and such has been operationalized differently by different authors and researchers (Babakus and Boller, 1992; Teas, 1993).
2.7.4 SERVPERF Scale

Cronin and Taylor (1992) supported the superiority of the ‘performance only’ instrument over the SERVQUAL scale with empirical evidence across four industries. This led to the introduction of ‘performance only’ scale known as the SERVPERF scale. In equation form, it can be expressed as:

\[ SQ_i = \sum_{j=1}^{k} P_{ij} \]

Where
SQ\(_i\) = perceived service quality of individual ‘i’.
k = Number of attributes / items
P = Perception of individual ‘i’ with respect to performance of a service firm on attribute ‘j’.

According to Hartline and Ferrell (1996), the SERVPERF scale is found to be superior not only as the efficient scale but also more efficient in reducing the number of items to be measured by 50 per cent. In this research study, the SERVPERF scale was used to measure service quality in banking.

2.8 Chapter Summary

This chapter has looked at literature relating to ICT and provision of banking services. ICT was explained and various ICT innovations adopted by banks were discussed. A model for measuring provision of banking services was also discussed.
3 RESEARCH METHODOLOGY

3.1 Introduction
This chapter discusses the methodology used in this study and explain the chosen research methods. It will further describe the research design, research philosophy, research purpose, research approach, research strategy, and data collection methods and analysis approach. Furthermore, this chapter describes the chosen sampling technique, the way the data for the study has been collected and techniques used to analyze the data. In addition, the issue of the reliability and validity of the presented study is discussed.

Research Objectives:
1. To establish ICT based banking products (innovations) adopted and implemented by IDBZ
2. To analyze how effectively the bank has been utilizing ICT based platforms to deliver banking services to its clients.
3. To evaluate the impact of ICT capabilities on the quality of banking services provided by the bank.

Figure 3.1: Schematic Representation of the Research Methodology
Source: Adapted from Keramati et al., (2009)
According to De Vaus (2001), social research needs a design or a structure before data collection or analysis can commence. The function of a research design is to ensure that the evidence obtained enables the researcher to answer the research question as unambiguously as possible. Research design deals with a logical problem and not a logistical problem' (Yin, 1989). De Vaus (2001) further states that in social research the issues of sampling, method of data collection (e.g. questionnaire, observation, document analysis), design of questions are all subsidiary to research design.

Research design is different from the method by which data are collected. It is not uncommon to see research design treated as a mode of data collection rather than as a logical structure of the inquiry (De Vaus, 2001). There is nothing intrinsic about any research design that requires a particular method of data collection. Data for any design can be collected with any data collection method (Figure 3.2). How the data are collected is irrelevant to the logic of the design.

According to De Vaus (2001), there are four research designs namely; Experiment, Case Study, Longitudinal and Cross-sectional. Experimental design is used to establish causal relationship between independent and dependent variables. One variable is manipulated while all others are held constant. It is rarely used in social research because it will be either impractical or unethical. Cross-sectional design is when collection of data is from more than one case at a single point in time. It shows variation between individuals, families, groups or nations. It can be used for quantifiable data which patterns of association between variables. Cross-sectional design can includes survey, for example, Health and Lifestyle survey. The variables are non-manipulable (Machin and Campbell, 2005). Longitudinal design involves survey of the same sample on more than one occasion. It is suitable where the researcher want to shows area of social change over time. (Gray, 2004). Case study design involves detailed and intensive analysis of one case, for example, a specific person, event, organization or community. It often involves qualitative research. The case is the focus of interest in its own right–location/setting just provides a background. Case study can be critical,
unique, extreme, revelatory, exemplifying. (Machin and Campbell, 2005). The relationship between research design and particular data collection methods is displayed in figure 3.2 below.

**Figure 3.2: Relationship between research design and particular data collection methods**
*Source: De Vaus, (2001).*

Since this research will focus on the impact of ICT at a development bank in Zimbabwe, IDBZ the research design chosen for this study is the case study.
3.3 Research Philosophy

The decision to use quantitative or qualitative methods is dependent upon the assumptions concerning the nature of knowledge and reality, how one understands knowledge and reality, and the process of acquiring knowledge and knowledge about reality. Certain assumptions are made concerning knowledge and reality, which enables the researcher to choose a particular research approach and these assumptions shape the research process, from the methodology employed to the type of questions asked (Hathaway, 1995). Considering the subject matter, there is need to clarify the epistemological and ontological assumptions used to decide on the exact method to approach this study.

3.3.1 Ontological Assumptions

Ontology refers to assumptions held about the nature of social reality that is, whether reality is objective and external to the individual, or whether it is subjective and cognitively constructed on an individual basis (Long et al., 2000). It involves what exists in the world. These positions are frequently referred to respectively as objectivism and constructivism. Objectivism is an ontological position which states that, social phenomena confront us as external facts that are beyond our reach or influence. This means that social phenomena and the categories that we use in everyday discourse have an existence that is independent or separate from actors (Bryman and Bell, 2007). Constructivism is an alternative ontological position which asserts that social phenomena and their meanings are continually being accompanied by social actors. Realities are constructed by the social actors (Bryman and Bell, 2007). According to Bryman and Bell (2007), categories that people employ in helping them understand the world are considered social products, in which are meanings are constructed in and through interaction.

In relation to this study, there is strong belief that there is a reality that can be apprehended or perceived; ICT and provision of banking services do exist out there and are external to the consumers that perceive these realities. This tilts
this study towards an objectivist way of looking at social phenomena. It is a clear fact that companies strive hard to improve service quality through adoption of ICT. The researcher is convinced that provision of banking services could be one of the imminent effects of ICT. These realities of ICT and provision of banking services can be captured out there by trying to find out how consumers perceive service quality as a result of ICT adoption. Structured questions developed from the SERVQUAL model in which respondents will choose their answers from. Through this method, the researcher is very objective in this study and therefore answer the research questions and attain the objectives. The study is not seeking to understand each respondent’s perceptions but rather get a general answer on customers’ perceptions by using an already designed model. The perceptions have been classified into levels where each respondent identifies the range where he/she belongs by using the likert scale.

3.3.2 Epistemological Assumptions
Epistemology can be defined in a broad sense as the study of knowledge (Bryman and Bell, 2007). In the extremes, knowledge can be viewed as objective and theoretically accessible to all, or else subjective and dependent on individual experience (Long et al., 2000). The conflicting issue with epistemology is whether or not the social world should be studied according to the same principles, procedures and ethos as the natural science (Bryman and Bell, 2007). Positivism advocates the application of the methods of natural science to the study of social reality and beyond. According to Bryman and Bell (2007) positivism can entail the following principles;

- The principle of phenomenalism which states that only phenomena and hence knowledge confirmed by the senses can genuinely be warranted as knowledge.
- The principle of deductivism which states that the purpose of theory is to generate hypotheses that can be tested and that will thereby allow explanations of laws to be assessed.
- The principle of inductivism which states, knowledge is arrived at through the gathering of facts that provide the basis for laws.
• Objective, that is, science must be conducted in a way that is value free.
• There is a clear distinction between scientific statements and normative statements and a belief that the former are true domain of scientist.

According to Bryman and Bell (2007) some writers influenced by different intellectual traditions think that interpretivism which contrasts positivism shares a view that the subject matter of the social sciences – people and their institutions is fundamentally different from that of the natural science. This implies that studies of the social world require an approach that differentiates humans against the natural order. In a nutshell, interpretivism is concerned with the empathic understanding of human action rather than the forces that act on it while positivism lays emphasis on the explanation and understanding of human behaviour (Bryman and Bell, 2007).

In this study, a positivist view has been followed. Impact of ICT on provision of banking services is assessed using the SERVQUAL model. This topic is dealing with social phenomena, which are ICT and banking services from the customers’ point of view. This knowledge will be developed through an objective measurement using the measurable dimensions of service quality as proposed by Parasuraman et al., (1988). ICT and provision of banking services are realities that exist outside the researcher’s mind and natural science methods are used to study. There is connection between theory and research in this study implying that observations are collected in a manner that is influenced by pre-existing theories. The researcher is interested in finding out the impact of ICT on provision of banking services in a development bank context and identifying what dimensions of service quality customers link to ICT. Taking a positivist view has enabled the researcher attain the objectives mentioned earlier. From the positivist view, the researcher and the objects of investigation (respondents) are independent from each other and they were investigated without being influenced by the researcher. Interaction with the respondents was limited to mere handing of
the questionnaires to respondents in order to make the findings fully dependent on the respondents.

