

## **Impact on Information Technology on Public Sector Banks In India With Special Reference To Bangalore**

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### **Abstract**

The Banking sector has been growing without leaps and bounces and catering to the needs of various segments of the society. In recent scenario, the financial institutions have been making rapid straights by using IT as a platform and endeavoring to scale higher heights. An attempt has been made in this examination to inspect various groundbreaking instruments that have been introduced by public sector Banks. It has been attracted many foreign banks to India, thereby opening up new markets, new product development and efficient delivery channels for the banking industry and Financial Institutions. The IT allows Public Sector banks to create business building's lobby without having to hire manpower for manual operations. The branches are running on the concept of 24 X 7 employed, made possible by the use of Tele-banking, ATMs, Internet banking, and Mobile banking and E - banking. This IT Technology driven delivery channels are being used to reach out to huge number of customers at lower cost and in most efficient manner. The selected customers of PSBs have felt the positive impact of technological resolutions implemented by PSBs. The customers of PSBs of today have a virtual list of options far as delivery linkages are concerned and all these are the benefits of Information Technology.

**Keywords:** Internet banking, Mobile banking Risk Management, Knowledge Management, Retail Banking, Financial Inclusion

### **Introduction**

IT has brought a complete paradigm shift in the functioning of banks and delivery of banking services. Gone are the days when every banking transaction required a visit to the bank branch. Today, most of the transactions can be done from the home and customers need not visit the bank branch for anything Technology is no longer an enabler, but a business driver. It has also improve the overall performance and

processes of Public Sector Banks in India, via the use of innovation and creativity pertaining to IT by PSBs, this as a result has led to smooth, easy and convenient way of banking with adequate and quality service to customers, which has also paved way for efficiency and effectiveness to banking in India. Banking operation in India is becoming highly IT based this is because of its inter-sectoral link and as it appears to be reaping from technology revolution, as it is seen by its application in all areas of its activities. IT has provided self-service facilities from where prospective customers can easily complete their account opening documents directly online. IT in India banking system and operation has been acknowledged as the life wire of banks in the financial sector as it promotes and facilitates the performance of banks in the country. So therefore calls for as a result, there is a pre-requisite need to embrace information technology. It is in view of this that this research work attempts to examine the impact of IT on the performance of banks in India today. Information communication technology has played a prominent role in all areas of human life but the breakthrough of social progress and the vigorous development in technology has immeasurably increased the role of information in every facet of human life. IT has brought enormous changes, challenging how organizations are structured and how businesses are run. IT is continually evolving, breaking new barriers, defining new horizons and bringing new dimensions to our lifestyle. IT can simply be defined as a systematized body of tools, techniques and infrastructure for generating, collecting, storing, processing and transmitting information and data. In the 1990s, advances in technology made possible many innovations in programming languages that even the most optimistic of technology enthusiasts would have thought impossible only a few years earlier. Perhaps the greatest IT innovation of today is the 'Information Superhighway'. With the full integration of telecommunications and computer technology have come now new but distinct technologies such as the Internet, GroupWare and multimedia. Today, as we move into the new millennium, the new competitive weapon is networks and the velocity of data throughput in intranets and extranets, and around the world, through the internet. The total breakthrough in IT emerged in the mid-1990s. This period was the era of information super highway which organizations use to expand business frontiers by using the new technologies to exploit opportunities.

### **Statement of The Problem**

IT is seen as the backbone of the financial system in the economy and could also be referred to as the life-line of the economy therefore the success of an economy is solely based on its financial system which out rightly is reference still being made to the past, to do with the banking performance in the economy. A broad opening in technology has been experienced in the world for banks and they are currently taking advantage of these innovations to provide better improved customer and more efficient services that will enhance productivity. Banking has come of age and as such, competition has alerted banks to look for innovations that will keep their customers and even win more customers. As a result of the need for efficiency and effectiveness of IT on PSBs, the web was introduced and has been used mostly for commercial purposes through internet banking and information technology. The

adoption of IT in the banking sector is attributable owing to the fact that, linguistic barriers needed to be put to an end to enable easy and cheaper communication during transaction, to foster customer-bank relationship, increase customer satisfaction, improve operational efficiency, reduce the running cost, reduce transaction time, give banks competitive edge, provide security to investors fund and promotion of other financial services. This cloudy atmosphere therefore provides a fertile ground for the researcher to examine the role of IT in the banking sector, especially its impact on PSBs, which will be used as a case study for this research so as to realize its significant impact and short and long term goals in their operation in order to guarantee their profitability and growth.

India's poor infrastructures have been identified as the first major challenge in banks. Reports have it that in India, there are only one computer and four main telephone lines per thousand people. India has very low internet access with less than one internet service provider per thousand people. The cause for such low internet access is the ineffective implementation of information technology. The challenges being faced by Indian banks in their attempt to ensure a smooth exchange of electronic data and information towards the need to build a better infrastructure that will serve as backbone for communication within the banks. The need to collaborate in sourcing for new technological equipment that will provide common standard. The need to get better at IT system development and operation by bank management. The need to impress by improving the present telecommunications infrastructure. To combat these challenges, the following were proffered. There should be government and public awareness to attract long term investments in the telecommunication industry. The emphasis should be set on the importance of maintaining existing infrastructure and equipment.

## **Literature Review**

IT (IT) is very powerful in today's world, and financial institutions are the backbone of the Indian economy. Indian Banking Industry today is in the midst of an IT revolution. Nearly, all the nationalized banks in India are going for IT based solutions. The application of IT in Banks has reduced the scope of traditional or conventional banking with manual operations. Nowadays banks have moved from disbursed to a centralized environment, which shows the impact of IT on banks. Banks are using new tools and techniques to find out their customers need and offer them tailor made products and services. The impact of automation in banking sector is difficult to measure.

Today's business environment is very dynamic and it undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. Business organizations, especially the banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. IT is at the center of this global change curve. IT (IT) is the bedrock for national development in a rapidly changing global environment, and this challenges us to devise bold and courageous initiatives to address a host of vital socio-economic issues such as reliable infrastructure, skilled

human resources, and other essential issues of capacity building. In addition, many banks have installed up-to date modern computers that will enable them achieve communication and multimedia connection on the Extranet, Intranet and Internet. This study analyzes the concept of e-CRM in Indian banks from its various dimensions covering specifically its need, process, present status and future prospects. KPMG, "Technology enabled transformation in Banking",

**Morufu and Taibat, (2012)** researched on banker's perception on IT in India purposely to find out how bankers perceive the benefits and threats associated with IT by investigating banks employees' perception on electronic banking and its implications on bank service delivery. The study therefore concluded that 'government access to data' appears as the most important benefit and risk respectively while reduced. HR charge high costs for services that are least important for benefits and risk associated with electronic banking. In my own study a lot of research work has to be done in order to combat the challenges of IT faced by Public Sector Banks and other financial institutions in India, there is need for banks and the government to educate the public in the use of online banking products, to invest more into information communication technology infrastructure and for the government to reduce tax of information communication technology gadgets.

The Economic Times Banking Technology, Conclave was conducted in 2011 and concluded that IT in banking is fast evolving. From enabling banking services to driving transformation in the industry, IT holds a promise to change the face of banking in the next few years. New entrants are looking to leverage their existing strengths in the Indian banking arena. The opportunity available to these entrants through leveraging their understanding of technologies and markets they operate in, promises innovative business models with a focus on delivering customer value. The pace of change aided by regulatory directions will push banks to direct their strategies to a customer centric focus over the next four years.

