Effect of Information and Communication Technology (ICT) on Corporate Performance: A Study of Selected Quoted Banks

Akujor Jane Chinyere[1], Eyisi Adanma Sabina[2], Ijeoma Chimaobi[3]

[1]Department of Financial Management Technology, Federal University Of Technology Owerri, Imo State, Nigeria.

[2]Department of Accounting, Michael Okpara University Of Agriculture Umudike, Abia State Nigeria.

[3]Department f Banking And Finance, Michael Okpara University Of Agriculture Umudike, Abia State, Nigeria.

ABSTRACT: The study investigates the effect of Information and Communication Technology (ICT) on corporate performance using Zenith Bank Nigeria Plc. and United Bank for Africa Plc. asa study. Data were obtained from annual financial statement published by the bank from 2010 -2016.Corporate performance was proxied by Return on Equity, Return on Asset and Earnings per Share. The ordinary least square regression technique with the aid of the statistical package for social sciences (SPSS) version 21were employed in the analysis. Findings revealed that ICT has a very weak (low) effect on corporate performance measured with return on equity, almost no effect at all on corporate performance measured with return on assets, and positive effect on corporate performance measured with earnings per share. Therefore the study recommends that; there is need for the bank management team to prioritize the ICT need of the bank to avoid unnecessary investment on ICT gadgets in order to reduce the cost associated to ICT operations of the bank. Also, staff training and development are paramount to enable the effective and efficient utilization of the ICT resources. Furthermore, government should rise up to her duty to provide enabling environment for the thriving of businesses.

KEYWORDS: Information and communication technology, Bank corporate performance, Return on equity, Return on assets and Earnings per share.

INTRODUCTION

Information and Communication Technology (ICT) is a major tool of transformation in modern society. Nowadays, a country without ICT is winking in dark. ICT is a tree that comprises any communication device which includes; radio, television, computers of various types, internets and other communication media. Rouse (2005) defined ICT as an umbrella that includes any communication device or application encompassing television,radio,cellular phones, computer and network hardware and software, satellite system as well as the various services and applications associated with them.

According to Abdulrahman, &Loai (2015), Information and communication technologies (ICTs) are now an integral part of organizational life in recent times. These technologies are being utilized in communications, decision making support, production or manufacturing, operation, and in administration or office work. The introduction of computer and advent of internet have changed the way we live in the modern world. To be successful in the 21st century, industries must take advantage of the new information technology especially in internet and globalization (Ayatse, 2006). Modern innovations have led to the description of the age in which we live as "the information age." Information technology and Management therefore plays a vital role to the extent that timely access to information could save a life, while improper management of information could lead to huge problems and losses of opportunities. According to Attom (2017) Information technology (IT) is defined as any technology which supports activities involving the creation, storage, manipulation and communication of information; together with their related methods, management and application. ICT is a fundamental ingredient for globalization and computer trading has therefore, made global markets technically possible. Information technology and systems have revolutionized firms and industries, becoming the largest component of capital investment in many industrialized societies. More so, Information systems are transforming businesses and the visible results of these include the increased use of cell phones and wireless telecommunication devices, a massive shift toward online news and information, booming e-commerce and internet advertising, and new federal security and accounting laws that address issues raised by the exponential growth of digital information. The internet has also drastically reduced the costs of business operating on a global scale. Laudon&Laudon (2007) asserted that these changes have led to the emergence of the digital firm, a firm in which; most of the firm's significant bussiness relationships with customers, suppliers, and employees are digitally enabled and mediated.

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Information systems are essential for conducting day-to-day business as well as achieving strategic business objectives. Nigerian banking industry would be non-existent without information systems. Some service industries such as finance, insurance, and real estate industries could not operate without information systems. In 1950s, corporate entities began the use of computers primarily as tools for recording and processing accounting transactions. ICT has really been a part of industries for about the last 60 years. Nonetheless, ICT is one of the most important resources in today's business environment and successful businesses are investing heavily in ICT (Hagg, Cummings &Dawkings, 1998). The ongoing diffusion of Information and Communication Technology (ICT) among firms is a current example of the dynamics of technological change and economic development (Koellinger, 2006).

