

# **AN ECONOMETRIC INVESTIGATION ON THE IMPACT OF ICT IN THE BUSINESS PROCESSES OF FINANCIAL INSTITUTIONS IN THE DEVELOPING COUNTRIES.**

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## **ABSTRACT**

This paper presents Information and Communication Technology (ICT) as a strategic driver in the business processes of the financial institutions in Nigeria. Soundness of banks is important for the economic development of any country. In this work, an attempt was made to empirically examine the impact of key metric such as Infrastructure (ICT infrastructure), Intellectual Capital, IT Governance, ICT Service Management (ISM) Strategic Policy Framework (SPF) and Service Innovation on the business processes of the banks in Nigeria. The study was conducted with ten banks in Nigeria. The empirical results show that with the developments of the aforementioned key metrics, the soundness of the financial institutions both on microeconomics and macroeconomics scales will be enhanced. It was observed that with well developed financial institutions via ICT, the soundness of the banks will address the issues of good quality of service, good integrity system, cost reduction and profit maximization. A bivariate data model was developed through linear regression to ascertain the extent of correlation between ICT key indices and the attendant social economic index.

[Keywords: ICT, Business, Process, Infrastructure, Bivariate, Model, Correlation, Indice

## **INTRODUCTION**

Today's financial environment is becoming very dynamic as it undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers<sup>1</sup>. Business organisations, 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. Information and Communication Technology (ICT) is at the centre of this global change curve<sup>1</sup>.

The application of 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<sup>1</sup>. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. 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. ICT have been a major driver in Nigerian banking industry today. This new technology has brought far-reaching revolution in societies, which has tremendously transformed most business (banking) scenes<sup>2</sup>.

ICT products in use in the banking industry of today includes: Desktop PCs, Automated Teller Machine, Smart Cards, Telephone Banking, Electronic Funds Transfer/cashless banking, Electronic Data Interchange, Electronic Home and Office Banking.

Granting that ICT drives the business processes of today's financial sector, it is the intention of this paper to show the extent of correlation between critical key indices and the attendant social economic index. Econometric approach will be used to verify our claims.

## **MOTIVATION**

This research was prompted by the need to look into the socio economic impact of ICT and how it has enhanced the performance of financial institutions in addressing the issues of good quality of service, cost reduction and profit maximization in the developing world. Also, this work develops a bivariate data model through linear regression to ascertain the extent of correlation between ICT key indices and the attendant social economic index.

## **RELATED WORKS**

Information communication technologies (ICT) have been defined by different researchers in a number of different ways. The authors in <sup>3</sup> defines Information and Communication Technology (ICT) as the automation of processes, controls, and information production using computers, telecommunications, softwares and other gadgets that ensure smooth and efficient running of activities. The authors in <sup>4</sup> argue that the banking reforms (especially the recapitalization that specifies a minimum capital base of 25 billion naira for commercial banks and the new cashless strategy), are pursued with a view to making the sector realize its objectives in advancing the economy. It is expected that the impact of these reforms will be enhanced with the use of ICT because it will create some form of competitive advantage and improve banking services through accuracy and efficiency in their transactions. In other words, it will change the nature of service delivery which will culminate in productivity and efficiency across all the sectors of the economy.

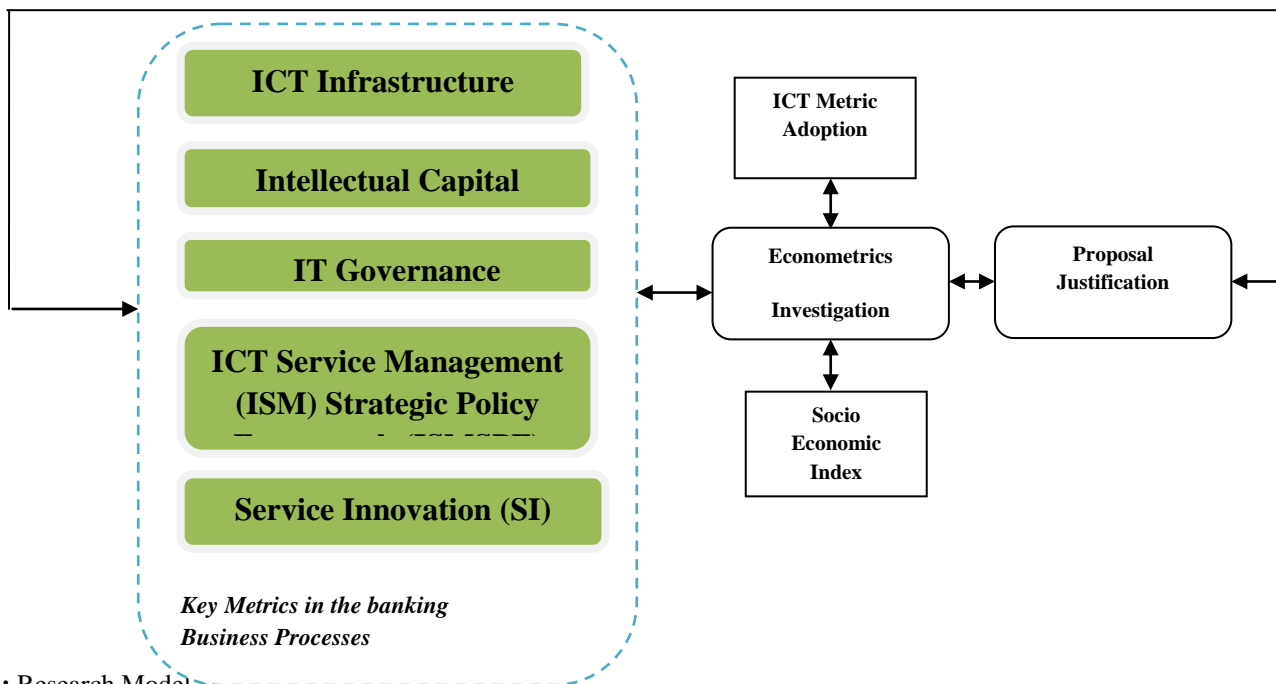
According to the Whitepaper in <sup>5</sup> which developed a core list of ICT indicators that could be collected by all countries which serves as a basis for internationally comparable statistics on the information society, the core list of ICT indicators are:

- (i) ICT infrastructure and Access
- (ii) Access to, and use of, ICT by households and individuals
- (iii) Use of ICT by businesses
- (iv) ICT sector and trade in ICT goods.

The work further argues that the principal objective of the list is to help countries which are developing ICT surveys, or adding ICT questions to existing collections, to produce internationally comparable data. In this work, we observe the list is not mandatory in any sense; however, countries will always have to respond to national policy needs, which may be only partially covered by the core list. The authors of <sup>6</sup> opinioned that the improvement in ICT has enhanced the creation of new business models and has revolutionized the distribution channels of financial systems resulting in not only a reduction in the transaction costs but also has improved the convenience and accessibility for the customers. According to <sup>7</sup> and <sup>8</sup>, this is a key factor that is transforming the financial system. On the same note, improvement in information technology also makes it easier for investors to monitor corporations, thus reducing asymmetric information <sup>8</sup>. As such, banks which have not invested significant amounts in technology have consequently faced an erosion of their market shares to their competitors. Technological advances facilitate the rapid transmission of digitized information within and across borders, which is becoming increasingly important for successful banking transaction as financial services are largely informational in nature <sup>9</sup>. In another close study, <sup>10</sup> identified the changes in the use of selected banking technologies, indicating a significant growth in the use of new IT and financial technologies.

To this extent, the impact of new technology on the financial sector need to be addressed <sup>11</sup> as ICT is radically changing the financial sector landscape in the developing countries. The transition to digital cashless economy now compels enterprises not only to develop client based intimacy but also to ensure security requirements as part of the client relationship strategy. In the context of technology, transactions in cashless society can occur without any prior human contact or established interpersonal relationships <sup>12</sup>.

Following the work carried out in <sup>13</sup> which paid much attention to the drivers that contribute to the soundness of the banking sector in a holistic approach, this paper presents an econometric perspective to ascertain the degree of correlation between ICT key metrics and socio economic index via our bivariate model which creates a better justification for banking policy reforms in Nigeria. As such, this study is drawn from work which attempts to integrate the factors considered in the literature by examining the key drivers that contribute significantly to the soundness and stability of the banking sector. Figure 1 shows a conceptual model used in this work



**Figure 1:** Research Model Framework

Based on the set of research questions arising from figure 1, following research objectives were addressed in this research:

1. Develop a correlation perspective between socio economic index and ICT metric variables.
2. Identify dimensions of ICT strategies and customers responses.
3. Identify dimensions of socio-economic development as a result of ICT impacts in the banking business processes as well as integrating the relationships between ICT growth and socio-economic development in the banking segments.

## ANALYTICAL FRAMEWORK AND METHODOLOGY

In order to meet the objective of ascertaining the extent of correlation between socio economic index and ICT adoption key indices, this research work adopted a conceptual framework shown in figure 1 which presents a justification for financial institutions in the developing countries. The study is a comprehensive evaluation of the response of 10 Nigerian banks that actively utilizes ICT and IT strategies in executing their business processes. The consequent socio economic impact on the financial institutions is presented in context. Three categories of variables that relate to the adoption and implementation of information technology devices were used for the study. These include the nature and degree of adoption of innovative technologies; degree of utilisation of the identified technologies and the impact of the adoption of ICT devices on banks operation. In this work, an attempt was made to empirically examine the impact of key factors such as Infrastructure (ICT infrastructure), Intellectual Capital, IT Governance, ICT Service Management (ISM), Strategic Policy Framework (ISMSPF) and Service Innovation on the business processes of banks in Nigeria. This study also carried out a more comprehensive evaluation of the response of Nigerian banks and clients to the adoption of ICT.

## ECONOMETRIC MODEL

Regression analysis is a statistical tool for the investigation of relationships between variables. This work quantitatively establishes the correlation between socio economic index and ICT key indices. This forms the basis for adaptation in our case samples in figure 1.0. In this study, secondary data was collected for 10 banks. The key drivers that influence the soundness of banks was shown in figure 1.