**Uppal R.K. (2010)** studied the extent of mobile banking in Indian banking industry during 2000-2007. The study concludes that among all e-channels, ATM is the most effective while mobile banking does not hold a strong position in public and old private sector but in new private sector banks and foreign banks m-banking is good enough with nearly 50 pc average branches providing m-banking services. M-banking customers are also the highest in e-banks which have positive impact on net profits and business per employee of these banks. Among all, foreign banks are on the top position followed by new private sector banks in providing banking services and their efficiency is also much higher as compared to other groups. The study also suggests some strategies to improve m-banking services.

**Womboh and Abba, (2008)**, believed that information communication technology (ICT) and IT are similar concepts that can be used interchangeably.

**Mittal, R.K. & Dhingra, S. (2007)** studied the role of technology in banking sector. They analysed investment scenario in technology in Indian banks but this study was related to the time period before the IT Act and at that time technology in Indian banks was very low. But both the researchers nicely presented their views.

**Padhy, K.C. (2007)** studied the impact of technology development in the banking system and he also highlights the future of banking sector. The core competencies will

provide comparative advantages. However, paper based transactions are now being replaced by electronic-based transactions.

**Igwe, (2005)**, noted that the advent of the electronic mail and personal computers on every desk, the internet and its application to banking have produced amazing results. IT to business today is widely acknowledged, while large business have been using computers for some time now due to improvement in information technology. IT strategy has been emphasized in different area both empirical and prescriptive research studies.

**Woherem, (2000)**, opined that Indian banks since 1980s have performed better in their investment profile and use of information communication technology systems, than the rest of industrial sector of the economy. The two studies above provides a basis to which information technology, (IT) has changed the processes and operation of Public Sector Banks in India. IT simply refers to as the gathering, storing, manipulating and transferring information. It is the automation of process, controls and information production using computers, telecommunication, software and ancillary equipment such Automated Teller Machine and Debit Cards. It is a term that generally covers the harnessing of electronic technology for the information needs of a business at all levels. The author claimed that only banks that overhaul the whole of their payment and delivery systems and apply IT to their operations are likely to survive and prosper in the new millennium. In his statement, he advises banks to re-examine their service and delivery system in order to position them within the framework of the dictates of the dynamism of information technology. The banking industry in India has witnessed tremendous changes linked with the developments in IT over the years. The quest for survival, global relevance, maintained of existing market share and sustainable development has made exploit action of the many advantages of IT through the use of automated devices imperative in the industry. This study therefore evaluates the response of Indian banks to this new trend and examines the extent to which they have adopted innovative technologies in their operators and the result effect.

**Laudon D. and Laudon J. (2001)** declared that Information and Communication Technology deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another.

### **Need & Scope of The Study**

The bank performance is weighted before and after the incorporation of IT into the system and it concerned with employees and the customers reacting to this new transformation. We will also consider if investment made in IT was worth the end result achieved. We will also endeavor to expatiate on the new facilities leading to the assimilation of IT in the banking industry in India. IT has improved customers knowledge about the use of computer and other gadgets through which customers of a bank can access their bank account and make other payments anywhere in the world. IT has also enhanced government work via reliable infrastructure, skilled human resources, open government and other essential issues of capacity building and also

developing centres to improve IT capabilities especially at zonal, state and local levels.

The purpose of this research is a random sampling technique of a bank that has been selected, the population and sample size of this project is based public sector banks which will be adopted for the questionnaire both to the employer and customers of the selected banks. This research work will examine the impact of IT in Public Sector Banks in India. The method employed to examine the impact of IT on Public Sector Banks in India shall be the survey method. Data collected from the questionnaire shall be presented using with the aid of manual and electronic application such as the Statistical Packages for Social Sciences (SPSS), while the hypotheses would be tested using the T-test statistical method and linear regression method.

### **Objectives of The Study**

The general purpose of this study is to examine the role of IT in commercial banking in India. The aim of the study was to determine the significant role of IT in commercial banking in India. It will examine how IT has enhanced the growth of Public Sector Banks in India. It will evaluate the extent to which job satisfaction of the banks has been influenced and affected ever since the introduction of modern IT on PSBs. In this regard the main objective of this study includes:

1. To know the structure and performance of banking industry towards mobile and internet banking activities in the study area.
2. To examine the significant role of IT in Selected banks in Bangalore
3. To determine the extent to which IT has contributed to customer satisfaction and banks performance.
4. To determine how skillful and knowledgeable the staff are in the use of IT in PSBs.

### **Research Questions**

1. To what extent does IT have any effect on the performance of Public Sector Banks in India?
2. To what extent has IT devices (computer, office automation) help bank staffs in the operations of their duties

### **Research Hypothesis**

In order to carry out this research the following hypotheses have been postulated.

1. The Null ( $H_0$ ) Hypothesis
2. The Alternate ( $H_1$ ) Hypothesis

The null hypothesis states a conjecture in a negative form while the alternate states a conjecture in a positive form. For the purpose of this study, the hypothesis testing shall be stated thus:

**Hypothesis 1:**

1. **H<sub>0</sub>**: The use of IT does not have a significant effect on the operation of PSBs.
2. **H<sub>1</sub>**: The use of IT has a significant effect on the operation of PSBs.

**Hypothesis 2:**

1. **H<sub>0</sub>**: IT devices do not help bank staffs effectively in the performance of their duties.
2. **H<sub>1</sub>**: IT device has helped bank staffs effectively in the performance of their duties.

**Methodology of The Study**

Research method is a systematic process of collecting, presenting, analysing and interpreting data for the purpose of arriving at dependable solutions to human problems. Methodology is therefore concerned with the study of the research methods in a research of this nature, it is necessary to define the research design, area of the study, population of the study, sample size and sample size determination instrument for data collection, validation of instrument, reliability of research instrument.

In order to access the perception of banking customers in India with respect to the banking services rendered, a questionnaire survey is conducted. Some questionnaires will also be issued to the bank managers, employees and I.T staffs in order to get an appreciation of what type of I.T systems and electronic application services were available in the chosen banks. The responses were measured with a five-point rating scale, where (SA)=5 Strongly Agree, (A)=4 Agree, (N)=3 Neutral, (D)=2 Disagree, (SD)=1 Strongly Disagree. The information will then be retrieved from the bank after a stipulated period of time. The information will be observed, analyzed, compared, contrasted and conclusions will be arrived at. This conclusion will be derived from the questionnaires and most likely to provide answers to questions posed by this research. This will help to clarify and broaden our sense of direction in this research work.

**Sources of Data**

The source of data for a research work was grouped into two, namely; Primary sources and Secondary sources. But for this research project, the primary data shall be the basis of this research work. The data shall be generated by means of a structured questionnaire instrument. The questionnaire shall be divided into two sections; the first section shall collect the personal data of the respondents while the second section shall focus on the subject matter of the study. The questionnaire to be used shall be self-administered and a total of one thousand (1000) to bank staffs for the purpose of this study. The sampling shall be done randomly such that the respondents shall cut across various departments and levels. The secondary sources of data were mobilized from text books, journal, websites, annual reports, audit reports, newspaper and internet sources.

## **Definition of Terms**

### **A. IT in Banking**

Indian banking industry is in the midst of an IT revolution and combination of regulatory and competitive reasons has led to increasing importance of total banking automation, which used the right technology to supply timely information will see productivity increase and thereby gain a competitive edge. To compete in an economy which is opening up, it is very important for the Indian Banks to observe the most modern technology and modify it to suit their environment. It offers a chance for banks to build new systems that address a wide range of customer needs including many that may not be imaginable today.

### **B. Automatic Teller Machine (ATM)**

Automatic Teller Machine is the most popular device in India, which enables the customers to withdraw their money 24 hours a day 7 days a week. It is a device that allows customer who has an Automatic Teller Machine (ATM) card to perform routine banking transactions without interacting with a human teller. In addition to cash withdrawal, Automatic Teller Machines (ATMs) can be used for payment of utility bills, funds transfer between accounts, deposit of cheques and cash into accounts, balance enquiry etc.