It is in recognition of the contribution of information and communication technology (ICT) to corporate performance of this country and the fact that there is need for the diffusion of information on effect of ICT which led to an increased awareness of the value of information systems in Nigerian Industries and business. However, concerted attempts to match the increased awareness with profitability of ICT investments of the campaign have been minimal giving rise to an information gap. It is in realization of the need to bridge this gap that this research work was carried out to examines the effect of Information and Communication Technology (ICT) on Corporate Performance among banks in Nigeria.

RESEARCH PROBLEM

In recent times, many deposit banks have faced different financial distress, slow in transaction cycle and low return on investment despite the high investment in the ICT by Nigerian deposit banks. The essence of such investment is to turn around the fortune of the bank industry, however, in some of the banks, the result is the opposite. Therefore, it becomes necessary to evaluate the effect of earnings on investment in ICT industry with the view of unveiling the contribution of such investment to corporate performance.

OBJECTIVES OF STUDY

The study examines the effect of ICT on corporate performance of banks in Nigeria.
Specifically, the objective of the study, include:
a) To evaluate the effect of ICT cost on the bank's return on equity (ROE);
b) To determine the effect of ICT cost on the bank's return on assets (ROA);
c) To ascertain the effect of ICT cost on the bank's earnings per share (EPS).

RESEARCH QUESTIONS

The following research questions are necessary for this research work:
a) What is the effect of ICT coston the bank's return on equity (ROE)?
b) To what extent has ICT cost affected the banks return of assets (ROA)?
c) To what extent has ICT cost influenced the bank's earnings per share(EPS)?

RESEARCH HYPOTHESES

H_{o1}:   ICT cost has no significant effect on the bank's return on equity.
H_{o2}:   ICT cost has no significant effect on the bank's return on assets.
H_{o3}:   ICT cost has no significant influence on the bank's earnings per share.

REVIEW OF RELATED LITERATURE
Conceptual Framework
Information Technology
Information technology refers to anything related to computing technology, such as networking, hardware, software, the Internet, or the people who work with these technologies. According to Daft (1997) IT can be defined as the hardware, software, telecommunications, database management, and other information-processing technologies used to store, process, and deliver information. Information technology is commonly used to assist managers with direct control over business functions, personnel and other resources. As managers oversee resource coordination and allocation, it can be difficult to coordinate business functions across various projects. Information technology is one of the key innovations that is frequently implemented to assist in this process (Hobday, 2000). Peansupap and Walker (2005) maintain that IT is often implemented as it is believed to facilitate communication, improve integration, enhance productivity and service delivery (Bjork, 1999). As organizations grow and change, they depend more and more on information technology for their survival (Feeny&Willcocks, 1998). Companies today implement and use information technology to find solutions to business problems, to improve management decision-making, enhance productivity and quality, and compete for new markets in our global and aggressive business environment (Porter & Millar, 1985). Moreover, IT can be seen as a powerful force that opens exciting opportunities for organizations to achieve their missions and goals in an effective way.

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Therefore, leaders in organizations must obtain an overall appreciation of the potential of IT and link the acquisition and utilization of IT to the organizational mission (Hacker & Saxton, 2007).

2.1.2 Organization Performance
Information technology is at the core of many business functions, operations, products and services. Today, organizations worldwide spend over 50% of their new investment funds on IT and related communications. How organizations manage these large investments is of critical importance to organizational efficiency and effectiveness. IT is often the link between the business model and the critical drivers of success. Many organizations have been unsuccessful with their IT-based investments because of poor alignment of IT with the business. Information provided by the system helps management monitor trends and forecast demand and production requirements more accurately.