From econometrics perspective, giving empirical content to economic relations involves the use of quantitative analysis of actual economic phenomena based on the concurrent development of theory and observation, related by appropriate methods of inference. A discussion of the econometric method employed to examine the relationship between the ICT key drivers and the socio economic impact in the financial institutions is presented. Firstly, this work defines a linear regression function as follows:

1. The dynamic development of the financial sector can be modelled using the logistic function:

$$Y_y = \frac{Y_s}{1 + a e^{-x\beta + u}} \tag{1}$$

Where  $y_y$  is the socio economic index.  $y_s$  is the upper limit of  $y_y$ . The drivers for the soundness is denoted by the design matrix where  $x = (I_1, I_2, I_3, I_4, I_5, I_6, I_7, \dots, I_{n+1})$  are the ICT key metrics.

The Equation (1) can be re-written as

$$Yf(x) = x\beta + U \tag{2}$$

Where  $U$  = Residual, neglecting the nature of  $U$ , the variable  $U$  and focusing on the  $x - y$  relationship.

This work establishes that equation (2) is the equation of a straight line;  $U$  is the intercept (or constant) and  $\beta$  is the  $x$  coefficient, which represents the slope of the straight line the equation describes.

## REGRESSION MODEL (HYPOTHESIS FORMULATION)

- Assumptions of a proposed Regression Model:

1. The relation between  $x$  and  $y$  is given by  $y = \beta_0 + \beta_1 x + U$

2.  $U$  is a random variable, which may have both positive and negative values, so  $e$  is normally distributed
3.  $E(\epsilon) = 0$
4. The standard deviation of  $\epsilon$ ,  $\sigma_{yx}$ , is constant over the whole range of variation of  $x$ . This property is called “homoscedasticity”.
5. since  $E(\epsilon) = 0$ , we're supposing that  $E(y) = \beta_0 + \beta_1 x + E(\epsilon) = \beta_0 + \beta_1 x$

➤ Finding the regression line: the method of “ordinary least squares” or OLS

This work begins with assumed values for  $b_0$  and  $b_1$  and suppose that the relation between  $x$  and  $y$  is given by  $y = b_0 + b_1x$ ; some  $b_0$ 's and  $b_1$ 's will give us better fits than others

Now, let  $y = a + bxi$  be the value of  $y$  estimated by the regression equation when  $x$  has the value  $x_i$ ; then if  $y_i$  is actual value,  $y_i - \hat{y}_i$  is called the residual or the error substituting, let  $e_i = y_i - \hat{y}_i = y_i - b_0 - b_1x_i$ , different  $b_0$ 's and  $b_1$ 's will cause each  $e_i$  to have a different value.

By inference, the first stage of the financial development is characterized by higher socio economic index resulting from the perceived effects of ICT infrastructure and business innovation as key drivers of the soundness of banks. In this stage of development, the drivers of the soundness of banks namely Infrastructure, Intellectual Capital, Institutions, Integrity, Interaction and Innovation were accurately defined. The second stage is characterized by rapid growth in socio economic index, where strategic policy framework and intellectual capital increases the marginal contribution to the development and growth of the financial sector.

Table 4: Process Variable Dataset (Source: Author's Field Survey, 2011.)

Process Variables (Pv)	Variable Description (Vd)	ICT Adoption Ratings From ten (10) Banks. (Averaged index)	Soundness of banking (Sb)	Socio Economic Index (y)
Technology Infrastructure (I1)	Network Connectivity & ICT facilities	98.5	88.7	95.957
Intellectual Capital (I2)	knowledge workers	68.4	70.1	73.021
Integrity (I3) ( IT Governance)	Strategic alignment	67.9	69.5	72.6398
Strategic policy framework (I4)	Regulatory compliance.	79.5	90.5	81.479
Innovation (I5)	New products & Changes	90.7	95.3	90.01
Operational Excellence (I6)	Quality of Service	66.5	70.8	71.573

From Table 4, considering the 10 banks (B1-B10) in this study, the process variable I1 confirms the status quo in the banking sector of today. The adoption rate is very high compared with other process variables. This is because the paradigm shift resulting from globalization has created an urgent demand for the application of technology infrastructure leading to high socio economic index (y).

## EMPIRICAL FRAMEWORK

In this section, an outline of the theoretical framework for capturing the soundness of the banking sector dynamics in our sampled cases was undertaken. A detailed field survey (questionnaire generation) was carried out in our sampled cases, afterwards a network model is developed showing a typical banking network model encapsulating its business processes. Excel was used for the data plots and analysis. The study covered 10 banks in the country as at the end of 2010. A total of 150, 100 and 50 questionnaires were administered to the employees, customers and Head of Systems Units of the 10 selected banks respectively. Out of these, 90.28%, 77.78% and 97.22% were respectively retrieved.

The study revealed that the period between 2000 and 2010 was characterized by fundamental changes in the content and quality of banking business in the country. Technology has been discovered to be the main driving force of competition in the banking industry during the period of study. Whereas only one bank had an Enterprise Resource Planning system (ERP system) by 2002 out of the 10 banks in our case study.

In consonance with Moore's law of 1965, it was observed that as most banks dynamically adapts and upgrades their technological products viz : electronic funds transfer (EFT), Smart Cards, POS (point of sales) terminal, automated telling machine (ATM), Mobile banking (Electronic Home and Office Banking) , as well as Telephone Banking within the sampled period, this consequently improved customer services, facilitated accurate records, provides efficiency for Home and Office Banking services, ensures convenient business hour, prompt and fair attention, and enhances faster services. The adoption of ICT improves the banks corporate image leading to a wider, faster and more efficient market. It has also made work easier and

more interesting, improving the competitive edge of banks, improving relationship with customers and assists in solving basic operational and planning problems.