## **Population of The Study and Sampling Size**

Population refers to the total number of cases in the focus of interest. The population of this research work will focus mainly on PSBs in Bangalore. This State bank of India was selected based on its oriented technology driven state, profitability, large capital base and reliable network of branches in Bangalore. A total of one thousand (1000) questionnaires were issued to both customers and staffs of selected bank's branch at Bangalore.

## **Operationalization of The Research Topic**

The structure of the research topic is to identify the variables involved in this project that is the dependent variables and the independent variables. Therefore, these variables are classified into two namely: The dependent and the independent variable. Y is the dependent variable which has to do with the (effect), while X is the independent variable which has to do with (cause). In other words, X is the cause variable while Y is the effect variable.

## **Sampling Technique**

Data for this project were collected, using a non-probability sampling method. Here, the sampling selection was based on the subjective choice of the researcher as to which elements best provide desired basis and probability of good outcome.



### **Description of Questionnaire**

The data collection instruments were used through well-structured questionnaire and it would be administered by the selected respondents in the study area. The questionnaire shall contain twenty (22) items divided into two sections. The first sections shall focus on questions on the personal information of the respondents while the second section shall be devoted to the questions that relate to the subject matter based on the research questions that were stated earlier. The questionnaire would be as simple as possible so that the respondents could supply the appropriate answer to each question.

### **Validity and Reliability of Instruments**

Validity refers to the degree with which a research instrument measures what it purports to measure as well as the population it is intended for. It refers to the truthfulness of the instrument and population of study. It implies that it should measure the characteristics it is intended to measure. The validity test used in this research is content (face) validity. Content validity is the extent to which the instrument measures the overall appearance and subject matter in line with the set of objectives of the study. In other words, the items set or statements made should reflect the purpose of the envisaged problem of the research study (objectives). In carrying out the test, expert opinion was obtained from my project Supervisor in evaluating the relevance of the items to the characteristics being measured.

Reliability on the other hand is the degree of stability of the measure of variables or research instruments. A test is said to be reliable if it measures the same variable at different times to the same set of respondents and results which are consistently similar. The test retest method involves measuring the reliability of the test twice to the same individual sample at different times. Thus the two scores obtained from the test are gathered together and correlated so as to determine the relationship that exist between the first test score and the retest score. The validity of the research instrument is established, the content validity and construct validity were implemented such that the statement and questions were hypothetical in nature so that it measure exactly what it intends to measures. In establishing the reliability, the following was implemented: the questionnaire item were placed on a scale of (SA) strongly agree, (A) agree, (N) neutral, (D) disagree, (SD) strongly disagree.

### **Actual Field Work**

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

### **Limitations of The Study**

The respondents were comprised of bank staffs and customers numbering 1-1000. It will examine the extent to which banks have embraced IT as well as determine the role IT has had on the customer. This study may be limited due to slow response of some banks in giving out information and low co-operation on the part of the members of the public.

### **Method of Data Presentation, Analysis and Interpretation**

Data presentation gives a good description into the entire research work. It focuses on the statistical instruments used, since variables are involved in this research work, the data collected will be converted into normal or ordinal figures by the application of predetermined weighting on them. This is because data that are collected are presented in forms that would enable them to be easily analyzed in terms of interpretation. The method of presentation addresses how the data collected are disclosed to the public and presented to aid analysis.

The researchers presented the data obtained via the questionnaire with the use of descriptive statistics comprising the sample percentage and tables, and pie chart presentation for adequate understanding of the data. The adoption of data presentation that will be used for this research work is the T-test method, because we want to know how IT has been able to impact more on the services operation provided by Public Sector Banks in India. The data collected were sorted out into different categories of rows and columns, displaying facts and figures. For proper analysis however, only the data in direct relation with the hypothesis formulated were considered. Statistical Package for Social Sciences (SPSS) version 21.0 was used in analyzing the data collected. This package was used to aid the analysis of the collected data for the study. In order to analyze and interpret appropriately the responses from the respondent, the parametric and non-parametric tools were used. It shall be tested using the t-test statistical method and linear regression.

### **Instruments of Data Analysis**

The responses to the questions on the questionnaire shall be analyzed using the T-test and linear regression method of analyzing data with the aid of manual and electronic application such as the Statistical Packages for Social Sciences (SPSS). SPSS is an integrated system of computer programs specifically conceived and designed for the analysis of social and behavioral science research data and information.

### **Analysis of Data & Interpretation**

The data were collected from questions laid out in the questionnaires distributed to the respondents. In order to present the data, analyze the data collected through questionnaires; all questions in the questionnaire were analyzed including the ones with close relationship with the research questions, objectives as well as hypothesis,

through the Software Package for Social Science (SPSS) after which the results were interpreted. The hypothesis testing was conducted using the T-test, appropriate interpretation discussion were made there on according to the result of the testing. Out of 1000 questionnaires, 940 were returned from the respondents. This gives a response of 94%. This was a good result as a result of follow up and the non-retrievable questionnaires were as a result of the negligence of bank staffs and customers to fill their received questionnaire.

**Section A Data Presentation-Preliminary**

**Table 1:** Rate of Response by Respondents

Questionnaire	Respondents	Valid Percentage (%)
Returned	940	94
Not Returned	60	6
<b>Total</b>	<b>1000</b>	<b>100</b>

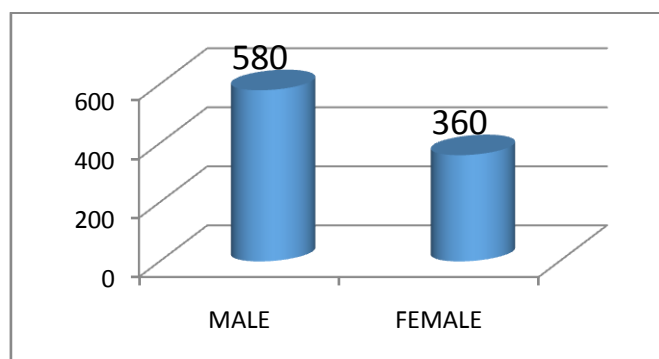
*Source: Data Compiled from Field Survey (2014)*

The above table reveals that 1000 questionnaires were distributed and 940 of these questionnaires were returned, showing average return rate 94% questionnaires. The amount retrieved thus represents about 94% of total questionnaire administered, and is a reasonable level upon which research can be based and valid conclusions drawn from the research.

**Table 2:** Gender of the Respondents

S.No		Frequency	Percent	Valid Percent	Cumulative Percent
1	MALE	580	61.7	61.7	61.7
2	FEMALE	360	38.3	38.3	100.0
Total		940	100.0	100.0	

*Source: Field Survey, (2014)*

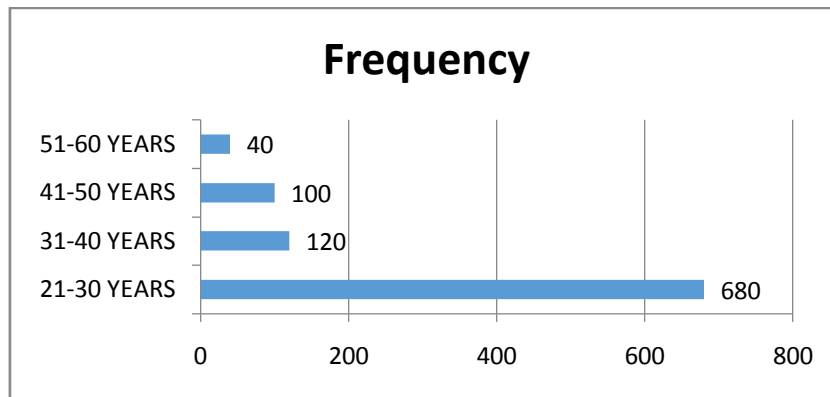


Shows that 580 out of the total of 940 respondents were males, representing approximately 1.7% of the entire sample size, while 360 were females, representing approximately 38.3% of the sample size.