3.4 Research Purpose
There are several techniques which could be used to carry out the research based on research problem area. Research can be conducted as exploratory, explanatory or descriptive (Yin, 1994).

3.4.1 Exploratory
Saunders et al. (2007) state that exploratory studies are a valuable means of finding out what is happening, to seek new insight, to ask questions and to assess phenomena in a new light. There are three ways of conducting exploratory research: a search of literature, talking to expert in the subject, conducting focus group interviews. Buchinal (2010) further states that exploratory studies can provide valuable, even critical information for designing larger scale descriptive or explanatory studies.

3.4.2 Explanatory
Yin (1994) stated that explanatory research explains causal relationships between cause and effect. It aims at explaining causal relationships between variables (Saunders et al., 2007). Saunders et al. (2007) further explain explanatory research as the research type in which the primary goal is to understand the nature or mechanisms of the relationship between the independent and dependent variable. Explanatory research is used when it is the researcher wants to show that one variable causes or determines the value of other variable. According to Saunders et al. (2007), the research is good to use when there is no clear understanding about what model should be used and what qualities and relations that are important.

3.4.3 Descriptive
The object of descriptive research is to portray an accurate profile of persons, events of situation. It is necessary to have a clear picture of the phenomena on which the researcher wishes to collect data prior to the collection of data
(Saunders et al., 2007). According to Yin (1994), descriptive research is used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation. Yin (1994), further explains that descriptive research is used when the objective is to provide a systematic description that is as factual and accurate as possible or when the problem is well structured and there is no intention to investigate cause/effect relation. Descriptive research spells out the number of times something occurs, or frequency, lends itself to statistical calculations such as determining the average number of occurrences or central tendencies (Yin, 1994). According to Yin (1994), one of the major disadvantages of descriptive research is that it cannot help determine what causes a specific behaviour, motivation or occurrence. In other words, it cannot establish a causal research relationship between variables.

It can be easily seen the differences among these three purposes of research from the table below (see Table 5).

Table 3.1: Three purposes of research

<table>
<thead>
<tr>
<th>Type of Research Purpose</th>
<th>Description</th>
<th>General Research Questions</th>
</tr>
</thead>
</table>
| **Exploratory**          | • To investigate little-understood phenomena  
• To identify or discover important categories of meaning  
• To generate hypotheses for further research | • What is happening in this social program?  
• What are the salient themes, patterns or categories of meaning for participation?  
• How are these patterns linked with one another? |
| **Explanatory**          | • To explain the patterns related to the phenomenon in question  
• To identify plausible relationships sharing the phenomenon | • What events, beliefs, attitudes, or policies shape this phenomenon?  
• How do these forces interact to result in the phenomenon? |
| **Descriptive**          | • To document and describe the phenomenon of interest | • What are the salient actions, events, beliefs, attitudes, social structures and processes occurring in this phenomenon? |

Sources: Marshall and Rossman (1999)
Since the purpose of this study is to gain better understanding on how ICT affect provision of banking services in Zimbabwean banking sector using the case of a development bank, IDBZ, the research can be considered partly exploratory. In this way, the researcher seeks out new sight on impact of ICT on provision banking services in a development bank. At the same time, it can be seen as descriptive since the researcher got some more information and describe more on the phenomenon within this specific area.

3.5 Research Approach
There are two main research approaches to choose from when conduct a scientific research: qualitative or quantitative method (Yin, 1994). The approach for which to use is decided by characteristics of the gathered information. Moreover, the most important difference between the two approaches is how numbers and statistics are used (Yin, 1994). The quantitative approach relies on numbers and statistical data that are presented and crunched into figures. On the other hand, the qualitative approach uses a method of deep description of a fact or event using words and scientific language (Marshall and Rossman, 1999). The best suitable approach to use depends on the specific study’s research problem and accompanying research questions (Yin, 1994).

The research approach for this study is more quantitative in nature but qualitative approach was used as well to establish the ICT products and services adopted by IDBZ. The quantitative approach is used because it is appropriate to answer the research questions. This approach gives the research findings high reliability and validity.

Quantitative approach was used because the findings could be generalized to the particular context in which this study is conducted. Quantitative strategy is mainly scientific which means the researcher considered biases and values in order to make the findings replicable.
3.6 Research Strategy
Saunders et al. (2007), describes research strategy as a general plan which shows how the research will be carried out, and how the study answers the question that has been set by the researcher. Saunders et al. (2007), further explains that research strategy will contain clear objectives, derived from research question, specify the source from which researcher intend to collect data and consider the constraints that researchers will inevitably have such as access to data, time, location and money, ethical issues.

Research can be conducted using several strategies including: case study, experiments, surveys, histories, and analysis of archival information (Yin, 1994). Following are the short description of above five research strategies:

3.6.1 Case Study
According to Yin (1994), a case study is an inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident. Additionally, he explains that a case may be an individual, or some event or entity that is less well defined than a single individual. It means that a study may contain more than one single case, and it is defined as a multiple - case design (Yin, 1994).

3.6.2 Experiments
Malhorta, (1996), describes an experiment as a method that involves manipulating one variable to determine if changes in one variable cause changes in another variable. Malhorta, (1996), further explains that the experimental method relies on controlled methods, random assignment, and the manipulation of variables to test a hypothesis and the strategy is used when the researcher needs to compare two variables and examine their cause and effect relationships.

3.6.3 Survey
Zikmund, (1994), describes a survey as a research technique in which information is collected by interviews from a large number of respondents
using a pre-designed questionnaire. According to Yin (1994), a survey has three important characteristics which are:

1) **Purpose:** A survey research is designed to produce quantitative descriptions of some aspects of the population being studied. When employing this type of research technique, the researcher might be interested in either relationships between variables or projecting findings descriptively to a predefined population. Standardised information from customers is required for a survey research. Survey research can be applied when studying individuals, groups, organisations or communities. It can also be applied when studying projects, applications or systems (Yin, 1994)

2) **Procedure:** According to Yin (1994), the main way of collecting information is by asking people structured and predefined questions. Yin (1994) further explains that the answers obtained from the people, which might refer to themselves or some other unit of analysis, constitute the data to be analyzed.

3) **Analyses:** According to Yin (1994), the information is generally collected from a fraction of the study population, but it is collected in such a way that the researcher is able to take a broad view the whole population. In most cases, the sample will be large enough to allow extensive statistical analyses.

**3.6.4 History**

According to Yin (1994), history is a method that deals with the past, and is used when no relevant people are alive to interview or report and this method is specifically used to describe the content, structure and function of the data which collected for research.

**3.6.5 Analysis of Archival Information**

According to Zikmund (1994), analysis of archival information is a technique used for describing the incidence or prevalence of a phenomenon.
The following table displays the conditions that need to be addressed when determining on a strategy.

Table 3.2: Relevant Situation for Different Research Strategies

<table>
<thead>
<tr>
<th>Research Strategy</th>
<th>Form of Research Question</th>
<th>Requires Control Over behavioural System</th>
<th>Focus on Contemporary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, how many, how much</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival Analysis</td>
<td>Who, what, where, how many, how much</td>
<td>No</td>
<td>Yes/no</td>
</tr>
<tr>
<td>History</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case Study</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>


Which strategy can be used depends on the characteristics of the stated research questions. The common type of research questions are formulated as who, what, where, how and why questions. When how- or why- questions are used, the researcher can benefit by using case studies, experiment, or historical studies (Yin, 2003). Moreover, he stated that the basic rationale for case study approach is to assemble information as comprehensively and systematically as possible about the selected case organization (Yin, 1994). In addition, the strengths of case study are its ability to provide rich descriptive detail, conveying a feeling of what it is like to experience an organization, event or problem from the inside. In addition, it allows to discovery of grounded theory, and the comparison of existing literature and theory with what actually happens in reality (Yin, 2003)

As research questions in this study are based on how questions, the investigators have no control over the actual behavioural events, and the focus of the study is on the contemporary event, the case study approach was employed to provide rich descriptive detail to gain a better
understanding of how ICT affects provision of banking services in the banking sector.