Table 3 shows the availability of ICT infrastructure in the studied banks. The impacts of the adopted technologies were examined on specific areas of banking services. It was used to assess the effects of ICT on both the process generated (task performed) and the process dimensions. Both local and global impact criteria were considered (microeconomic scale). The impact is global when the results or output of the financial sector turns the Nation's economy around for good. In the financial sector, direct impacts of IT on local criteria such as time saving, error rate reduction, enhanced management decision making, and improved speed of service delivery as perceived by the bank workers and customers gives a strong relative index for its justification. The impact on global criteria such as competitive advantage, market segmentations, high revenue and forecasting were also assessed. The impact assessment model looks at the performance (effectiveness and efficiency) and effect which the applications of systems have within an organisation. The responses of customers on the impact of IT were measured. Arithmetic mean and standard deviation of the local and global impact criteria were calculated to determine their levels for analysis. Table 3 shows the adoption ICT products in the studied banks within the last 8 years.

Table 3.0: Number of Banks that Adopted Various ICT Products from 2000-2010

<b>Technology Infrastructure I</b>	2000-2002	2005-2007	2008-2010
Automated teller machine	4	8	10
Electronic Transfer funds	2	7	10
Electronic Data Exchange	3	8	10
Smart cards-ATM	4	10	10
Local Area Networks	10	10	10
ERP Systems	1	10	10
Point of Sales Systems	7	10	10
Electronic home and office Banking	6	10	10
Telephone Banking	8	10	10
Wide Area Network	8	10	10

Source: Author's Research Survey

Rate of adoption increased progressively in all the studied banks between 2000 and 2010 because of the crucial roles it plays in the operations of banks as well as other financial institutions.

Organizations must keep pace with ever changing capabilities of IT in order to compete favourably with regulatory authorities. Table 3.1 shows the spread of ICT technologies between the headquarters and branches of each of the studied banks. The most widely adopted products were ATM (4.35), EFT (3.7) Wide Area Network (2.38), Local Area Network (2.4), and ERP systems (1.0). This implies that the products were adequately spread from the headquarters to most of the branches. Direct observation by the researcher also confirmed the availability of the products in most of the branches visited. This shows a growing trend in the rate of adoption of ICT in banking operations. The spread and usage of the ATM systems (4.35) ranked highest next to four ICT products mentioned above. This is adduced to the fact that withdrawals must be made at every instance.

There was a growing trend in the use of electronic means of transferring funds both at the local branches and headquarters. Money is now being transferred at the press of button-cashless strategy.

Table 3.1: Spread of Innovative Technologies in the Studied Banks.

	Innovative Technologies	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	(Mean -x)	Fx	S
a	<b>ATM</b>													
	Headquarters	3	2	3	2	3	4	4	3	2	3	2.90	29.0	1.9
	Branches only	5	6	4	5	5	3	6	7	8	9	5.80	58.0	2.0
	Dispensability	Nil	Nil	Nil	Nil	Nil	==	==	==	==	==			
b	<b>Electronic Funds transfer</b>													
	Headquarters	4	5	6	6	5	4	6	4	5	6	3.29	32.9	0.91.9
	Branches only	2	4	3	5	4	3	4	3	3	4	3.50	35.0	
	Dispensability	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil			
c	<b>Smart Cards</b>													
	Headquarters	4	3	2	3	2	3	3	2	3	2	3.10	31.0	1.1
	Branches only	==	==	==	==	==	==	==	==	==	==			
	Dispensability													
d	<b>Local Area</b>													

	<b>Network</b>													
	Headquarters	3	4	2	3	3	3	2	1	2	3	2.60	26.0	0.7
	Branches only	2	1	3	2	2	2	3	2	3	2	2.20	22.0	1.3
	Dispensability	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil		-	
e	<b>Wide Area Network</b>													
	Headquarters	1	1	2	2	1	2	3	2	1	1	3.75	37.7	0.6
	Branches only	1	1	1	1	1	1	1	1	1	1	1.00	10.0	0
	Dispensability	==	==	==	==	==	==	==	==	==	==			
f	<b>Electronic Banking</b>													
	Headquarters	4	5	3	2	2	4	6	5	3	3	2.72	24	1.11
	Branches only	==	==	==	==	==	==	==	==	==	==		36	
	Dispensability	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil			
g	<b>Telephone Banking</b>													
	Headquarters	1	1	1	1	1	1	1	1	1	1	1.0	10.0	0.31
	Branches only	1	1	1	1	1	1	1	1	1	1	1.0	10.0	0.31
	Dispensability													
f	<b>ERP Systems</b>													
	Headquarters	1	1	1	1	1	1	1	1	1	1	1.0	10.0	0.31
	Branches only	1	1	1	1	1	1	1	1	1	1	1.0	10.0	0.31
	Dispensability	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil			

Source: Authors Research Survey 2011.

This work observes that Electronic banking (e-banking) is the newest delivery channel of banking services following the new cashless (policy) strategy in most countries like Nigeria. Electronic banking is found to be carried out via the following platforms: (a) Internet banking (or online banking), (b) telephone banking, (c) TV-based banking, (d) mobile phone banking, and (e) PC banking (or offline banking). This addressed the issues of flexibility and convenience for the end users. Figure 2 shows the banking business processes and the IT infrastructure modelled in this work.