The effect of Information Technology on organizations' services and performance has been examined by many studies (Beckey, Elliot, &Procket, 1996; McNutt, & Boland, 1999). Although most of these studies have suggested that IT plays a vital role in improving the quality and quantity of information, its potential for adoption and innovation is often uncertain (Mano, 2009). Different firms allocate their resources differently in a way that maximizes their objectives and those firms that allocate more resources on IT perform better than those firms that allocate less resources (McAfee &Brynjolfsson, 2008). Achieving high performance also requires good IT infrastructure supported by good IT management practice (Mwania&Muganda, 2012).

2.2 Theoretical background
ICT is a combination of information technology and communication technology. It is a broad term that covers all available communication gadgets such as television sets, personal computers, cell phones etcetera. The ICT includes both internet connected devices and mobile ones supported by wireless technology. It merges computing with high speed communication link carrying data, sound and video (Alabi, 2005). It deals with the collection, storage, manipulation and transfer of information using electronic means. Communication technology refers to the physical devices and software that link various computer hardware components and transfer data from one physical location to another (Laudon, 2001).
The relationship between ICT and performance has attracted the attention of researchers in recent times. Several studies have been conducted to investigate this relationship. It is however worthy to note that there had never been a consensus on whether ICT contribute to organizational performance or not.

Different theoretical approaches have been adopted by researchers to investigate the nature of the relationship between ICT and firm performance over the years. Transaction cost theory (Williamson, 1975); Value chain analysis (Porter, 1985); and Resource-based view which is a more recent theory that is widely embraced by many such as Bharadwaj (2000), Wade and Hulland (2004), Kim et al. (2006), Rai et al. (2006), Wu et al. (2006), Ordanini&Rubera (2010), Lee, Koo & Nam (2010), Fahy& Hooley (2011); Rashidirad, Syed & Sol- tani (2012).
The resource-based view (RBV) of the firm posits that firms compete on the basis of "unique" corporate resources that are considered to be valuable, rare, difficult to either imitate or substituted by other resources. The theory stemmed from the area of strategic management research and widely attracts attention as a suitable tool to examine the value delivered by IT resources (Melville, 2004; Wade & Holland, 2004). The resource-based theory rationalizes firm's superior performance to organizational resources and capabilities. The resource-based view of the firm links the performance of organizations to resources and skills that are firm specific, rare and difficult to imitate or substitute (Barney, 1991). Hence, it is a theory that is mostly preferred by researchers in this area of study. This paper is based consequently on this theory. The paper highlights the importance of ICT investment (ICTINV) and ICT cost efficiency (ICTCE) as pivotal determinants of commercial banks capability and examines the relationship between ICTCE, ICTINV, and performance of commercial banks in Nigeria.

Resource-based view of ICT and firm performance
Extant literature reveals that firms do compete on the basis of unique corporate resources that are valuable, rare, difficult to imitate, and non-substitutable by other resources (Barney, 1991; Corner, 1991; Schulze, 1992). RBV operates under the assumptions that the resources needed to conceive, choose and implement strategies are heterogeneously distributed across firms whose differences remain stable over time (Barney, 1991). Resources can be broadly defined to include: assets, knowledge, capabilities, and organizational processes (Bharadwaj, 2000). Grant (1991) however distinguishes between resources and capabilities and further classifies resources into tangible, intangible and personnel-based resources. The tangible resources include: financial capital and physical assets of the firm such as plant, equipment, and stocks of raw materials whereas, intangible resources include reputation, brand image, and product quality while personnel based resources include technical know-how, and other knowledge assets including dimensions such as organizational culture, employee training, loyalty, etc.
The ability of a firm to create competitive advantage depends on its capability, which is the extent to which the organization can assemble, integrate, and deploy valued resources to create or sustain competitive advantage in the industry to which it belongs.