3.7 Population
Population, according to Krippendorff (2004) is an entire group about which some specific information is required and recorded. Similarly Marshall and Rossman (1999) define population as the aggregate of all cases that conform to some designated set of specifications. They further state that population has to be stated in terms of three factors, content, extent and time. Maxwell (2005) defines sampling as the selection of part of an aggregate of material to represent the whole aggregate. Based on the definitions of the population, for the purposes of the study, the population was all customers at IDBZ. A sample is used to derive a statistic from which an inference can be made about the population (Gorard, 2003).

3.8 Sample Selection
According to Saunders et al. (2007), sampling is a survey-based research where researcher needs to analyse part of a population to answer the research questions or meet the research objectives. The researcher needs establish the sample for the study after carefully defining the problem. The target population from which the sample is going to come from has to be clearly defined. Sampling is important if there are budget and time constraints which prevent the researcher from surveying the entire population. One crucial advantage of sampling is that it gives higher accuracy and a fast result (Saunders et al., 2007).

When the population is sufficiently small the researcher can include the entire population in the study. This type of research is called a census study because data is gathered on every member of the population. In most cases, the population will be too large for the researcher to attempt to carry out a census then a small, but carefully chosen sample can be used to represent the population. The sample reflects the characteristics of the population from which it is drawn (Saunders et al., 2007)
According to Saunders et al. (2007), sampling method can be categorised into two: *probability* and *non-probability sampling*. Probability sampling involves the selection of each unit within the population with a known chance of being selected. It is this concept of "known chance" that allows for the statistical projection of characteristics based on the sample to the population (Saunders et al., 2007). Sampling error which is the degree to which a sample might differ from the population can be calculated when probability sampling is employed. This is the advantage of probability sampling over non-probability sampling. Probability sampling is most commonly associated with survey-based research where researcher needs to make inferences from the sample about a population to answer the research questions or to meet research objectives. Probability method includes: random sampling; systematic sampling and stratified sampling (Saunders et al., 2007).

Non-probability sampling involves the selection of a sample in such a way that the chance of being selected of each unit within the population is unknown (Saunders, 2003). The selection of the subjects can be random or subjective, but the researcher mainly relies on his/her experience and judgment. The degree to which the sample differs from the population remains unknown as there are no statistical techniques that allow for the measurement of sampling error, therefore, it is not appropriate to project the sample characteristics to the population (Saunders, 2003).

Non-probability sampling provides a range of alternative techniques based on researcher subjective judgment. The researcher uses the subjective methods such as personal experience, convenience expert judgment to select the element in the sample. There are three commonly used non-probability sampling methods: *convenience sampling, judgment sampling* and *quota sampling*.

### 3.8.1 Non Probability Sampling Methods

Under non probability sampling technique the following sampling techniques were considered but were not used because they were deemed to
compromise the findings of the study (Gorard, 2003) thereby reducing the generalizability.

3.8.1.1 Judgmental Sampling
According to Simon (2003), when employing judgemental sampling the representative sample of the population is drawn by using personal judgement. Simon (2003) further contends that the amount of error depends upon the degree of expertise of the person making the selection. In this method judgement is used by the researcher to select the best sampling units to include in the sample.

3.8.1.2 Convenience Sampling
The sample is drawn for the convenience of the researcher and is not representative of the population (Simon, 2003). In this method; the researcher selects items on the basis of convenience. This normally applies when the population is not well defined.

3.8.1.3 Quota Sampling
The population is divided into segments and a quota of observations is collected from each segment (Simon, 2003). Its major disadvantage is the unrepresentative nature of the sample drawn with respect to the population from which it is drawn. However, non-probability samples can be useful in exploratory research to obtain initial impressions of the characteristics of a random variable under study.

3.8.2 Probability Sampling Techniques
Simon (2003) argued that probability sampling techniques include all selection methods where the observations to be included in a sample have been selected on a purely random basis from the population. Probability sampling was the preferred method because it reduces researcher bias (Simon, 2003). The following are the most commonly used probability sampling techniques;
3.8.2.1 Simple Random Sampling
This method ensures that each item in the entire population has an equal chance of being included in the sample (Simon, 2003). This method is used when it is assumed that the population is relatively homogeneous with respect to the random variable under study. This method was not used as the population (IDBZ customers) is not homogeneous.

3.8.2.2 Systematic Sampling
Elements are selected from the population at a uniform interval that is measured in time, order or space. Sampling starts by randomly selecting the first observation. Thereafter subsequent observations are selected at a uniform interval relative to the first observation (Simon, 2003). Hence there is selection bias and not all elements have an equal chance of being selected. The method was not used because it is time consuming and costly (Amin, 2007).

3.8.2.3 Cluster Sampling
The population is divided into clusters, where each cluster is similar in profile to all other clusters. Clusters are then randomly selected for sampling. The sampling units within these randomly selected clusters may then be randomly selected to provide a representative sample from the population (Simon, 2003).

3.8.2.4 Stratified Sampling
Simon (2003) states that stratified sampling entail dividing the population into segments or strata. Each stratum has relatively homogeneous elements. Either a specific number of elements are selected at random from each stratum that corresponds to the proportion of that stratum in the population. To ensure equal representation of the different business units or departments’ customers stratified sampling was used.

3.8.3 Sampling procedure
In order to focus effectively and fulfil the purpose of better understanding the effect of ICT on provision of banking services in our study, probability
sampling method, stratified random sampling was selected for this study. A sample size of 130 was considered to be convincing enough as true representative for the purposes of this study. Simple random sampling was applied when customers were grouped according to different business units they commonly use and branches they use. Customers were surveyed from three branches of the bank in Harare (two) and Bulawayo (one). Inclusion of different cities had the purpose of enhancing the generalisability of the findings. A self-administered interview method was used. However, the interviewer (trained bank staff) was present to help respondents if necessary. Respondents filled in the questionnaires before they entered a particular branch. This ensured that results reflected the respondents overall impression of the bank service quality and not their feelings about a particular service encounter.

Table 3.3: Sample sizes

<table>
<thead>
<tr>
<th>Group of products and services</th>
<th>Sample size</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Harare</td>
<td>Bulawayo</td>
<td>Total</td>
</tr>
<tr>
<td>Treasury (Fixed Term Investments)</td>
<td>20</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>International Banking (FCA, currency switches, Funds Transfers)</td>
<td>30</td>
<td>10</td>
<td>40</td>
</tr>
<tr>
<td>Corporate Banking (Short and medium term loans)</td>
<td>20</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>Infrastructure Projects</td>
<td>20</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>40</strong></td>
<td><strong>130</strong></td>
</tr>
</tbody>
</table>

3.9 **Data Collection Methods**

Data is classified into primary and secondary data. According Merriam (2002), secondary data, is data that is gathered by a researcher from the sources already collected by others for some other purpose, while data is said to be primary if it is collected first hand by the researcher. In this study the primary data was collected through self-administered questionnaires, as well as in depth interviews of ICT staff within IDBZ supplemented by some secondary data gathered from IDBZ documents such as 2011-2015 Strategic Plan, IDBZ Act Chapter 24:11 and 2010 Annual Report. This is in line with Patton (2002)
who observes that data collection instruments mainly consist of questionnaires, interviews and documentation.

### 3.9.1 Data Collection Methods

Data collection methods are highly influenced by the methodology, which is chosen (Saunders et al, 2003),

#### 3.9.1.1 In depth Interviews

In depth Interviews involve primary data gathering through direct questioning (Simon, 2003). In a one to one interview the discussion is of course limited to the interviewer and interviewee. According to Rossman and Rallis (1999) the advantage of using an interview technique is that the respondents can expand on areas of interest and use non-verbal communication such as facial expressions to emphasise their responses. However, interviews are time consuming and expensive to conduct.