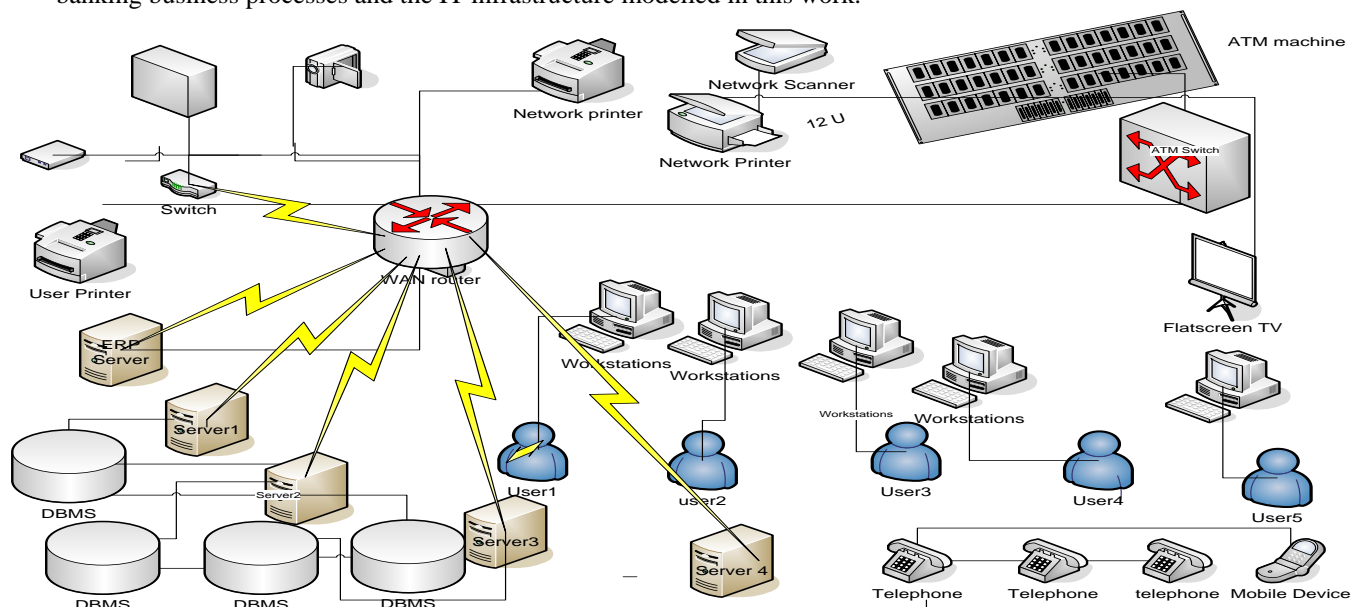


Figure 2: A Model of ICT Infrastructure on LAN for the banking business processes

## RESULTS AND ANALYSIS

The results of the findings in this work were gathered by applying a qualitative research method and interviews (as a technique for the collection of data) from participants. It was observed that the socio economic impact of ICT framework in the business processes financial institutions is very significant, but the adoption of these technologies is a subject matter which every individual financial institution should adopt according to their requirements. Banks in the developing countries by results of this research will have a sustained growth (soundness), maintaining her competitive edge if they consistently use and upgrade their infrastructures. The scatter diagram in figure 4 shows that with established process variables (Pv), the socio economic impact ICT in the business process of the financial institutions will on the overall improve banking services as well as enhancing the cooperate strategy of the financial institutions thereby addressing cost optimization and profit maximization. Figure 4 shows the linear regression scatter diagram plot. The result of the plot shows a very high correlation between the x and y coordinates, hence creating the platform for the paper justification.