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The information and communication technology infrastructure of an organization comprises of its physical ICT asset inventory. The business functionality of an organization depends on the reach and range of the stock of this resource. It is a major business resource and a key source for attaining long-term competitive position (McKenney, 1995). Barney (1991) contended however, that physical assets can only serve as sources of competitive advantage if they outperform equivalent assets of competitors. This notion arises considering the fact that physical asset can be easily duplicated by competitors and as such may not be regarded as sources of competitive advantage in themselves. They can however, become sources of competitive advantage when their synergetic benefits are exploited to enhance the organizational competitiveness. The relationship between ICT investment and firm performance has been studied by several researchers over the years. Bitler (2001) investigated the relationship between information and communication technology investments and small firms' performance. His study revealed that there was a significant difference between firms that adopt ICT and those that do not adopt the technology.

In their study conducted to examine technological progress and its effects in the banking industry using relevant data, Berger et al (2003) found that ICT investment leads to improvement in costs. The improvement was hinged on productivity increase in form of improved "back-office" technologies which is in form of organization related benefits such as reduced costs of operation as well as improved "front-office" technologies which is in form of benefits to customers such as improved quality and variety of banking services.

Evidence from other empirical studies conducted on the contribution of automated teller machines (ATMs) to banks' profitability reveal that investment in ATMs increases both the volume and value of deposit accounts, reduces banking transaction costs, reduces the number of staff and the number of branches and consequently improves banks' profitability (Abdullah, 1985; Katagiri, 1989; and Shawkey, 1995).

In his study on analysis of the values of return on asset (ROA) arising from ICT investment in the US, Kozak (2005) found that the value of the return on asset for the US banking sector has increased by 51% thereby suggesting that improvement in ICT investment, associated with extensive office networks and range of offered services have helped to generate additional revenues for banks thus pointing to the fact that a huge number of diverse operations require higher ICT investment.

Furthermore, Osei and Harvey (2011) in their study (covering fifteen banks over a period of ten years) on investments in ICT and bank business performance in Ghana found that investment in ICT tend to increase profitability (ROA and ROE) for high ICT level banks than for lower ICT level banks. ICT cost efficiency (ICTCE) use has continued to permeate virtually every organization and is being applied in a wide range of areas. It has provided new ways to store, process, distribute, and exchange information within companies and with customers (Kollberg& Dreyer, 2006). The recent ICT developments have enormous implications for the operations, structure and strategy of organizations (Buhalis, 2003). Application of ICT to enhance the performance of organizations of all types around the world do not only help to cut costs and improve efficiency but also for providing better customer services (Ashrafi&Murtaza). Spanos et al. (2002) posit that ICT has the ability to enhance, coordinate and control the operations of many organizations and can also increase the use of management systems.

Conversely, Ongori&Migiro (2010) maintain that the impact of globalization has obliged many organizations to adopt ICT in order to survive in the present competitive era especially in the area of competing with large organizations. Bresnahan et al. (2002) argue that durable productivity gains have been achieved in enterprises that use ICT. This is traceable to the fact that ICT helps in the effective low of data in organizations thereby assisting organizations to obtain information at any given time, which in turn helps these organizations to reach their desired target. Furthermore, ICT brings about changes in businesses and helps to create competitive advantage hence, organizations of all types tend to adopt the innovation (Apulo and Latham, 2011). However, on the basis of the socio-technical view (STV) of an organization, it is instructive to note that the ICT acquisition is in itself not a guarantee of improved organizational performance. The principle of STV holds that for there to be an optimal benefit from acquisition of ICT, its potential must be optimally harnessed in the interest of achievement of organizational objective (Trist, 1990).

The theory posits that technology rarely possesses the capacity to advance the overall performance of an organization. The import of this view lies in its recognition of interdependencies between technological and social factors as well as sequential impacts of technology. The theory argues that organizations are neither exclusively social nor predominantly technical systems but are rather best conceived as sociotechnical systems.

The two dimensions of an organization though are independent but yet are correlative thus; organizational activities and outcomes are optimal when both social and technical elements of an organization are strong (Trist, 1990). This theory (STV) complements and builds on the RBV which holds that a firm's combination of technological and human inputs are socially complex, therefore organizational routines can be difficult to imitate, forming the basis of competitive advantage and superior performance (Barney &Ketchen, 2001).