Judgmental sampling was used for selecting employees in the bank to be interviewed. Five employees were chosen, one from each of the four departments with the identified group of products and services offered in the bank and one from ICT department. This was done in order for the researcher to find out the ICT systems adopted and implemented by IDBZ in the past two years. These were Head Treasury, Head International Banking, Head Corporate Banking, Infrastructure Projects Coordinator and ICT Systems Executive. The respondents have more than two years working in the ICT department of IDBZ and oversaw the implementation of Rubicon.

#### 3.9.1.2 Questionnaires

Patten (2004) reserves the name questionnaire exclusively for surveys where a person answering the question actually records their own answers. Cresswell (1997) uses it as a more general term to include interviews that are administered face to face or by phone. Questionnaires enable a wider geographical coverage at minimum time and effort. Respondents are free to say what they want, and may decide to remain anonymous. A hand delivered,
self administered questionnaire was used to avoid interviewer bias and to reduce the cost of the survey (White and Yanamadram, 2004).

Although SERVPERF-items provided the basis for development of a measurement tool the scale was adapted by adding, deleting or rewording items to ensure suitability for the research context. The service quality attributes used in this study (a total of 22) are set out in Table 2.2. These items were measured using five-point Likert-type scales from 1 (“strongly disagree”) to 5 (“strongly agree”).

3.10 Validity and Reliability
According to Saunders et al. (2003), paying attention to validity and reliability reduces the possibility of getting incorrect answers.

3.10.1 Validity
It is widely accepted that there are three forms of internal validity – content validity, criterion-related validity, and construct validity and these are interrelated. Saunders et al. (2003), defines validity as the extent to which data collection method or methods accurately measure what they were intended to measure. According to Saunders et al. (2007), validity is concerned with whether the findings are really about what they appear to be about. Yin (1994) states, “no single source has a complete advantage over all others”, therefore validity of a scientific study increases by using various sources of evidence. A good case study should use as many sources as possible (Yin, 1994).

The researcher took the following steps to ensure the validity of this research:

1. The data needed was collected in the format of a structured questionnaire that had been designed based on the literature related to impact of ICT on banking services provision.
2. Pretesting of the questionnaire was done. A pilot test was conducted with the questionnaire using eight IDBZ staff then reviewed and sent to the three branches of IDBZ.
3.10.2 Reliability

Saunders et al. (2003), describes reliability as the degree to which data collection method or methods will yield consistent findings, similar observations would be made or conclusions reached by other researchers or there is transparency in how sense was made from the raw data. Saunders et al. (2003) further explains that reliability can be assessed by the following three questions:

1) Will the measure yield the same results on other occasions?
2) Will other observers reach similar observation?
3) Is there transparency in how sense was made from the raw data?

According to Yin (1994), the role of reliability is to minimize the errors and biases in a study. This implies that reliability is to demonstrate that the operations of the study, such as the data collection procedures, can be repeated with the same result. According to Saunders et al. (2003), there may be four threats to reliability:

1. Subject of participant error, which means that a questionnaire may generate a different result at different times of the week.
2. Subject or participant bias, which is when interviewees may have been saying what they thought their bosses, wanted them to say.
3. Observer error that is different interviewers may approach the questions in different ways.

The work with this research study started with a literature review of ICT and banking services. The literature the researcher came across was from several authors which means that the researcher covered the area of ICT and provision of banking services adequately. As alluded by Yin (1994), this would mean that bias from reading only one author and reading only about one topic, has been minimised. According to Yin (1994) there are other erroneous belief that is to be avoided in order to attain high reliability and one of these is measuring error, which in turn consists of respondent errors, gauging errors and errors that are as a result of interplay between the interviewer and the respondent. Since the researcher used a questionnaire, this latter error was avoided in advance.
The respondent errors are a result of respondents sometimes unable or unwilling to provide truthful answers. To minimize effects of this kind of errors, the researcher was careful about the language and the wording in the questionnaire. Also the use of wording in the questionnaire was of major concern to avoid ambiguous or emotional charged formulations. The researcher chose simple wording and language and was direct and as far as possible without technical terms. Yin (1994), describes gauging errors as errors that arise when a questionnaire entails erroneously formulated question, wrong order of question etc. In this study the gauging errors were dealt with since a standard SERVPERF questionnaire was used.

3.11 Study
Pilot testing of the questionnaire was done. All the pilot test respondents filled in the questionnaire. The pilot test was followed by many revisions as a result of what was observed from the pilot test, before it was sent to respondents. The pilot study was run with eight staff members of IDBZ, and they were asked to check for the wording, coverage, relevancy of the items listed within the questions. Modifications done to the questionnaire and the well-improved questionnaire was developed. By using these tools (reliability, validity and pilot study) the researcher could further analyze the data that the respondents provided him in a more accurate way.

3.12 Data Analysis
According to Miles and Huberman (1994), data analysis can be defined “as consisting of three concurrent flows of activity: data reduction, data display and conclusion drawing/verification”. Data reduction is separate from data analysis, but is an input into data analysis. Miles and Huberman (1994), further state that data reduction stage of the analysis helps the researcher to make the data sharpen, sorted, focused, discarded, and organized in order to be able to draw and verify conclusions.

Data display can be described as a way of organising and compressing the reduced data so that it will make it easier to draw conclusions. The data
display phase is useful when the researcher studies more than one case, a so-called multiple case. In the conclusion drawing and verification the researcher notes regularities, patterns, explanations, possible configurations, casual flows and propositions (Miles and Huberman, 1994).

According to Yin (1994), data analysis involves examining, categorizing, tabulating or otherwise recombining the collected data. Yin (1994) further states that every investigation should have a general analytical strategy in order to determine what to analyze and why. Two general strategies are suggested. The researcher can either:

1. follow the theoretical propositions that led to the case study or
2. develop a descriptive framework to organize the case study.

Yin (1994) provides four different techniques for analyzing the collected data which are applied within the above-mentioned two strategies:

1. Pattern matching, which means to compare an empirical based pattern with a predictable one.
2. Explanation building, which refers to a kind of pattern matching where the goal is to analyze the case study data by building an explanation about the case.
3. Time-series analysis that refers to repeated measures of the dependent variable/variables in order to look at changes over time.
4. Use of program logic models, which is a combination of pattern-matching and time-series analysis where the analysis specifies a complex chain of patterns over time.

Data analysis of this research study is based on the three steps defined by Miles & Huberman (1994) that is, data reduction, data display and conclusion. Statistical Package for Social Sciences (SPSS version 16) was used for analysing the data that was collected and edited. The analysis of data was quantitative as it involved the use of percentages and frequencies. The presentation and analysis of results was achieved through the use of descriptive statistics. In order to examine the extent to which ICT innovations impact on provision of services factor analysis was used. The degree of
relationship between ICT Innovations and provision of banking services was determined by employing spearman correlation and regression analysis.

3.13 Ethical Considerations
The researcher has treated any information he got from any individual confidentially without disclosing the respondents identity, and has been as open minded as possible and express opinions as they are given. The researcher has not modified anything and is very appreciative of all literature that has contributed in any way to our research.

3.14 Chapter Summary
This chapter has looked at the research methodology used in carrying out this study. The research design, research philosophy, research purpose, research strategy, sampling and data collection techniques used in the study were also discussed. The study sample was confined to 130 IDBZ customers drawn from across the various business units and three branches. A self-administered questionnaire was administered. Data collection was triangulated through key informant interviews and desk review.
CHAPTER FOUR

4 RESULTS AND DISCUSSION

4.1 Introduction
This chapter presents a description of the findings and analysis of the research on a concept by concept basis. Findings are analysed in relation to the proposition set out at the beginning of the study. As set out in chapter three, data was drawn from questionnaires, personal key informant interviews and a case study of the organisation. SPSS version 16.0 was used to produce meaningful information from the raw data gathered from the questionnaires. The quantitative data were presented in the form of tables and graphs. Qualitative data from open-ended questionnaires was thematically analysed. Detailed descriptions of the research findings are discussed in relation to other sources of established literature and knowledge on the subject. Data gathered from the research study is presented in the form of tables, graphs and charts with detailed narratives employed to interpret the results.