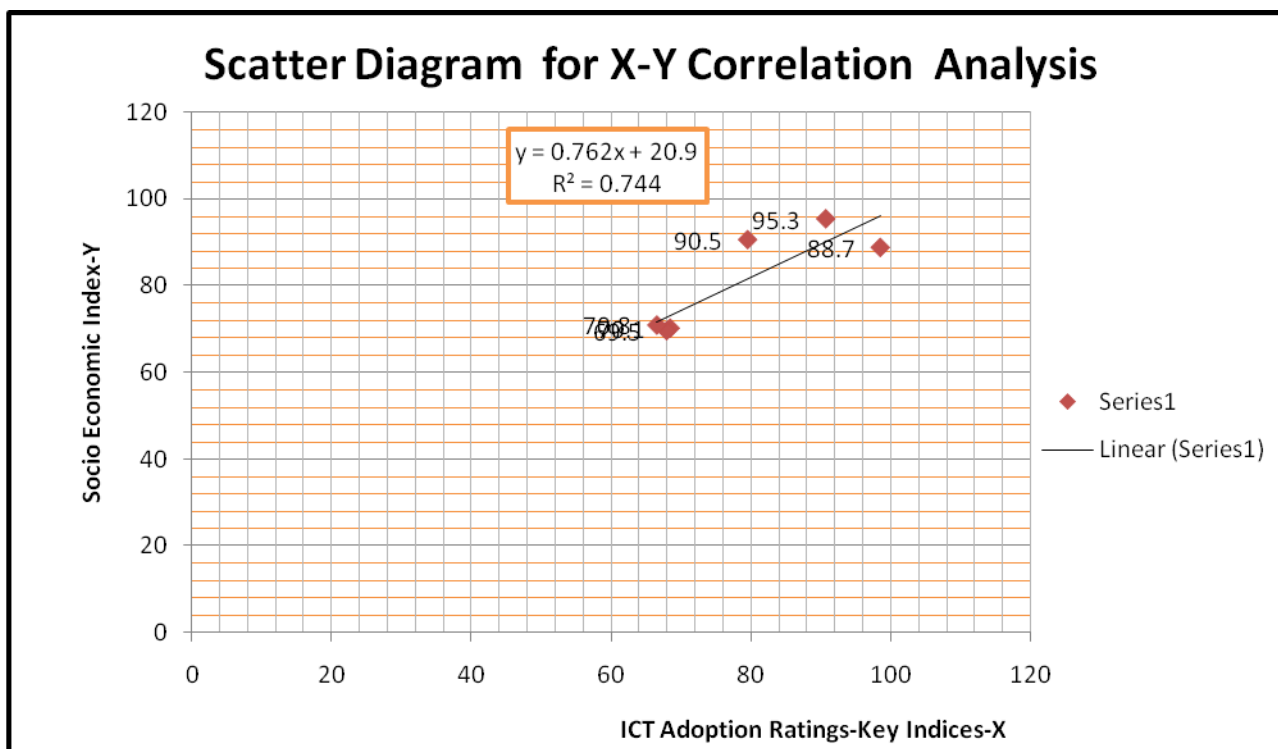


Figure 4: X-Y Correlation Analysis

The use of Computerized Credit Rating, Smart Cards and Electronic Data Interchange (EDI), ERP systems, automated telling machine (ATM), point of sales (POS) terminal was found in the bank headquarters and their branches, in line with the findings in the period of adoption, ATM, EFT, ERP systems, LAN,WAN and mobile banking by default are indispensable in the financial transactions. The Low rate of spread of any of these technologies might be due to cost, fear of fraudulent practices and lack of facilities necessary for their operation. Increase in the rate of adoption and the spread of ICT products, especially the use of cards has reduced the influence of cash on financial transactions. Owing to e-payment platforms currently available, payments are now being automated and absolute volumes of paper transactions have declined under the impact of electronic transaction brought about by the application of ICT to the payment system in Nigeria. Figure 5, presents ICT adoption rating observed in this work.

## ICT Adoption Ratings From ten Banks. (Averaged index)- (x)

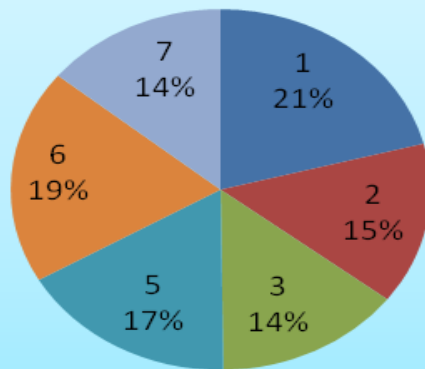


Figure 5: A distribution plot of Key metric indicators

From figure 5, the distribution plot shows that the adoption of ICT in the business processes will result in time saving, error rate reduction, management decisions and speed of transaction while on macroeconomic level its impact are competitive strength, market segmentation, improved revenue, proper forecasting and modernisation. Respondents believe that ICT impacts positively on all the criteria. Similarly, it improves competitive strength, enhances proper market segmentation, improves revenue, ensures modernisation and proper forecasting. This is for the case of the components in the chart which includes: ICT infrastructures, Intellectual capital, IT Governance, ICT Strategic framework policies and service innovation.