The STV principle underscores the argument in favor of ICT cost efficiency being a necessary condition for the attainment of optimality in the deployment of ICT to enhance organizational performance. Cost efficiency in the spirit of strategic cost management is concerned with strategies aimed at obtaining maximum possible revenue with minimum possible inputs

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(Fethi&Pasiouras, 2010; Casu&Giradone, 2004, 2006). Furthermore, Casu (2004), and Tanna (2009) posit that efficiency can be measured in terms of observable increase in efficiency owing to technical progress which is a function of technological change.

Bank Performance

Measurement of bank performance is a complicated activity. Researchers have used different approaches to assess the performance of banks in various countries at various times. However some of the most reliable yardsticks that have been used in the past to measure bank performance are the return of assets (ROA) and return on equity (ROE). Ahmed and Khababa (1999) in their assessment of bank performance in Saudi Arabia employed three ratios as measures of performance – ROE, ROA and percentage change in earnings per share. Sinkey (1992) posits that return on asset is a comprehensive measure of overall bank performance from an accounting perspective being a primary indicator of managerial efficiency as it indicates how capable the management of a bank has been in converting the bank's asset into net earnings. Rose and Hudgins (2006) however maintain that ROE is a good measure of accounting profitability from the shareholders perspective. It approximates the net benefit that the stockholders have received from investing their capital. Akintoye (2004) also identified three ratios that can be used as proxies for organizational performance namely: Net Profit Margin (NPMARG), Return on Capital Employed (ROCE), and Return on Assets (ROA). Arising from the principles of both the resource-based view and sociotechnical view .They are another measure of organizational performance, which depends on the basis of the organization's information and communication technology cost efficiency (ICTCE). This is a measure of ICT capability of an organization – the extent to which the organization can assemble, integrate, and deploy valued resources to create or sustain competitive advantage in the industry to which it belongs (Russo and Fouts, 1997). These variables of organizational performance in their nominal formats are   expressed in their respective ratios as follows:

Return on Capital Employed

Return on Assets

Liquidity ratio

Earnings per share

2.3 Empirical Review

There are several authors who have contributed in different ways to evaluate the effect of ICT on corporate performance. We shall look at some of them to help us identify any research gap. As such Attom (2017) in his works "The impact of Information Communication Technology (ICT) on business growth strategies of Small and Medium-scale Enterprises (SMEs) in the Awutu-Senya East Municipality of Central Region of Ghana."He posits that general perception is that owners as well as managers of these enterprises willfully fail to embrace ICT innovations and programs that can easily turnaround the fortunes of their enterprises. The study used a survey of 162 enterprises classified as small-scale (121) and medium-scale (41) enterprises within the Awutu-Senya East Municipality (mainly Kasoa and its environs) of Central Region of Ghana. Overall, the study revealed that majority of SMEs (73.29%) studied do not make use of ICT and this to a greater extent has had a negative effect on their growth potential and success. A shocking proportion of about 27% of SMEs use ICT in their businesses but further maintained it is too expensive to operate. The study recommends capacity building for SME operators about the benefits of ICT in their business processes coupled with sensitization about its use, would invariably turn the fortunes of their enterprises.

Bonza (2015) studied information technology and the company performance in the sector of services. The theoretical and practical investigations already demonstrated the potential of the Information Systems adoption and implementation, to improve the organization performances (efficiency, productivity, organization competitiveness and development etc.). However, this potential is not always fully valued. The best performances could be achieved when the IT investments are aligned with internal capabilities and organizational processes within company strategy. The aim of this contribution is to review main published studies investigating the direct and indirect potential effects of IT on company performance in the service sector. There are also addressed issues regarding the measurement difficulties of the IT impacts on organization performance and the limitations generated by the service diversity and the fast dynamics of their market.