**Table 3:** Age group of the Respondents

Age of the Respondents		Frequency	Percent	Valid Percent	Cumulative Percent
1	21-30 YEARS	680	72.3	72.3	72.3
2	31-40 YEARS	120	12.8	12.8	85.1
3	41-50 YEARS	100	10.6	10.6	95.7
4	51-60 YEARS	40	4.3	4.3	100.0
Total		940	100.0	100.0	

Source: Field Survey, (2014)

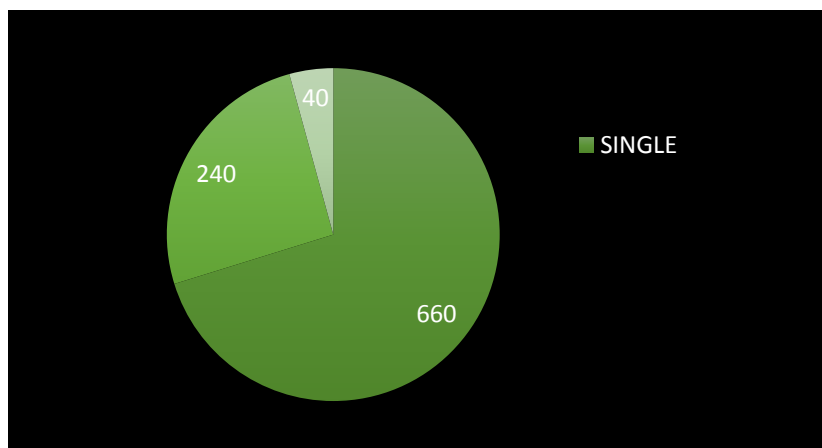


From the above table, it can be deduced that out of the 94 respondents, 68 were between 21-30 years representing (72.3%), 12 were between the ages of 31-40 years representing (12.8%), 10 were between the ages of 41-50 years representing (10.6%), and 40 were between the ages of 51-60 years representing (4.3%).

**Table 5:** Marital status of Respondent

S.No	Marital status	Frequency	Percent	Valid Percent	Cumulative Percent
1	SINGLE	660	70.2	70.2	70.2
2	MARRIED	240	25.5	25.5	95.7
3	DIVORCED	40	4.3	4.3	100.0
Total		940	100.0	100.0	

Source: Field Survey, (2014)

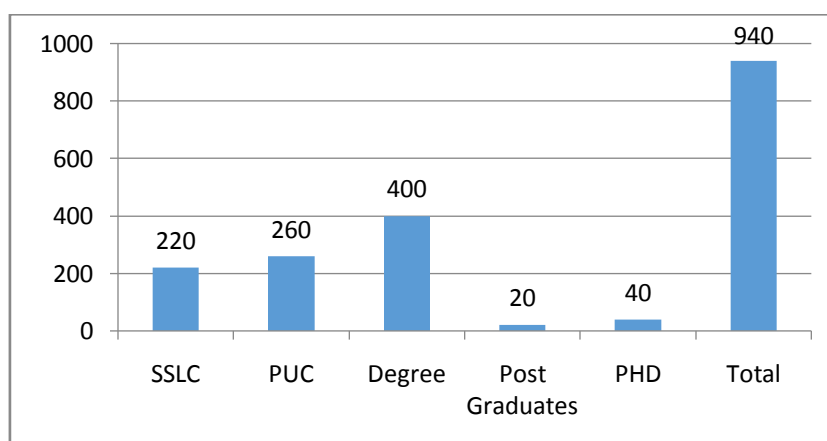


it can be deduced that 660 respondent are single representing (70.2%), 240 respondents are married representing (25.5%), 40 were divorced representing (4.3%).

**Table 5:** Academic Qualification of Respondents

Education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SSLC	220	23.4	23.4	23.4
	PUC	260	27.7	27.7	51.1
	Degree	400	42.6	42.6	93.6
	Post Graduates	20	2.1	2.1	95.7
	PHD	40	4.3	4.3	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)



it can be deduced that out of the 940 respondents, 220 of the respondents have only SSLC representing (23.4%) of the total respondents' population, 260 of the respondents have only PUC representing (27.7%), 400 of the respondents have only

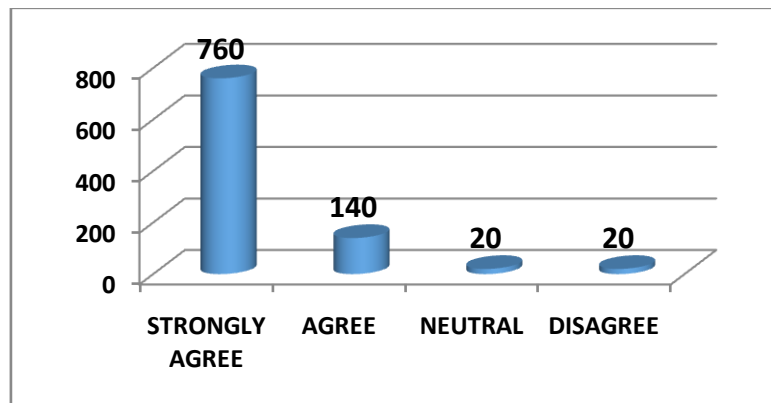
Degree representing (42.6%), 20 of the respondents have only Post Graduates representing (2.1%), 40 of the respondents have only Ph.D. representing (4.3%).

### Hypothetical Questions

**Table 6:** IT and computer have really helped impacted banks operation positively.

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	760	80.9	80.9	80.9
	AGREE	140	14.9	14.9	95.7
	NEUTRAL	20	2.1	2.1	97.9
	DISAGREE	20	2.1	2.1	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)



it can be deduced that out of the 940 respondents, 900 of the respondents agreed that IT and computer have really impacted banks positively representing (95.8%), 20 of the respondent were neutral representing (2.1%), and 20 of the respondents disagree representing (2.1%).

**Table 7:** IT has impacted banks performance in any aspect

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	40	4.3	4.3	4.3
	AGREE	60	6.4	6.4	10.6
	NEUTRAL	40	4.3	4.3	14.9
	DISAGREE	440	46.8	46.8	61.7

	STRONGLY DISAGREE	360	38.3	38.3	100.0
	Total	940	100.0	100.0	

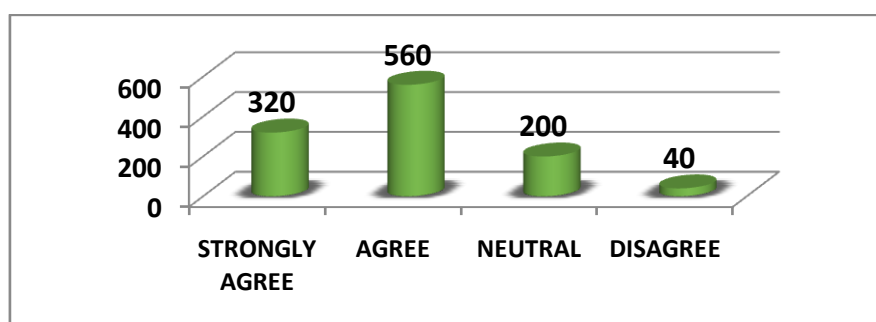
Source: Field Survey, (2014)

it can be deduced that out of the 940 respondents, 100 of the respondents agreed that IT do not impact banks operation in any aspect representing (10.7%), 40 of the respondents were neutral representing (4.3%), and 800 of the respondents disagree representing (85.1%).