4.2 Response Rate
Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>Questionnaires Distributed</th>
<th>Questionnaires completed and returned</th>
<th>Response rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>118</td>
<td>90.8%</td>
</tr>
</tbody>
</table>

A total of 130 questionnaires were distributed in the data collection stage of the research to the chosen sample of the study as set up in Chapter three. The Overall response rate achieved was 90.8% as tabulated above. Such high response rates concur with (Buckingham and Saunders, 2004) who recommend that a response rate above 50% is regarded as the minimum for results obtained from the research to be considered accurate and from where inferences on the sample can be made on characteristics of the population.
4.3 Demographics

The following figures and tables show the demographics of the respondents.

Figure 4.1: Gender Distribution

Table 4.2: Distribution of Respondents by Level of Education

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Respondents</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>8</td>
<td>6.8</td>
</tr>
<tr>
<td>Attended College</td>
<td>26</td>
<td>22.0</td>
</tr>
<tr>
<td>Undergraduate Degree</td>
<td>48</td>
<td>40.7</td>
</tr>
<tr>
<td>Post Graduate Degree</td>
<td>36</td>
<td>30.5</td>
</tr>
<tr>
<td>Total</td>
<td>118</td>
<td>100</td>
</tr>
</tbody>
</table>
The important trends from the above tables and graphs on demographics are summarized as follows: Majority of the respondents were male and also graduates with at least a college diploma. The majority of respondents are 26 years and above. Finance Managers is the most common designation followed by other. This is expected as most of IDBZ's clients are managers who will be representing their corporates and high net worth individuals who earns at least US$ 2000 per month, since it is the criteria used by IDBZ to open an FCA for an individual.

### 4.4 ICT Based Products and Services (Innovations) Offered by IDBZ

From the interviews carried to Head of Business Units and Information Systems Executive the following were the established as the forms of electronic delivery channels which are being utilised by the bank’s clients:

- Telephone Banking;
• Electronic Funds Transfer; and
• Electronic Mail.
• Branch Networking

The above mentioned ICT based products and services are expected considering the nature of the bank, that is, being a development bank. This agrees with Agboola (2002) who identified Telephone Banking, Electronic Funds Transfer, and Home and Office Banking (E-mail). Since IDBZ also has FCA accounts for individuals the bank faces stiff competition from commercial banks. So for the IDBZ to be competitive it needs to improve on its electronic delivery channels. As Yasuharu (2000) has pointed out that ICT investment by banks improve competitiveness and increase the variety and quality of services provided.

Table 4.4: Type of ICT Innovation Used by Customers in IDBZ

<table>
<thead>
<tr>
<th>Electronic Delivery Channel</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone Banking</td>
<td>20</td>
<td>17.0</td>
</tr>
<tr>
<td>Electronic Funds Transfer</td>
<td>74</td>
<td>62.7</td>
</tr>
<tr>
<td>Electronic Mail</td>
<td>15</td>
<td>12.7</td>
</tr>
<tr>
<td>Branch Networking</td>
<td>9</td>
<td>7.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>118</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

With respect to the type of ICT innovations used by customers, Electronic Funds Transfer appear to be the most popular and the most frequently used electronic delivery channel in Infrastructure Development Bank of Zimbabwe (IDBZ) with 62.7% of the total respondents. This is unlike commercial banks where ATM is the most accepted and highly used electronic delivery channel (Yasuharu, 2003; Moya et al., 2010; and Amoako, 2012). Branch Networking was indicated as the least used electronic delivery channel at IDBZ. This may be due to the reason that Branch Networking has been recently introduced in IDBZ. Interviews with Heads of Departments and ICT Systems Executive revealed that the bank is at an advanced stage of introducing two other
electronic banking products; Internet Banking and Mobile Banking. Although they were aware of other ICT innovations PC banking technology, they indicated that the bank will not acquire these technologies mainly because they are now being overtaken by Internet Banking. The Heads of Departments and ICT Systems Executive expressed that the bank was committed to provision of quality banking services through the utilisation of ICT innovations.

Basing on above results Electronic Funds Transfer has been found to be most popular service delivery channel, therefore it is important to ascertain the frequency of its usage among bank customers as well as the other delivery channels, the results are summarized in figure 4.3, 4.4, 4.5 and 4.6 below.

![Figure 4.3: Telephone Banking Users per Month](image)

Figure 4.3 shows results on the frequency of Telephone Banking usage among bank customers. Twenty customers representing 17% of the respondents indicated that they use Telephone Banking. Customers use Telephone Banking for bank transactions such as giving instructions on funds transfers, making treasury investments, and requesting accounts statements. Of the 20 respondents, 50% indicated that they use Telephone Banking 6 to 10 times in a month. However, 15%, and 35% of respondents pointed out that, they use Telephone Banking 0 to 5 times and 11 to 15 times every month respectively.
Figure 4.4 shows results on the frequency of Electronic Funds Transfer (EFT) usage among bank customers. Seventy four customers representing 62.7% of the respondents indicated that they use Electronic Funds Transfer. Customers frequently use the EFT for transferring funds to accounts held by other bank which could be theirs or those of companies and/or individuals they do business with. EFT is done through the Real Time Gross Payment (RTGS). Of the 74 respondents, majority (54%) indicated that they use Electronic Funds Transfer 6 to 15 times in a month. However, 14%, 14%, 8% and 11% of respondents pointed out that, they use Electronic Funds Transfer 0 to 5 times, 16 to 20 times, 21 to 25 times and 26 to 30 times every month respectively.
Figure 4.5 shows results on the frequency of Electronic Mail usage among bank customers. Fifteen customers representing 12.7% of the respondents indicated that they use Electronic Funds Transfer. Customers use Electronic Mail for making follow-ups on infrastructure projects they would have submitted for consideration as well submitting further information required by the Bank to appraise projects. Of the 15 customers, indicated that they use Electronic Mail 0 to 5 times in a month. However, 33%, and 27% of respondents pointed out that, they use Electronic Mail 6 to 10 times and 11 to 15 times every month respectively.
Figure 4.6: Branch Networking Users per Month

Figure 4.6 shows results on the frequency of Branch Networking usage among bank customers. Nine customers representing 7.6% of the respondents indicated that they use Branch Networking. Customers take advantage of Branch Networking to deposit and withdraw cash and transfer funds at any of the IDBZ branches from which their accounts are not domiciled. A customer can do banking transaction in Bulawayo while their account is domiciled in Harare without the need to travel to Harare. Of the 9 customers, 56% indicated that they use Branch Networking 6 to 10 times in a month. However, 22% of respondents indicated that, they use Branch Networking 0 to 5 times and another 22% indicated that they use branch Networking 11 to 15 times every month.