Al-Azzawi&Altmimi (2015) researched on the effect of information and communication technology investment on the profitability of the Jordanian commercial banks. The objective of this research paper is to evaluate the effect of investment in information and communication technologies on the profitability and performance of the Jordanian commercial banks, also to know whether it helps to improve sales or to reduce the overall operating expenses. To arrive at this objective, the researchers used Cobb-Douglas production function as a proxy to measure these effects. The researchers used two measures of profit: ROA and ROE as dependent variables for this purpose, depending on the annual reports of the sample.

Jordanian commercial banks as a source for the raw data that was used in the analysis for the period between2006 to 2013. SPSS was used as a statistical tool for the arrangement of data and multiple regression was used as a statistical tool for the analysis. From the analysis of the study, the following conclusion was reached: there is a positive effect of investment in information and technologies on the profitability and performance of the sample Jordanian commercial banks used in this research.

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In the works of Aregbeshola&Binuyoon "The impact of information and communication technology (ICT) on commercial bank performance: evidence from South Africa". This paper contributes to the ongoing debate regarding the contribution of Information and Communication Technology (ICT) to firm's performance. As the ICT impact on bank performance is beyond the scope of most similar studies, this study further investigated the impact of Information and Communication Technology Cost Efficiency (ICTCE) on the performance of banks as well. The study assessed the impact of ICT on the performance of South African banking industry using annual data over the period 1990-2012 published by Banks cope – World banking information source. Data analysis is carried out in a dynamic panel environment using the orthogonal transformation approach. The robustness of the results were affirmed by residual integration regression analysis using both Pedroni and Kao methods. The findings of the study indicated that the use of ICT increases return on capital employed as well as return on assets of the South African banking industry. The study discovered that more of the contributions to performance come from information and communication technology cost efficiency compared to investment in information and communication technology. The study recommends that banks emphasize policies that will enhance proper utilization of existing ICT equipment rather than additional investments.

Packová (2013) in his study, "Impact of ICT investments on performance of companies in transition economies": evidence from Czech republic, Hungary and Slovakia, compared their study with the work by Dobija et al. (2012) with our results, the closest to Polish results are the ones from Hungary.On the other hand, other two Visegrad countries, Czech Republic and Slovakia, provided similar results as well, although they are in contrast to Polish and Hungarian. Their conclusion is not surprising when we take into account that Czech Republic and Slovakia form common country - Czechoslovakia. They discovered that the differences and similarities among the transition countries already existed before the transition started as a consequence of historical background. For example in Hungary and Poland, private ownership was allowed while it was forbidden in Czech Republic and Slovakia. Moreover, differences in results can be influenced by transition process chosen – particularly, differences in the choice of the privatization method, the speed of transition or government reform policies undertaken during transition. They posit reasons why economic situations in these countries are different and also why the impact of ICT investments in these economies are not the same.

Also, Olajide (2013), in his study "Information and Communication Technology (ICT) and Insurance Companies Profitability in Nigeria". The researcher concluded that there was a positive relationship between ICT adoption and insurance companies' profitability in Nigeria. This implies that adoption of ICT by insurance companies can enhance their efficiency, their quality of service delivery, and their profitability. The implication of the findings for practice is that insurance companies should endeavor to update their ICT facilities regularly, in view of its impacts on quality of service delivery and profitability. The paper also highlights the need for regular training of insurance personnel to keep them abreast of the current innovations in the use of ICT to ensure that the industry contribute positively to the economy.

Ayatse (2012), on his study, "impact of information communication technology (ICT) on corporate performance: A case study of cement manufacturing firms in Nigeria", the study was motivated by observational sought to show the impact of ICT on corporate performance focusing on six (6) cement plants in Nigeria. Research questions and objectives were stated and literature massively read from other empirical work on contributions of ICT to organizational performance in Nigeria. The population for the study comprised of 6080 staff of six cement industries where 375 were selected using Yaro Yamane's formula as sample size for the study, however, only 300 questionnaires were successfully completed and returned and they were used for descriptive statistics, in order to ensure validity of the instrument(questionnaire), experts and friends were given the study for assessment and a pilot study was carved out on two cement industries not selected for the study. Responses, rate of responses and simple percentage(%) were presented in tabular form for critical analysis. The conclusion was drawn that ICT has positively contributed to corporate performance, recommendation on improved investment and control in ICT were given and finally the researchers proposed future grey areas for research such as the impact of ICT investment on revenue and market share, and optimal level of investments for firm's ICT.