**Table 8:** Efficient service delivery in banks.

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	320	34.0	34.0	34.0
	AGREE	560	59.6	59.6	93.6
	NEUTRAL	200	2.1	2.1	95.7
	DISAGREE	40	4.3	4.3	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)



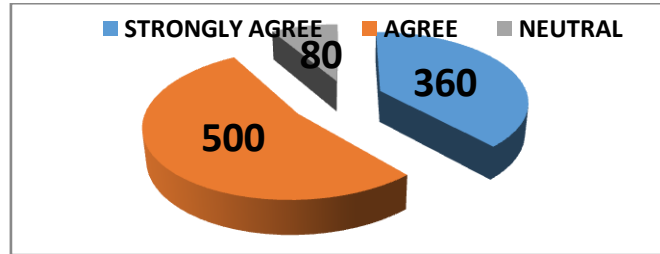
it can be deduced that out of the 940 respondents, 880 of the respondents agreed that they enjoyed prompt and efficient service delivery by banks representing (93.6%), 20 of the respondents were neutral representing (2.1%), and 4 of the respondent disagree representing (4.3%).

**Table 9:** We should encourage workers and customers to patronize banks

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	360	38.3	38.3	38.3

	AGREE	500	53.2	53.2	91.5
	NEUTRAL	80	8.5	8.5	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)

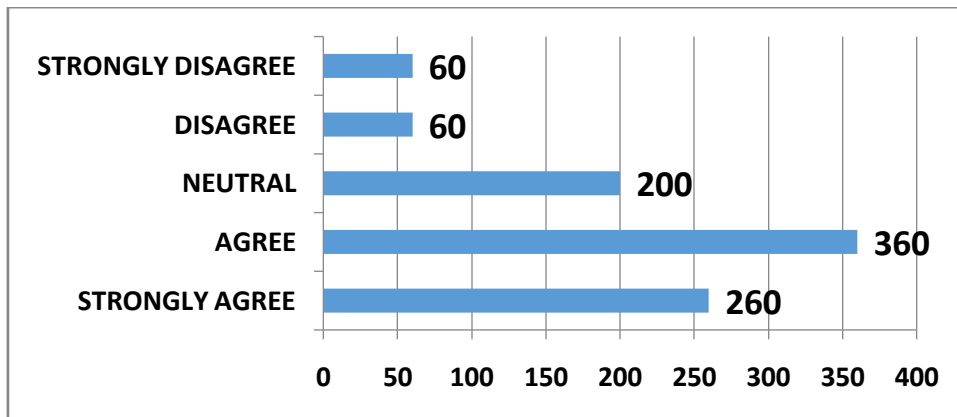


it can be deduced that out of the 940 respondents, 860 of the respondents agreed that we should encourage our colleagues to patronize banks representing (91.5%), and 80 of the respondent were neutral representing (8.5%).

**Table 10:** I effectively receive the details of my transaction through my E-mail.

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	260	27.7	27.7	27.7
	AGREE	360	38.3	38.3	66.0
	NEUTRAL	200	21.3	21.3	87.2
	DISAGREE	60	6.4	6.4	93.6
	STRONGLY DISAGREE	60	6.4	6.4	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)





it can be deduced that out of the 940 respondents, 620 of the respondents agreed that they receive the details of their transaction through e-mail representing (66%), 200 of the respondents were neutral representing (21.3%), and 120 of the respondents disagree representing (12.8%).

**Table 11:** Savings and withdrawing money is time consuming with the bank

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	80	8.5	8.5	8.5
	AGREE	440	46.8	46.8	55.3
	NEUTRAL	240	25.5	25.5	80.9
	DISAGREE	120	12.8	12.8	93.6
	STRONGLY DISAGREE	60	6.4	6.4	100.0
	Total	940	100.0	100.0	

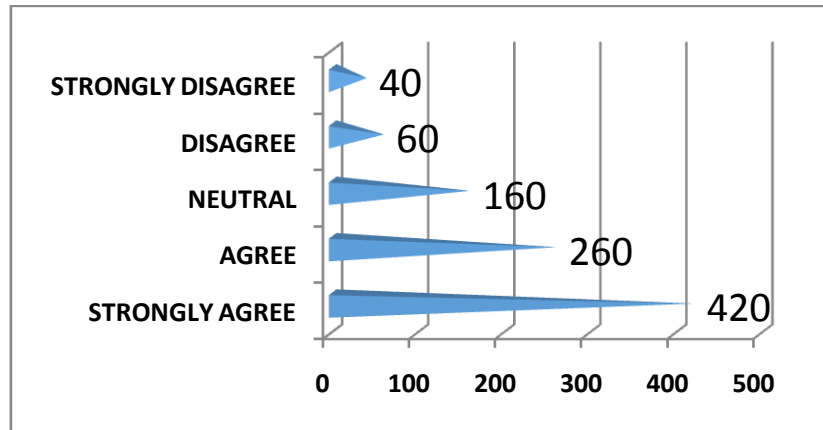
*Source: Field Survey, (2014)*

it can be deduced that out of the 940 respondents, 520 of the respondents agreed that saving and withdrawing money is time consuming with the bank representing (55.3%), 240 of the respondents were neutral representing (25.5%), and 180 of the respondents disagree representing (19.2%).

**Table 12:** prompt and efficient service delivery from the bank's ATM services

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	420	44.7	44.7	44.7
	AGREE	260	27.7	27.7	72.3
	NEUTRAL	160	17.0	17.0	89.4
	DISAGREE	60	6.4	6.4	95.7
	STRONGLY DISAGREE	40	4.3	4.3	100.0
	Total	940	100.0	100.0	

*Source: Field Survey, (2014)*



It can be deduced that out of the 940 respondents, 680 of the respondents agreed that they enjoy prompt and efficient service delivery from bank's ATM representing (72.4%), 160 of the respondents were neutral representing (17.0%), and 100 of the respondents disagree representing (10.7%).

**Table 13:** IT does not increase prompt and efficient service delivery of the bank.

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	140	14.9	14.9	14.9
	AGREE	120	12.8	12.8	27.7
	NEUTRAL	40	4.3	4.3	31.9
	DISAGREE	320	34.0	34.0	66.0
	STRONGLY DISAGREE	320	34.0	34.0	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)

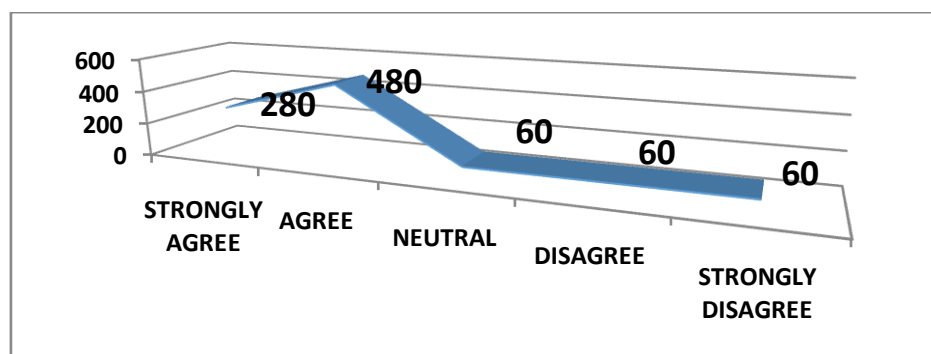
It can be deduced that out of the 940 respondents, 260 of the respondents agreed that IT does not increase prompt and efficient service delivery of the bank representing (27.7%), 40 of the respondents were neutral representing (4.3%), and 640 of the respondents disagree representing (68.0%).

**Table 14:** I spend less minutes/hours in carrying out transactions in the bank with the use of I.T

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	280	29.8	29.8	29.8
	AGREE	480	51.1	51.1	80.9

	NEUTRAL	60	6.4	6.4	87.2
	DISAGREE	60	6.4	6.4	93.6
	STRONGLY DISAGREE	60	6.4	6.4	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)



it can be deduced that out of the 940 respondents, 760 of the respondents agreed that they spend less minutes/hours in carrying out transactions in the bank with the use of IT representing (80.9%), 60 of the respondents were neutral representing (6.4%), and 120 of the respondents disagree representing (12.8%).