4.5 Level of Provision of Banking Services

The customers were asked to rate the 22 items of the SERVQUAL model at five point scale from strongly disagree to strongly agree using the SERVPERF questionnaire. The scores assigned on these scales ranged from 1 to 5 where ‘1’ represent strongly disagree and ‘5’ represent strongly agree. The mean score of these service quality variables have been computed to show how customers perceive service quality at IDBZ through the various aspects of service quality. Tables 4.5 and 4.6 show the mean scores for the 22 items or aspects of service quality and for the 5 service quality dimensions.
<table>
<thead>
<tr>
<th>Service Quality Variables</th>
<th>N</th>
<th>Mean Score</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bank has modern looking ICT equipment</td>
<td>118</td>
<td>3.24</td>
<td>0.781</td>
</tr>
<tr>
<td>The Bank's physical features are visually appealing</td>
<td>118</td>
<td>3.51</td>
<td>0.875</td>
</tr>
<tr>
<td>The Bank's reception desk employees are neat</td>
<td>118</td>
<td>3.52</td>
<td>0.824</td>
</tr>
<tr>
<td>Materials associated with service are visually appealing</td>
<td>118</td>
<td>3.39</td>
<td>0.751</td>
</tr>
<tr>
<td>When the bank promises to do something by a certain date, it does so</td>
<td>118</td>
<td>3.62</td>
<td>0.816</td>
</tr>
<tr>
<td>When you have a problem the bank shows sincere interest in solving it</td>
<td>114</td>
<td>3.79</td>
<td>0.616</td>
</tr>
<tr>
<td>The bank performs the service right the first time</td>
<td>118</td>
<td>3.64</td>
<td>0.958</td>
</tr>
<tr>
<td>The bank provides its service at the time it promises to do</td>
<td>118</td>
<td>3.72</td>
<td>0.665</td>
</tr>
<tr>
<td>The Bank insists on error free records</td>
<td>118</td>
<td>3.96</td>
<td>0.973</td>
</tr>
<tr>
<td>Employees in the bank tell you exactly when the services will be performed</td>
<td>118</td>
<td>3.41</td>
<td>0.879</td>
</tr>
<tr>
<td>Employees in the bank give you prompt service</td>
<td>118</td>
<td>3.59</td>
<td>0.682</td>
</tr>
<tr>
<td>Employees in the bank are always willing to help</td>
<td>118</td>
<td>3.37</td>
<td>0.664</td>
</tr>
<tr>
<td>Employees in the bank are never too busy to respond to your request</td>
<td>118</td>
<td>3.34</td>
<td>0.719</td>
</tr>
<tr>
<td>The behaviour of employees in the bank instils confidence in you</td>
<td>118</td>
<td>3.64</td>
<td>0.724</td>
</tr>
<tr>
<td>You feel safe in your transactions with the bank</td>
<td>118</td>
<td>4.08</td>
<td>1.026</td>
</tr>
<tr>
<td>Employees in the bank are consistently courteous with you</td>
<td>118</td>
<td>3.4</td>
<td>0.668</td>
</tr>
<tr>
<td>Employees in the bank have the knowledge to answer your questions</td>
<td>118</td>
<td>3.58</td>
<td>0.72</td>
</tr>
<tr>
<td>The bank gives you individual attention</td>
<td>118</td>
<td>3.85</td>
<td>0.608</td>
</tr>
<tr>
<td>The bank has operating hours convenient to all its customers</td>
<td>118</td>
<td>3.44</td>
<td>0.832</td>
</tr>
<tr>
<td>the bank has employees who give you personal attention</td>
<td>118</td>
<td>3.48</td>
<td>0.713</td>
</tr>
<tr>
<td>The bank has your best interests at heart</td>
<td>118</td>
<td>3.53</td>
<td>0.824</td>
</tr>
<tr>
<td>The employees of the bank understand your specific needs</td>
<td>118</td>
<td>3.65</td>
<td>0.659</td>
</tr>
</tbody>
</table>
The provision of banking services at the Infrastructure Development Bank of Zimbabwe was found to be 3.58 on average in terms of the 22 SERVQUAL variables as indicated in Table 4.5 above. This means IDBZ customers are generally satisfied with the service delivery. In today’s highly competitive world of business, customer satisfaction can be considered as the essence of success (Vanniarajan and Anbazhagan, 2007). The importance that customers place on service quality attributes is the driver of satisfaction.

The highly perceived service quality variables among the customers in IDBZ are ‘You feel safe in your transactions with the bank’, ‘The Bank insists on error free records’ and ‘The bank gives you individual attention’ since the respective mean scores are 4.08, 3.96 and 3.85. This means customers may visit a bank and feel that their transactions are safe because of the modern ICT equipment they see and core banking system they are told has been installed.

Table 4.6: Perception on Provision of Banking Services among Customers (Dimensions)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles</td>
<td>3.41</td>
</tr>
<tr>
<td>Reliability</td>
<td>3.74</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>3.43</td>
</tr>
<tr>
<td>Assurance</td>
<td>3.68</td>
</tr>
<tr>
<td>Empathy</td>
<td>3.59</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>3.58</strong></td>
</tr>
</tbody>
</table>

The mean scores of 3.74 and 3.68 shows that the highly perceived service quality factors by customers are Reliability and Assurance respectively.
Figure 4.7: Provision of Banking Services based on Reliability Service Quality Dimension

All the service quality variables under the reliability dimension have a mean score above 3.50 on a scale of 1 to 5 where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’. This means the bank is doing well in terms of accurate order, updated content and keeping promises (Raman et al., 2008)

Figure 4.8: Provision of Banking Services based on Responsiveness Service Quality Dimension
The service quality variables under the responsiveness dimension have mean scores of at least 3.20 on a scale of 1 to 5 where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’. This means the bank’s employees are utilising ICT well as they are performing well in terms of giving prompt service, willing to help, telling the customers when the service will be performed and always never too busy to respond to customers.

![Figure 4.9: Provision of Banking Services based on Assurance Service Quality Dimension](image)

The service quality variables under assurance dimension have mean scores of at least 3.50 on a scale of 1 to 5 where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’. This means the bank's employees are utilising ICT well as they are performing well in terms of instilling confidence in customers, making customers feel safe in transactions with the bank, employees being courteous and employees showing knowledge to answer customer questions.
Figure 4.10: Provision of Banking Services based on Tangibles Service Quality Dimension

The service quality variables under tangibles dimension have mean scores of at least 3.20 on a scale of 1 to 5 where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’. This means the bank’s visually appealing and modern ICT is bringing satisfaction to customers.

Empathy 4.11: Provision of Banking Services based on Reliability Service Quality Dimension
The service quality variables under empathy dimension have mean scores of at least 3.20 on a scale of 1 to 5 where 1 is ‘strongly disagree’ and 5 is ‘strongly agree’. This means the bank’s employees are managing to utilise ICT to give individual attention to customers and understanding customers’ specific needs among others.

4.6 Important Service Quality Factors
Factor analysis was used to identify the important service quality factors in IDBZ. The results of the factor analysis showed five important service quality factors in IDBZ namely reliability, responsiveness, assurance, tangibles and empathy. Subsequently, principal component factor analysis was administered with Varimax rotation for the importance scores in the scale. Extraction was initially set to identify the factors with eigen values of and above 1.0. Absolute values were suppressed to 0.4. At the end of the analysis, factor loadings of all items were higher than 0.4 (between 0.571 and 0.893), and the items were grouped under five factors. The factor loading of the service quality variables included in the SERVQUAL five factors, the eigen values and the percentage of variation explained by the service quality factors are presented in Table 4.7
Table 4.7: Important Service Quality Factors in IDBZ

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variables in Service Quality</th>
<th>Factor Loading</th>
<th>Eigen Value</th>
<th>Percent of Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>When you have a problem, the bank shows a sincere interest in solving it.</td>
<td>0.893</td>
<td>5.49</td>
<td>25.3</td>
</tr>
<tr>
<td></td>
<td>When the bank promises to do something by a certain time, it does so.</td>
<td>0.814</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The bank provides its service at the time it promises to do so.</td>
<td>0.723</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The bank insists on error free records.</td>
<td>0.641</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The bank performs the service right the first time.</td>
<td>0.590</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Employees in the bank tell you exactly when the services will be performed.</td>
<td>0.843</td>
<td>3.19</td>
<td>17.4</td>
</tr>
<tr>
<td></td>
<td>Employees in the bank give you prompt service.</td>
<td>0.808</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employees in the bank are always willing to help you.</td>
<td>0.793</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employees in the bank are never too busy to respond to your request.</td>
<td>0.711</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>The behaviour of employees in the bank instils confidence in you.</td>
<td>0.869</td>
<td>2.11</td>
<td>13.2</td>
</tr>
<tr>
<td></td>
<td>Employees in the bank have the knowledge to answer your questions.</td>
<td>0.703</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employees in the bank are consistently courteous with you.</td>
<td>0.634</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>You feel safe in your transactions with the bank.</td>
<td>0.581</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tangibility</td>
<td>The bank has modern looking equipment.</td>
<td>0.802</td>
<td>1.21</td>
<td>10.2</td>
</tr>
<tr>
<td></td>
<td>The bank's physical features are visually appealing.</td>
<td>0.736</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Quality Factor</td>
<td>Description</td>
<td>Eigen Value</td>
<td>Percent of Variation Explained</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-------------------------------</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>The bank's reception desk employees are neat appearing.</td>
<td>0.641</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Materials associated with the service (such as pamphlets or statements) are visually appealing at the bank.</td>
<td>0.571</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>The bank gives you individual attention.</td>
<td>0.849</td>
<td>0.835 2.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The bank has operating hours convenient to all its customers.</td>
<td>0.768</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The bank has employees who give you personal attention.</td>
<td>0.698</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The bank has your best interests at heart.</td>
<td>0.648</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The employees of the bank understand your specific needs.</td>
<td>0.597</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Since Empathy has an eigen value of 0.835 which is less than 1, it means the factors that explains the service quality are four, namely reliability, responsiveness, assurance and tangibles. The four service quality factors explain the service quality variables in IDBZ to the extent of 68.08%. The most important factor is the ‘reliability’ factor. It consists of five variables. The eigen value and the percent of variation explained by this factor are 5.49 and 25.3% respectively. Responsiveness is the second important factor. It consists of four variables. The eigen value and the percent of variation are 3.19 and 17.3% respectively. Assurance and Tangibles are the next two important factors with four variables in each. The first important service quality variable in ‘reliability’ and ‘responsiveness’ are ‘being sincere to solve problems’ and ‘informing customers exactly what they do’ whereas in the case of assurance and tangibles, these are ‘employees are trustworthy’ and ‘up to date equipment’ respectively.
There was a significant positive impact of Telephone Banking on Provision of Banking Services ($r=0.824$, $p$-value$<0.01$). This implied that ICT Innovations enhanced the service delivery at IDBZ. This confirms Amaoko (2012) who said technology has a major impact on the way banking and financial services are delivered.
There was a significant positive impact of Electronic Funds Transfer on Provision of Banking Services ($r=0.857$, $p$-value$<0.01$). This implied that Electronic Funds Transfer enhanced the service delivery at IDBZ.