Esselaar, Stork, Ndiwalana&Deen-Swarray (2008) in their study "ICT Usage and Its Impact on Profitability of SMEs in 13 African Countries", reported on a small and medium enterprise (SME) survey carried out by the Research ICT Africa (RIA) in 14 African countries. They argued that the negative return on investment reported in the literature can be attributed to the failure to distinguish between the formal and informal sectors. This article demonstrates that informal SMEs have a higher portability than formal ones. It further shows that ICTs are productive input factors and that their use increases labour productivity for informal as well as formal SMEs. The article further argues that there is still demand for ªxed-line phones among SMEs but that mobile phones have become the default communication tools because ªxed lines are either too expensive or not available. The primary policy recommendation arising out of this is that applications for SMEs need to be developed using mobile phones.

Tagliavini, Pigni, Ravarini&Buonanno (1996), carried out a research on empirically testing the impact of ict on business performance within SMEs. This work has a specific focus on Small and Medium Enterprises (SMEs) and concentrates the investigation of the IS/business performance relationship on the issue of strategic alignment. The study presents the results of a

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survey carried out on a sample of 174 Italian SMEs. Data were collected through a questionnaire filled-in through direct interviews to Chief Executive Officers (CEOs). The empirical work shows that information systems are developed coherently with SME strategic imperatives. Moreover, research results provide evidence that such alignment positively affect the overall business performance. Previous studies carried out were mainly on SME and these studies were only survey study which did not apply statistically tool for analysis of effect of ICT on performance. However, this study considers cost of ICT and performance cost and its implication on return on Asset.

3.0 RESEARCH METHOD

The research method adopted is ex post research. Data were collected from published financial statement of Zenith Bank Plc. and United Bank of Africa Plc. Nigeria from 2010 to 2016. Corporate Performance was proxied with return on equity, return on assets and earnings per share for the period of seven years.

Operational definition of the performance variables:

$$ROE = \frac{\text{Net Profit after Taxes}}{\text{Total Equity (SHF)}} \times \frac{100}{1}$$

$$ROA = \frac{\text{Profit before Interest \& taxes}}{\text{Total Assets}} \times \frac{100}{1}$$

$$EPS = \frac{\text{Net Profits}}{\text{Number of ordinary shares}} \times \frac{100}{1}$$

The statistical toll adopted in the analysis of the data collected is the Ordinary Least square regressions with the aid of the Statistical Package for Social Sciences (SPSS) version 21.To carry out the analysis, the independent variable of the study (ICT cost) was regressed on each of the three proxies of the dependent variables as represented in the following linear models:

$$CP = F(ICTc) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where CP represents Corporate Performance and ICT c represents information communication technology cost.

Expressing the above mathematical function to regression equation incorporating the three dependent variable proxies, we have the following:

$$ROE = \alpha_0 + \alpha_1 ICTc + E \ldots\ldots\ldots\ldots.. \quad (2)$$
$$ROA = \alpha_0 + \alpha_1 ICTc + E \ldots\ldots\ldots\ldots.. \quad (3)$$
$$EPS = \alpha_0 + \alpha_1 ICTc + E \ldots\ldots\ldots\ldots.. \quad (4)$$

Where: ROE represents return on equity

ROA represents return on assets

EPS represents earnings per share

α_0 represents the intercept of the linear regression equation

α_1 represents the coefficient of the independent variable (ICTc)

Given that the values of the dependent and independent variables are not on equal bases, the data for the variables are logged to bring them to equal bases; hence, the following logged models which were used in the analysis:

$$LogROE = \alpha_0 + \alpha_1 LogICTc + E \ldots\ldots\ldots\ldots.. \quad (5)$$
$$LogROA = \alpha_0 + \alpha_1 LogICTc + E \ldots\ldots\ldots\ldots.. \quad (6)$$
$$LogEPS = \alpha_0 + \alpha_1 LogICTc + E \ldots\ldots\ldots\ldots.. \quad (7)$$

The hypotheses of the study are decided on based on the result of the t-statistics (significance) from the regression analysis.