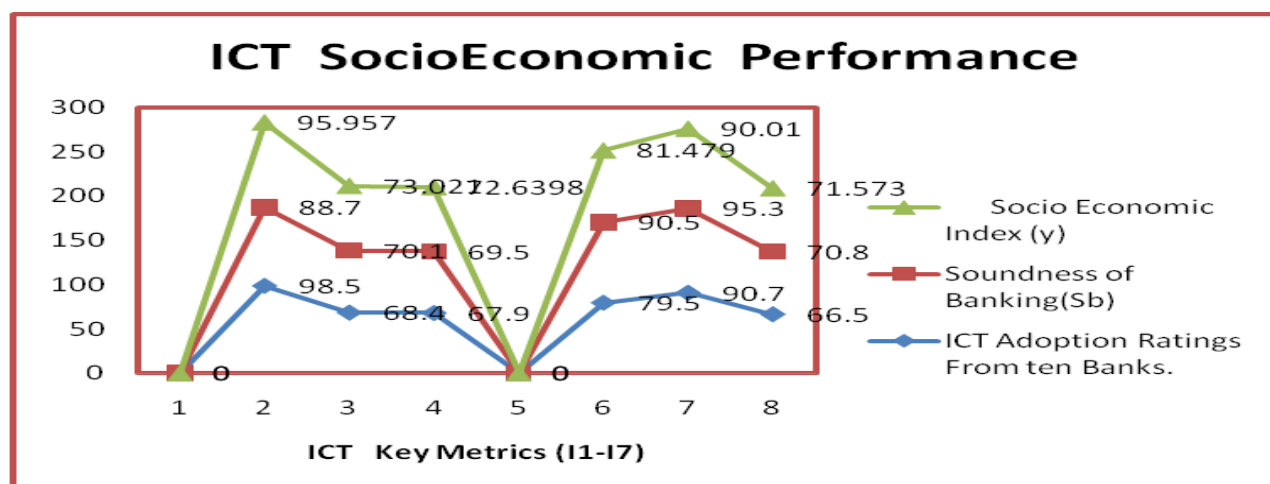


Figure 6: A plot of ICT composite economic Performance

Following our analysis in figure 6, the socioeconomic index(y), soundness of banking (Sb) and ICT adoption rating from our case study banks suggests that for the indicator values on the vertical plan and the key metrics on the horizontal plan, the more the ICT adoption, the more reasonable the socioeconomic benefits and hence creating a stabilized banking institution. This is true for all our key metrics in this context. Higher values of 95.957 and 90.01 for the socioeconomic index(y) depicts an economy that is highly stabilized and vice versa.



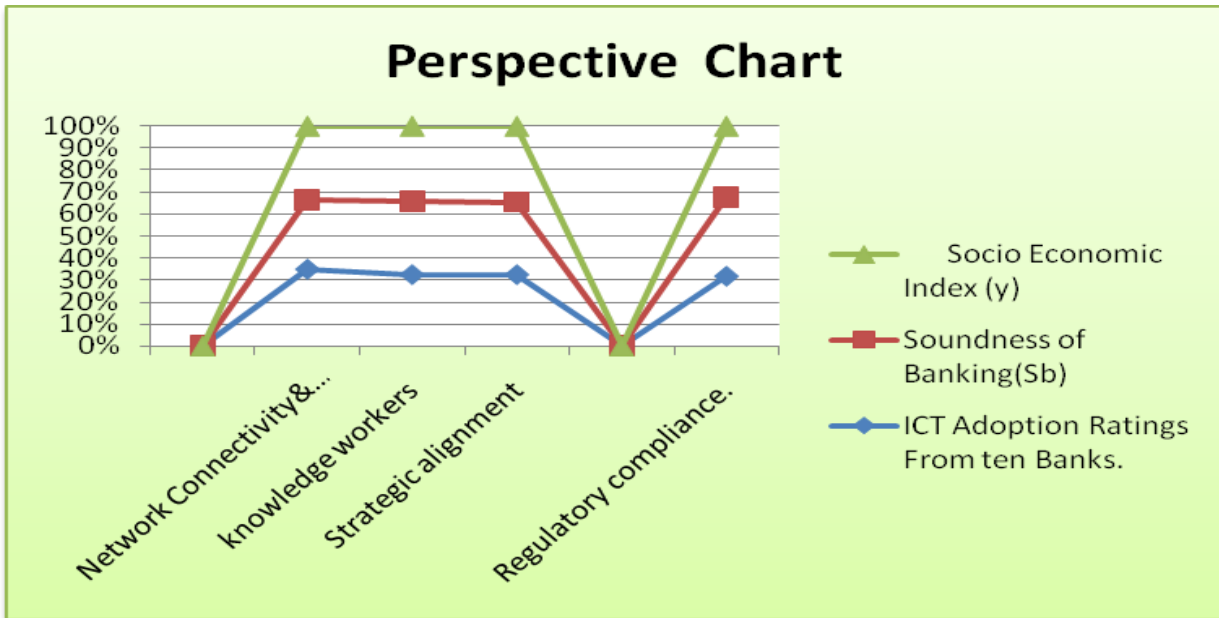


Figure 7:A Perspective plot for various key variables

The plot in figure 7 shows that the adoption of ICT in the financial sector maintains a similar pattern in figure 6. The result of the interview conducted for the customers also showed their positive response towards the adoption of ICT. Customers were happy with great improvement on statement generation, accounts reconciliation and balance enquiry making. Manual recording system through the use of ledger, cash books have been replaced by computerized information system. Adoption of ICT has influenced the content and quality of banking operations. From all indications, ICT presents great potential for business process reengineering of Nigerian Banks. This will have a meaningful positive influence on the economy.