**Table 15:** The introduction of I.T has helped bank staffs to work better in a team than before the introduction of I.T.

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	440	46.8	46.8	46.8
	AGREE	420	44.7	44.7	91.5
	NEUTRAL	60	6.4	6.4	97.9
	DISAGREE	20	2.1	2.1	100.0
	Total	940	100.0	100.0	

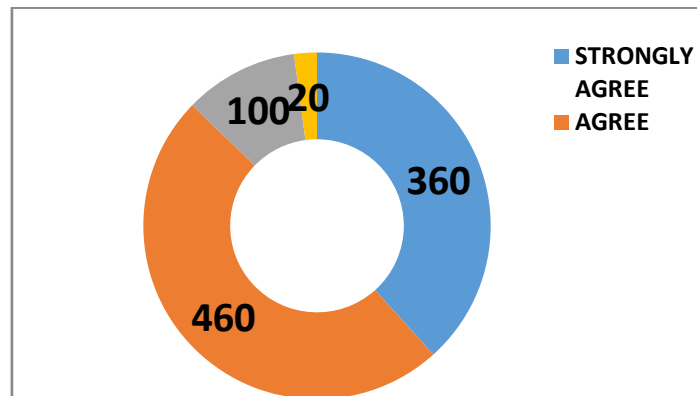
Source: Field Survey, (2014)

it can be deduced that out of the 940 respondents, 860 of the respondents agreed that the introduction of IT has helped bank staffs to work better in a team than before the introduction representing (91.5%), 60 of the respondents were neutral representing (6.4%), and 20 of the respondents disagree representing (2.1%).

**Table 16:** Banks have provided a better and wider range of banking services since the introduction of I.T

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	360	38.3	38.3	38.3
	AGREE	460	48.9	48.9	87.2
	NEUTRAL	100	10.6	10.6	97.9
	DISAGREE	20	2.1	2.1	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)



it can be deduced that out of the 940 respondents, 820 of the respondents agreed that since the introduction of IT banks have provided a better and wider range of banking services representing (87.2%), 100 of the respondents were neutral representing (10.6%), and 20 of the respondents disagree representing (2.1%).

**Table 17:** The introduction of I.T in this bank has since attracted more customers to the bank

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	360	38.3	38.3	38.3
	AGREE	480	51.1	51.1	89.4
	NEUTRAL	80	8.5	8.5	97.9
	STRONGLY DISAGREE	20	2.1	2.1	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)

it can be deduced that out of the 940 respondents, 840 of the respondents agreed that the introduction of IT in banks has attracted more customers to the bank representing (89.4%), 80 of the respondents were neutral representing (8.5%), and 20 of the respondents disagree representing (2.1%).

**Table 18:** I do think customers are satisfied with the bank services

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	140	14.9	14.9	14.9
	AGREE	560	59.6	59.6	74.5
	NEUTRAL	200	21.3	21.3	95.7
	DISAGREE	20	2.1	2.1	97.9
	STRONGLY DISAGREE	20	2.1	2.1	100.0
	Total	940	100.0	100.0	

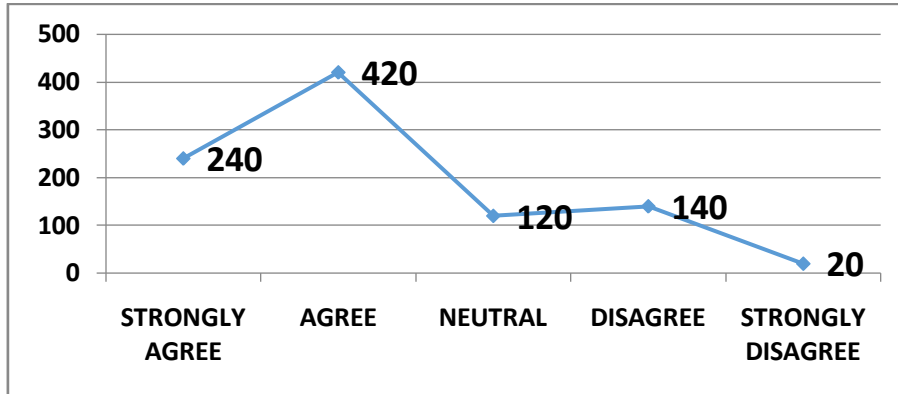
*Source: Field Survey, (2014)*

it can be deduced that out of the 940 respondents, 700 of the respondents agreed that customers are satisfied with the bank services representing (74.5%), 200 of the respondents were neutral representing (21.3%), and 4 of the respondents disagree representing (4.2%).

**Table 19:** Internet banking has reduced banking cost

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	240	25.5	25.5	25.5
	AGREE	420	44.7	44.7	70.2
	NEUTRAL	120	12.8	12.8	83.0
	DISAGREE	140	14.9	14.9	97.9
	STRONGLY DISAGREE	20	2.1	2.1	100.0
	Total	940	100.0	100.0	

*Source: Field Survey, (2014)*

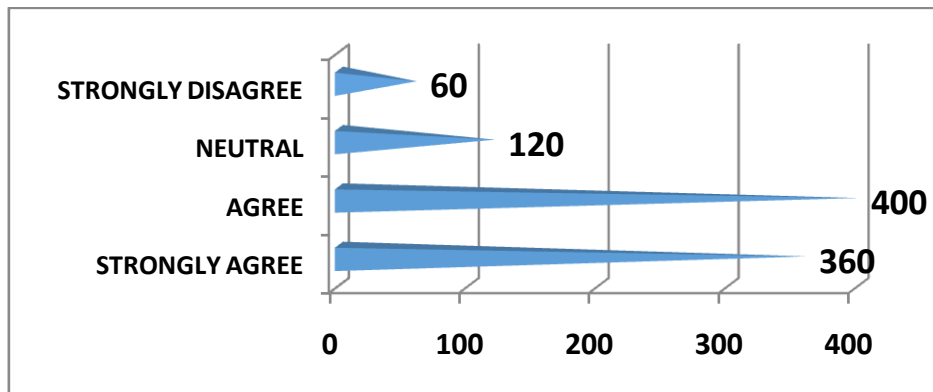


it can be deduced that out of the 940 respondents, 660 of the respondents agreed that internet banking has reduced banking cost representing (70.2%), 120 of the respondents were neutral representing (12.8%), and 160 of the respondents disagree representing (17%).

**Table 20:** Since the introduction of I.T, this bank has become more profitable

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	360	38.3	38.3	38.3
	AGREE	400	42.6	42.6	80.9
	NEUTRAL	120	12.8	12.8	93.6
	STRONGLY DISAGREE	60	6.4	6.4	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)



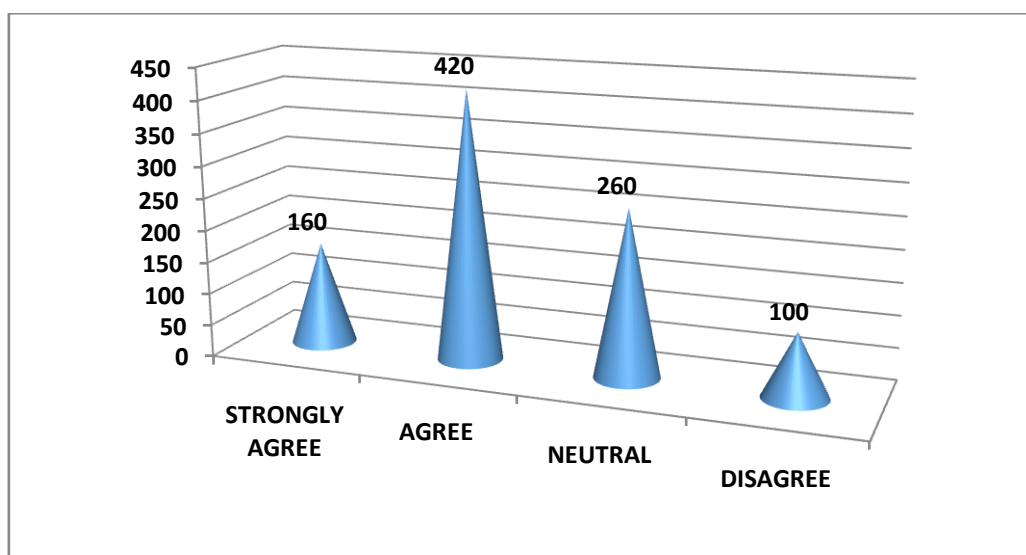
it can be deduced that out of the 940 respondents, 760 of the respondents agreed that since the introduction of IT banks has become more profitable representing

(80.9%), 120 of the respondents were neutral representing (12.8%), and 60 of the respondents disagree representing (6.4%).