**Table 4.10: Correlation Matrix for Electronic Mail and Provision of Banking Services**

<table>
<thead>
<tr>
<th></th>
<th>Electronic Mail</th>
<th>Provision of Banking Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Mail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>1</td>
<td>.955**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.</td>
<td>0</td>
</tr>
<tr>
<td>N</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Provision of Banking Services</td>
<td>.955**</td>
<td>1</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>15</td>
<td>118</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed).**

There was a significant positive impact of Electronic Mail on Provision of Banking Services ($r=0.955$, $p$-value$<0.01$). This implied that Electronic Mail enhanced the service delivery at IDBZ.

**Table 4.11: Correlation Matrix for Branch Networking and Provision of Banking Services**

<table>
<thead>
<tr>
<th></th>
<th>Branch Network</th>
<th>Provision of Banking Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Branch Network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>1</td>
<td>.891**</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.</td>
<td>0.009</td>
</tr>
<tr>
<td>N</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Provision of Banking Services</td>
<td>.891**</td>
<td>1</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>0.009</td>
<td>.</td>
</tr>
<tr>
<td>N</td>
<td>9</td>
<td>118</td>
</tr>
</tbody>
</table>
There was a significant positive impact of Branch Networking on Provision of Banking Services \((r=0.891, p\text{-value}<0.01)\). This implied that Branch Networking enhanced the service delivery at IDBZ.

**Table 4.12: Regression Model of Telephone Banking and provision of banking services**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.618</td>
<td>0.247</td>
<td>10.60</td>
<td>0.000</td>
</tr>
<tr>
<td>Telephone Banking</td>
<td>0.085</td>
<td>0.023</td>
<td>3.707</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Telephone Banking linearly and positively affected service delivery \((F=13.741, \text{Sig}=0.001)\). Telephone Banking predicted 34.7% of service delivery at IDBZ.

**Table 4.13: Regression Model of Electronic Funds Transfer and provision of banking services**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>2.919</td>
<td>0.073</td>
<td>40.068</td>
<td>0.000</td>
</tr>
<tr>
<td>Electronic Funds Transfer</td>
<td>0.047</td>
<td>0.004</td>
<td>10.519</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Electronic Funds Transfer predicted 56.6% of service delivery at IDBZ.
Electronic Funds Transfer linearly and positively affected service delivery (F=110.659, Sig=0.000). Electronic Funds Transfer predicted 56% of service delivery at IDBZ.

**Table 4.14: Regression Model of Electronic Mail and provision of banking services**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2.471</td>
<td>0.074</td>
<td>33.59</td>
</tr>
<tr>
<td></td>
<td>Electronic Mail</td>
<td>0.101</td>
<td>0.008</td>
<td>0.937</td>
</tr>
</tbody>
</table>

Electronic Mail linearly and positively affected service delivery (F=151.897, Sig=0.000). Electronic Mail predicted 87.3% of service delivery at IDBZ.

**Table 4.15: Regression Model of Branch Networking and provision of banking services**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2.67</td>
<td>0.218</td>
<td>12.25</td>
</tr>
<tr>
<td></td>
<td>Branch Networking</td>
<td>0.124</td>
<td>0.026</td>
<td>0.924</td>
</tr>
</tbody>
</table>

R-Square= 0.853, Adj. R-Square= F= 23.273, Sig= 0.008
Branch Networking linearly and positively impacted service delivery \((F=151.897, \text{ Sig}=0.000)\). Branch Networking predicted 87.3\% of service delivery at IDBZ.

All the four ICT innovations adopted by IDBZ positively impacted on provision of banking services. This implies that ICT Innovations enhanced the provision of services at IDBZ. This confirms Amaoko (2012) who said technology has a major impact on the way banking and financial services are delivered.

The results are in line with literature as Agboola (2004), pointed out that ICT has continued to have an impact on how corporate relationships of banks are organized worldwide and the variety of electronic tools available to enhance the speed and quality of service provision.

However, most research about effect of ICT on provision of banking services focused on commercial or retail banks and no known research has been done for a development bank. The survival of any enterprise in this knowledge-based economy age depends on how an organisation improves its organisational innovation capability. According to Agboola, (2001), technological being able to take advantage of ICT innovations is the key variable and means of differentiation between organisations that provide services. Agboola (2001) argued that banks can also increase their performance by employing new technologies.

### 4.8 Chapter Summary

This chapter has presented, interpreted and discussed the results collected through a questionnaire and interviews on IDBZ Heads of Business units and ICT Systems Executive, on Impact of ICT on provision of banking services in a development bank in Zimbabwe, that is, IDBZ. The significant finding was that ICT positively affect provision of services or service delivery. The next chapter touches on research conclusions and recommendations.
CHAPTER FIVE

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
In this chapter, the entire research project is summarised, conclusions based on the study are drawn, recommendations are given and limitations experienced during the study are highlighted. The chapter ends by citing the study findings implications on further research. The study confirmed the positive impact of ICT on banking services.

5.2 Conclusion
This research offered insights into the perceptions of banking customers regarding the impact of ICT on provision of banking services in IDBZ. The study focused on customers with IDBZ. Employees of the bank including an ICT department employee were also interviewed to ascertain the type of electronic delivery channels utilised by the Infrastructure Development Bank of Zimbabwe customers and its impact on service delivery.

5.2.1 Provision of Banking Services in IDBZ
It has been revealed that four electronic delivery channels are being used by customers in the Bank. Interviews with bank employees and a survey of customers confirmed that Telephone Banking, Electronic Funds Transfer, Electronic Mail and Branch Networking are electronic delivery channels being used at the bank mainly because of its nature being a development bank rather than a commercial bank. It was found that Electronic Funds Transfer is the most popular electronic delivery channel for IDBZ.

With respect to the type of ICT innovations used by customers, Electronic Funds Transfer is the most popular electronic delivery channel with 62.7% of the total respondents. This is followed by Telephone Banking and Electronic Mail with a representation of 17% and 12.7% respectively. Branch networking is being utilised by 7.6% of the customers interviewed. Maybe this is because
it was introduced recently following the implementation of core banking system, Rubicon.

Electronic Funds Transfer also showed that it is the most frequent used delivery channels with some customers indicating that they use the service more than 25 times in a month. For the other three ICT innovations, no customer indicated that they use them more than 15 times in a month.

5.2.2 Customer Perception on provision of services
The study indicated that IDBZ customers have a positive perception towards service delivery in the bank. The customers perception average based on a five point likert scale on SERVQUAL model using the SERVPERF measurement scale where 1 is strongly disagree and 5 is strongly agree had an average of 3.6 (approximately 4, scale of Agree). This indicates customers are seeing improvement in the service delivery as a result of adoption of ICT innovations.

5.2.3 Important Service Quality Dimension for IDBZ
The factors (service quality dimensions) that explain the service quality at IDBZ were found to be four, namely; reliability, responsiveness, assurance and tangibles. The four service quality factors explain the service quality variables in IDBZ to the extent of 68.08%. Reliability is the most important factor. It consists of five variables. The eigen value and the percent of variation explained by this factor are 5.49 and 25.3% respectively.