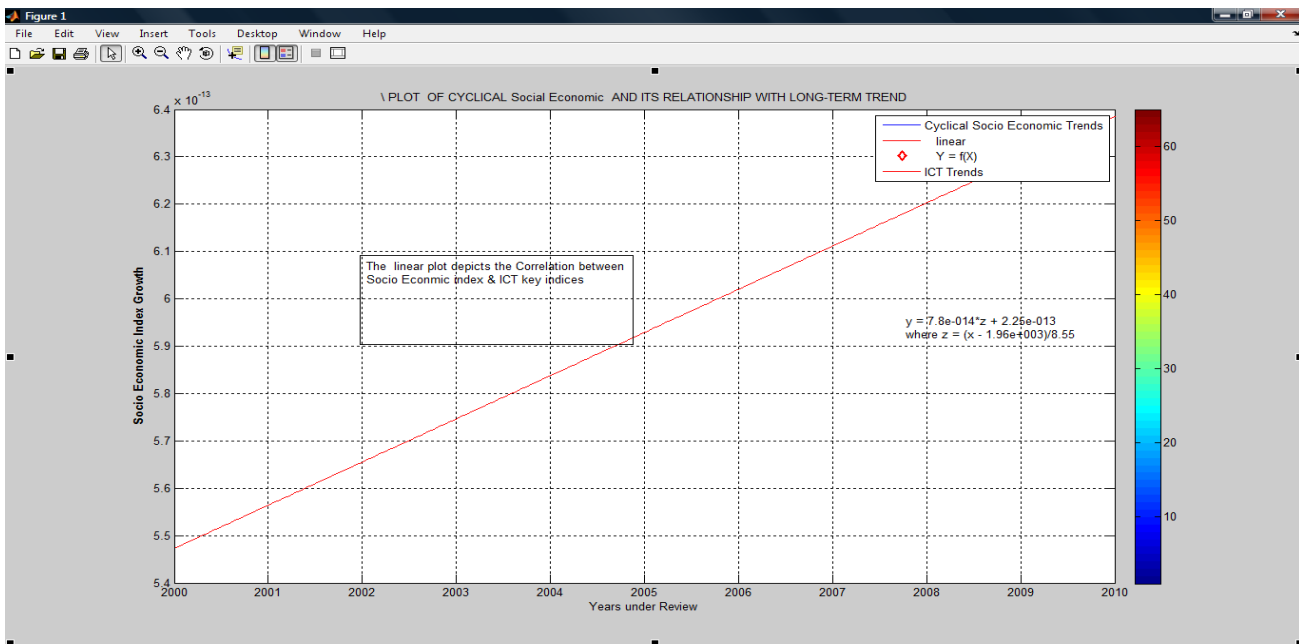


Figure 8: Moore’s Long Term socio economic plots

The figure 8 shows the trend observed with regards to Moore’s Laws of 1965. Gordon Moore’s empirical relationship is cited in a number of forms, but its essential thesis is that the number of transistors which can be manufactured on a single die will double every 18 months. The starting point for this exponential growth curve is usually set at 1959 or 1962, the period during which the first silicon planar transistors were designed and tested. For the case study in this work, the years considered was from 2000 till 2010. Within this timeframe, ICT was seen as agent of rapid economic growth and wealth creation. With the

banking sector at the fore-front of adapting to ICTs, it will make progress in the improvement of quality of service which will drive the society and economy at large.

From figure 9, a similar plots for socio economic index against key metrics depicts a mapping very similar to figure 6. But from figure 8, two important questions can be raised. The first is that of “how socio economic index correlates with ICT index (technology infrastructures). The second is the critical question of “how long will the observed trend hold out”. Both deserve careful examination. With the application of advanced technological infrastructures, with time, the socio economic index of the economy will transition out from the stalemate state to increased productivity thereby creating a platform extensive economic growth.

The banking industry in developing countries presents ICT providers with great opportunity to market their innovations. Success in this area however depends on how they can customise their services to appeal to the ready minds of various stake holders in the industry. Based on the research findings, the following are the perceived economic impacts of ICT to the financial sectors:

1. It enhances service strategy, service design service transition, service operation promoting the overall cooperate strategy of the financial market segments.
2. It affects the distribution of social capital and the strength of social cohesion in society through the employment of experts from different areas of profession handling specific tasks in the industry viz: IT Infrastructure maintenance, operational management, marketing and business units.(i.e. Creating inclusive business models)
3. It stimulates adoption of innovations in products and services thereby engendering management policies on capacity development so as to maintain service delivery with reinforced expertise in the sector.(i.e. Building institutional capacities)
4. It is important to note that the growing role of ICT in the information society in general is linked to the rise of literacy, science and scientific management since the industrial revolution. ICT strongly supports the opportunities of lifelong learning, both for the job, in formal education and in leisure time by networking, both in professional knowledge networks and in social networking.
5. It stimulates policy frameworks, coherence and governance in the industry
6. It corrects digital literacy amongst the knowledge workers reducing costs and improving services (i.e. developing human capital)
7. It supports alignment with the business objectives enabling the business processes and maximises profits in the financial market segments
8. Resources are optimally utilized while eradicating unnecessary risks and wrong decision making in the sector
9. It has created platforms for the involvement of businesses and social partners in the industry leading to banking expansion and economic growth at large .

## CONCLUSIONS

Research gaps necessitate a comprehensive study that examines the impact of ICT in the business process of the financial sector; hence a conceptual framework for our study was developed. This paper presents a bivariate econometric model which shows a positive correlation between the socioeconomic index and ICT key metrics in the developing economies. With vendor products like SAP ERP, Oracle flexcube, finacle banking core, etc quality service delivery and productivity which is essential in the country's banks post-consolidated era will be guaranteed. This is because attention is now on the ability of banks to retain their existing customers and attract prospective ones, which is mainly a function of their efficient service delivery that depends on the use of ICT.

An understanding of how ICT affects the financial market segments will not only help in developing the foundations of a sound banking theories, but also allow for better planning of their financial activities in the developing countries. Also ICT was found to impact positively on the speed of banking service delivery, as well as productivity and profitability. Various plots in this work create a better dimension to policy consideration for ICT adoption in the financial segments of the developing economies. According to the field investigations, cash withdrawal through different bank distribution channels shows that ATM generates over 45% of the banking profits. It is the biggest distribution channel for cash withdrawal with over 97% of all cash withdrawals. The new cashless applications are also perceived to benefit all the key plays in the financial market segments.

In summary, with good regulatory policy frameworks, functional markets, skilled workforce in place, the socio economic impact of ICT in the business processes of financial institutions will in turn drive sustainable economic growth in the developing countries.

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