**Table 21:** Internet service is adequately reliable in this bank

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY AGREE	160	17.0	17.0	17.0
	AGREE	420	44.7	44.7	61.7
	NEUTRAL	260	27.7	27.7	89.4
	DISAGREE	100	10.6	10.6	100.0
	Total	940	100.0	100.0	

Source: Field Survey, (2014)



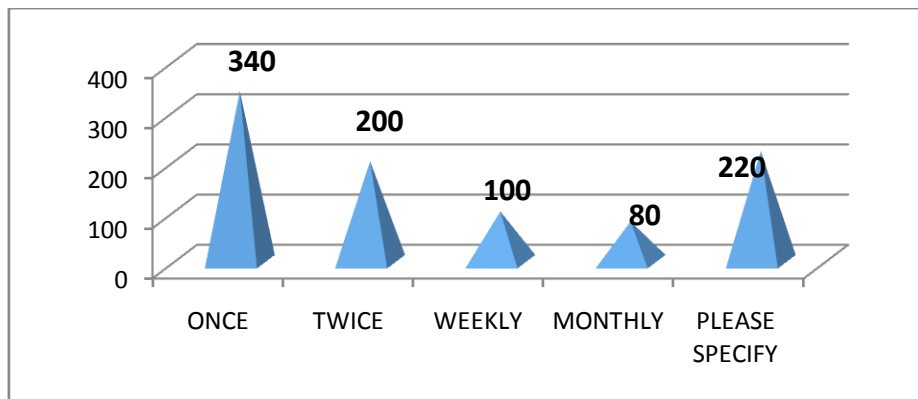
it can be deduced that out of the 940 respondents, 580 of the respondents agreed that internet server is adequately reliable in this bank therefore representing (61.7%), 260 of the respondents were neutral representing (27.7%), and 100 of the respondents disagree representing (10.6%).

**Table 22:** How frequently have you been delayed in the bank because of computer breakdown

S.No	Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ONCE	340	36.2	36.2	36.2
	TWICE	200	21.3	21.3	57.4

WEEKLY	100	10.6	10.6	68.1
MONTHLY	80	8.5	8.5	76.6
PLEASE SPECIFY	220	23.4	23.4	100.0
Total	940	100.0	100.0	

Source: Field Survey, (2014)



it can be deduced that out of the 940 respondents, 340 of the respondents have been delayed once in the bank because of computer breakdown representing (36.2%), 200 of the respondents have been delayed twice in the bank representing (21.3%), 100 of the respondents have been delayed weekly in the bank representing (10.6%), 80 of the respondents have been delayed monthly in the bank representing (8.5%), and 220 of the respondent specified the reason for their delay in the bank representing (23.4%).

### Descriptive Statistics of Bank Officials And Customers Using Mean and Standard Deviation

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
ITand computer have really helped impacted banks positively.	940	1.00	4.00	1.2553	.60351
I do not think IThas impacted banks operation in any aspect.	940	1.00	5.00	4.0851	1.03342
I enjoy prompt and efficient service delivery by banks.	940	1.00	4.00	1.7660	.69446
We should encourage our colleagues to patronize banks.	940	1.00	3.00	1.7021	.61922



I effectively receive the details of my transaction through my E-mail.	940	1.00	5.00	2.2553	1.12581
Savings and withdrawing money is time consuming with the bank. Savings operation and money withdrawals from banks are time-consuming activities.	940	1.00	5.00	2.6170	1.02764
I enjoy prompt and efficient service delivery from the bank's ATM services.	940	1.00	5.00	1.9787	1.12621
IT does not increase prompt and efficient service delivery of the bank.	940	1.00	5.00	3.5957	1.44668
I spend less minutes/hours in carrying out transactions in the bank my with the use of I.T	940	1.00	5.00	2.0851	1.09407
Valid N (list wise)	940				

<b>Descriptive Statistics</b>					
	N	Minimum	Maximum	Mean	Std. Deviation
The introduction of I.T has helped bank staffs to work better in a team than before the introduction of I.T.	940	1.00	4.00	1.6383	.70101
This bank has since provided a better and wider range of banking services since the introduction of I.T.	940	1.00	4.00	1.7660	.72476
The introduction of I.T in this bank has since attracted more customers to the bank.	940	1.00	5.00	1.7660	.78186
I do think customers are satisfied with the bank services.	940	1.00	5.00	2.1702	.78478
Internet banking has reduced banking cost.	940	1.00	5.00	2.2340	1.06181

Since the introduction of I.T, this bank has become more profitable.	940	1.00	5.00	1.9362	1.04530
Internet service is adequately reliable in this bank.	940	1.00	4.00	2.3191	.88248
How frequently have you been delayed in the bank because of computer breakdown	940	1.00	5.00	2.6170	1.60045
Valid N (list wise)	940				

### Hypotesis Testing

In testing **Hypothesis 1**, The One-Sample T Test compares the mean score of a sample to a known value. Usually, the known value is a population mean.

**Null Hypothesis:** The use of IT does not have a significant effect on the operation of PSBs.

**Alternative Hypothesis:** The use of IT has a significant effect on the operation of PSBs.

### One Sample T-Statistics

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
IT and computer have really helped impacted banks operation positively.	940	1.2553	.60351	.06225

Source: Field Survey, (2014)

### One Sample test

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
IT and computer have really helped impacted banks operation positively.	20.167	93	.000	1.25532	1.1317	1.3789

Source: Field Survey, (2014)

**Interpretation**

The above question has a calculated value (t-value) of 20.167 and a critical value of approximately 2.000 at 5% level of significance and degree of freedom of 93.

**Decision**

From the above analysis, the calculated value is above the tabulated value, therefore the null hypothesis ( $H_0$ ) should be rejected in favor of the alternative hypothesis ( $H_1$ ) accepted. Also, the two tail significance level which is 0.00 is less than 0.05 which is the level of significance; therefore the null hypothesis should be rejected. Hence, the use of IT has a significant effect on the operation of Public Sector Banks in India.

In testing **Hypothesis 2**, The One-Sample T Test compares the mean score of a sample to a known value. Usually, the known value is a population mean.

**Null Hypothesis:** IT devices do not help bank staffs effectively on the performance of their duties.

**Alternative Hypothesis:** IT device has helped bank staffs effectively on the performance of their duties.

**One Sample T-Statistics**

**One-Sample Statistics**

	N	Mean	Std. Deviation	Std. Error Mean
I do not think IThas impacted banks performance in any aspect.	940	4.0851	1.03342	.10659

*Source: Field Survey, (2014)*

**One Sample test**

<b>One-Sample Test</b>						
	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
I do not think IThas impacted banks performance in any aspect.	38.326	93	.000	4.08511	3.8734	4.2968

*Source: Field Survey, (2014)*

**Interpretation**

The above question has a calculated value (t-value) of 38.326 and a critical value of approximately 2.000 at 5% level of significance and degree of freedom of 93.