5.2.4 ICT and Provision of Banking Services
There was a significant positive impact of ICT Innovations on provision of banking services. All four ICT innovations adopted by the bank showed that they have positive impact on provision of banking services. Their Spearman’s correlation coefficients were as follows: Telephone Banking, 0.824; Electronic Funds Transfer, 0.857; Electronic Mail, 0.955; and Branch Networking, 0.891. ICT innovations linearly and positively affected provision of services. This implies that ICT Innovations enhanced the provision of services at IDBZ. ICT
innovations significantly enhanced the services of IDBZ in terms of telephone banking, electronic funds transfer, electronic mail and branch networking.

5.3 Validation of Research Proposition
The results of the study generally indicate that, these ICT has impacted positively on the provision of banking services.

5.4 Recommendations
The banking industry in Zimbabwe is increasingly becoming highly competitive and with rapid technological evolution, it is no longer a question of whether banks should innovate or not given the benefits of innovation. This study has shown that ICT has a positive impact on provision of banking services at a development bank in Zimbabwe. Banks in order to remain competitive need to be innovative by embracing and utilising the various ICT innovations. For instance, some banks in Zimbabwe through the collaboration with hardware, software, telecommunications and other companies, have introduced new ways for consumers to access their account balances, transfer funds, pay bills, and buy goods and services without using cash, mailing a cheque, or leaving office or home. Development Banks like IDBZ which mainly deal with corporate clients can make use of mobile banking where by customer’s loan application approvals and subsequent disbursement can be confirmed by cell phone message. Internet banking can also help a development bank like IDBZ to create convenience to their customers as they can access their foreign currency account (FCA), loan and/or investments accounts from anywhere in the world. The fact that these ICT based banking products and services (internet and mobile banking) are not at IDBZ and other development banks in the world, this study recommends increased investment in ICT innovations.

5.9 Areas of further study
- The study evaluated the impact of ICT on a development bank based on customer’s perspective. Future studies could be done from an employees’ perspective or to find out how ICT makes a development bank efficient and effective in its operations.
• A similar research may be replicated to study behaviour of a development bank in another country or region in the world to see whether or not the findings vary from the results of the current study
REFERENCES

JOURNALS AND BOOKS
36. Ige, O. (1995), Information Technology in a De-regulated Telecommunications Environment, Keynote address, INFOTECH 95,
First International Conference on Information Technology Management, Lagos, November 16-17.


ARTICLES AND NEWSPAPERS
5. Monetary Policy Statement January 2012
7. National Budget 2012
APPENDIX 1 : RESEARCH QUESTIONNAIRE

Research Questionnaire
EVALUATING THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON THE PROVISION OF BANKING SERVICES IN ZIMBABWE 2011 – 2012: THE CASE OF INFRASTRUCTURE DEVELOPMENT BANK OF ZIMBABWE.

Dear Respondent,

I am a final year Master of Business Administration student with the Graduate School of Management of the University of Zimbabwe. As part of my degree, I am required to submit a dissertation or a research project in any area of interest and I have chosen the above captioned as my research topic. The objective of the study is to evaluate the impact of ICT on provision of banking services. I would appreciate it if you could help me with my data collection by filling out the attached questionnaire. This research is purely academic and is not associated with any commercial company. Please note that all answers will be anonymous and will be used solely for the purposes of this research. All the information given in response to the questionnaire will be treated with utmost confidence. It is however key to highlight the importance of giving your views and opinions in a candid manner. Kindly make time to complete the questionnaire and allow me to collect the questionnaire by 10 July 2011.

Your co-operation and contribution is greatly appreciated.

Yours faithfully

Ephias Chitsa

Contact telephone numbers: 0772407520
SECTION A: BACKGROUND INFORMATION OF RESPONDENTS

1. Gender
   - Male
   - Female

2. Highest level of education.
   - High School
   - Attended College
   - Undergraduate Degree
   - Post Graduate Degree

3. Age
   - 18 – 25
   - 26 – 35
   - 36 – 45
   - 46 and above

4. Designation

<table>
<thead>
<tr>
<th>Designation</th>
<th>Please tick the appropriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO/Director</td>
<td></td>
</tr>
<tr>
<td>Accountant/ Finance Manager</td>
<td></td>
</tr>
<tr>
<td>Administrator</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>
SECTION B: ELECTRONIC DELIVERY CHANNELS

5. The bank has introduced new electronic delivery channels to improve service delivery, among the electronic delivery channels listed below which ones do you use? Please indicate your choice by ticking the appropriate.

<table>
<thead>
<tr>
<th>Electronic Delivery Channels</th>
<th>Tick the Appropriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone Banking</td>
<td></td>
</tr>
<tr>
<td>Electronic Funds Transfer</td>
<td></td>
</tr>
<tr>
<td>Electronic Mail</td>
<td></td>
</tr>
<tr>
<td>Branch Networking</td>
<td></td>
</tr>
</tbody>
</table>

6. During a month, how often do you utilise the electronic delivery you ticked above? Tick the Appropriate

<table>
<thead>
<tr>
<th>Electronic Delivery Channels</th>
<th>Number of times Delivery Channel has been used in a month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telephone Banking</td>
<td></td>
</tr>
<tr>
<td>Electronic Funds Transfer</td>
<td></td>
</tr>
<tr>
<td>Electronic Mail</td>
<td></td>
</tr>
<tr>
<td>Branch Networking</td>
<td></td>
</tr>
</tbody>
</table>
**SECTION C: CUSTOMER PERCEPTION ON BANKING SERVICES**

**Perceptions**

The following statements relate to your feelings about your bank, IDBZ. Please show the extent to which you believe this bank has the feature described in the statement. Here, we are interested in a number from 1 to 5 that shows your perceptions about the bank.

You should rank each statement as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statement</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The bank has modern looking ICT equipment.</td>
<td></td>
</tr>
<tr>
<td>2. The bank's physical features are visually appealing.</td>
<td></td>
</tr>
<tr>
<td>3. The bank's reception desk employees are neat appearing.</td>
<td></td>
</tr>
<tr>
<td>4. Materials associated with the service (such as pamphlets or statements) are visually appealing at the bank.</td>
<td></td>
</tr>
<tr>
<td>5. When the bank promises to do something by a certain time, it does so.</td>
<td></td>
</tr>
<tr>
<td>6. When you have a problem, the bank shows a sincere interest in solving it.</td>
<td></td>
</tr>
<tr>
<td>7. The bank performs the service right the first time.</td>
<td></td>
</tr>
<tr>
<td>8. The bank provides its service at the time it promises to do so.</td>
<td></td>
</tr>
<tr>
<td>9. The bank insists on error free records.</td>
<td></td>
</tr>
<tr>
<td>10. Employees in the bank tell you exactly when the services will be performed.</td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Score</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>11. Employees in the bank give you prompt service.</td>
<td></td>
</tr>
<tr>
<td>12. Employees in the bank are always willing to help you.</td>
<td></td>
</tr>
<tr>
<td>13. Employees in the bank are never too busy to respond to your request.</td>
<td></td>
</tr>
<tr>
<td>14. The behaviour of employees in the bank instils confidence in you.</td>
<td></td>
</tr>
<tr>
<td>15. You feel safe in your transactions with the bank.</td>
<td></td>
</tr>
<tr>
<td>16. Employees in the bank are consistently courteous with you.</td>
<td></td>
</tr>
<tr>
<td>17. Employees in the bank have the knowledge to answer your questions.</td>
<td></td>
</tr>
<tr>
<td>18. The bank gives you individual attention.</td>
<td></td>
</tr>
<tr>
<td>19. The bank has operating hours convenient to all its customers.</td>
<td></td>
</tr>
<tr>
<td>20. The bank has employees who give you personal attention.</td>
<td></td>
</tr>
<tr>
<td>21. The bank has your best interests at heart.</td>
<td></td>
</tr>
<tr>
<td>22. The employees of the bank understand your specific needs.</td>
<td></td>
</tr>
</tbody>
</table>

Thank you for your time.