**Decision:** From the above analysis, the calculated value is above the tabulated value, therefore the null hypothesis ( $H_0$ ) should be rejected in favor of the alternative hypothesis ( $H_1$ ) accepted. Also, the two tail significance level which is 0.00 is less than 0.05 which is the level of significance; therefore the null hypothesis should be rejected. Hence, IT device has helped bank staffs effectively on the performance of their duties.

## Using Anovas

### Hypothesis 1:

$H_0$ : The use of IT does not have a significant effect on the operation of PSBs.

$H_1$ : The use of IT has a significant effect on the operation of PSBs.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.342 <sup>a</sup>	.117	.107	1.00318
a. Predictors: (Constant), IT and computer have really helped impacted banks operation positively.				

ANOVA <sup>b</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12.266	1	12.266	12.188	.001 <sup>a</sup>
	Residual	92.585	92	1.006		
	Total	104.851	93			
a. Predictors: (Constant), ITand computer have really helped impacted banks operation positively.						
b. Dependent Variable: Internet banking has reduced banking cost.						

### Interpretation of Results

The results from the model summary table above revealed that the extent to which the variance in operation of Public Sector Banks can be explained by the model that is 11.7% i.e (R square = 0.117). The ANOVA table shows the F-calculated value to be 12.188 at 0.001 significance level. The implication is that the use of IT has a significant effect on the operation of PSBs.

### Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.479	.240		6.165	.000

IT and computer have really helped impacted banks operation positively.	.602	.172	.342	3.491	.001
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a. Dependent Variable: Internet banking has reduced banking cost.

The coefficient table above shows the simple model that expresses the extent to which IT affects the operation of PSBs. The model is shown mathematically as follows;  $Y = a+bx$  where y is the operation of Public Sector Banks and x is information technology, 'a' is a constant factor and b is the value of coefficient. From this table therefore,  $COP = 1.479 + 0.602$  Information technology. This means that for every 100% change in operations of PSBs, IT is responsible for 60.2% of the change.

**Decision**

The significance level is 0.000 and is less than 0.05, thus we accept the alternative hypothesis and reject the null hypothesis. This implies that IT has a significant effect on the operation of PSBs.

**Using Anova**

**Hypothesis Two:**

**H<sub>0</sub>:** IT devices do not help bank staffs effectively in the performance of their duties.

**H<sub>1</sub>:** IT device has helped bank staffs effectively in the performance of their duties.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.416 <sup>a</sup>	.173	.164	.95570
a. Predictors: (Constant), I effectively receive the details of my transaction through my E-mail.				

ANOVA <sup>b</sup>						
Model		Sum Squares	of Df	Mean Square	F	Sig.
1	Regression	17.588	1	17.588	19.257	.000 <sup>a</sup>
	Residual	84.029	92	.913		
	Total	101.617	93			
a. Predictors: (Constant), I effectively receive the details of my transaction through my E-mail.						

ANOVA <sup>b</sup>						
Model		Sum Squares	of Df	Mean Square	F	Sig.
1	Regression	17.588	1	17.588	19.257	.000 <sup>a</sup>
	Residual	84.029	92	.913		
	Total	101.617	93			
a. Predictors: (Constant), I effectively receive the details of my transaction through my E-mail.						
b. Dependent Variable: Since the introduction of IT, this bank has become more profitable.						

### Interpretation of Results

The results from the model summary table above revealed that the extent to which the variance in performance of bank staffs in carrying out their duties can be explained by the model that is 17.3% i.e (R square = 0.173). The ANOVA table shows the F-calculated value to be 19.257 at 0.000 significance level. The implication is that IT device has helped bank staffs effectively in the performance of their duties.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.065	.222		4.805	.000
	I effectively receive the details of my transaction through my E-mail.	.386	.088	.416	4.388	.000
a. Dependent Variable: Since the introduction of I.T, this bank has become more profitable.						

The coefficient table above shows the simple model that expresses the extent to which IT has helped bank staffs effectively in the performance of their duties. The model is shown mathematically as follows;  $Y = a+bx$  where  $y$  is the performance of bank staffs and  $x$  is information technology, 'a' is a constant factor and  $b$  is the value of coefficient. From this table therefore,  $COP = 1.065+0.386$  Information technology. This means that for every 100% change in the performance of bank staffs, IT is responsible for 38.6% of the change.

The significance level is 0.000 and is less than 0.05, thus we accept the alternative hypothesis and reject the null hypothesis. This implies that IT device has helped bank staffs effectively in the performance of their duties.

## **Findings of The Study**

Going through the self-administered questionnaire thoroughly, we find out that IT has introduced better infrastructure and techniques that satisfies both the employees and the customers. The employees no longer have to deal with bulky paper which is very exhausting and the customers can now make enquires on the account and make withdrawals without direct over the counter contact via the use of the automated teller machine (ATM).

The majority of the bank customers enjoy efficient and prompt service delivery by banks, because they can perform many transactions without having to visit the bank physically, and this is done via the use of IT (IT) into banking operations. With the use of technology internet banking and other components of I.T has therefore brought about ease and convenience to effectively make financial transactions by customers. Since the introduction of IT by banks in India, banks have reduced their banking cost and they have become more profitable. Bank customers have been delayed in the bank, because of computer break down or as a result of slow internet during banking operations, therefore most customers of the bank has been delayed once at the bank.

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

1. IT enhances banks performance and operational efficiency and reduced banking cost.
2. Adoption of IT by banks has made customers enjoy ease, smooth and convenient way of banking.
3. The use of IT by banks has brought about profitability to the bank.

## **Recommendations**

The impacts of IT on Public Sector Bank's performance have been broadly discussed in the previous chapters. However, it is only appropriate to make certain recommendations that may be useful to the enhancement of this purpose.

1. IT should be fully funded and receive unconditional support from the management. Financial constraints are part of the problems that limit the effectiveness of IT in the banking industry.
2. Proper enlighten programs and mediums should be put in place to enhance communication between the institution and their customer. This will ease the flow of information hereby keeping customers current and updated.
3. Committee should be setup to monitor the implementation of IT in the banking industry. These should be periodic reviewer of the planning techniques to ensure they suit the objectives of the organization.
4. Priotize the customer before the technology. It is important to first and foremost identify the needs of the customer before introducing technology. The technique chosen must be relevant to the total corporate objective so as to avoid stagnation or loss.
5. Generators in banks should be run on stand-by to avoid disruption in the flow of electricity which can slow down the rate of operations. This is because most IT innovations need electricity to function.

## **Conclusion**

The IT has a optimistic impact on the image, goodwill and growth of Public Sector Banks in India. Customer contentment is of a paramount importance to the achievement of organizational goals. It has geometrically increased the rate of support as a result of the supply of redefined products and services to meet the needs and demand of the public. IT has also helped to reduce the rate of deception in the banking system. Today scenario, the banking activities are electronically computerized and not manual, making it difficult to make any alterations; such actions can easily be traced and remedial measure taken. IT has provided better and well-grounded infrastructure to speed up transaction, increase consistency and enhance banks operation.

## **Areas For Further Development**

Area suggested for further research includes the following.

1. The impact of IT on banking operations.
2. The effect of IT on bank profitability.
3. The level on increase in the performance of Public Sector Banks via the use of information technology.
4. It is expected that when the 3G network is operational, it will boost mobile commerce activities in India but may require further investment in the quality of cell phones. However, there are enormous opportunities for mobile Commerce implementation in India based on the rate of growth and the transmission of mobile devices. There is prospect for patronage but may be dependent on the available services.

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