Decisions on the assertions of the hypotheses are made on the following criteria (rules):

If the P-value (t-stat. significance) is greater than 5% level of significance, the hypothesis will be accepted and the alternative rejected; the reverse is the case if the P-value is less than or approximately equal to 5%.

3.2 Population of the study

The population of the study is from Annual report of Zenith Bank and United Bank of Africa Plc. from 2010 -2016

4.1 DATA PRESENTATION AND ANALYSIS

A. Data Presentation

The data collected for the variables of the study are presented on the following table:

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Table 1. Data for ICTc, ROE, ROA, EPS, PBIT, PAT, SHF (Equity) and TA.

YEAR	ICT Cost N'M	ROE (%)	ROA (%)	EPS (K)	PBIT N'M	PAT N'M	SHF (EQUITY) N'M	TOTAL ASSETS N'M
2010	1,567	10.16	2.63	119	50,114	37,823	372,190	1,906,320
2011	1,677	12.35	2.90	132	67,440	48,704	394,268	2,326,695
2012	1,728	21.75	3.92	305	102,100	100,681	462,956	2,604,504
2013	3,154	19.53	3.52	301	110,597	99,455	509,251	3,143,133
2014	3,126	17.25	3.19	316	119,796	95,318	552,638	3,755,264
2015	3,676	18.06	3.07	315	115,220	98,784	546,946	3,750,327
2016	5,425	19.35	3.27	380	139,927	119,285	616,353	4,283,736

Source: Deductions from the Financial Statements of Zenith Plc for various years

Table 2. Logged Data for the key Variables of the Study

Log ICTc	Log ROE	LogROA	LogEPS
3.20	1.01	0.42	2.08
3.22	1.09	0.46	2.12
3.24	1.34	0.59	2.48
3.50	1.29	0.55	2.48
3.49	1.24	0.50	2.50
3.57	1.26	0.49	2.50
3.73	1.29	0.51	2.58

Source: Ms-Excel Computation with Table 1 data

Table 3. Data for ICTc, ROE, ROA, EPS, PBIT, PAT, SHF (Equity) and TA.

YEAR	ICT Cost N'M	ROE (%)	ROA (%)	EPS (K)	PBIT N'M	PAT N'M	SHF (EQUITY) N'M	TOTAL ASSETS N'M
2010	1,667	1.15	0.26	7	3693	2167	187730	1432632
2011	1,777	(9.63)	(2.25)	(51)	(37292)	(16385)	170058	1655465
2012	2,828	24.61	2.39	1.44	46180	47375	192467	1933065
2013	3,454	19.78	2.34	1.41	51841	46483	235036	2217417
2014	3,326	14.22	1.81	1.22	42378	40083	281933	2338858
2015	4,976	14.09	2.29	1.36	50735	47642	338231	2216337
2016	6,425	12.16	2.27	1.31	57649	47541	390900	2539585

Source: Deductions from the Financial Statements of United Bank of Africa for various years

Table 4. Logged Data for the key Variables of the Study

Log ICTc	Log ROE	LogROA	LogEPS
3.221936	0.060698	-0.58503	0.845098
3.249687	0.983626	0.352183	1.70757
3.451479	1.391112	0.378398	0.158362
3.538322	1.296226	0.369216	0.149219
3.521922	1.1529	0.257679	0.08636
3.69688	1.148911	0.359835	0.133539
3.807873	1.084934	0.356026	0.117271

Source: Ms-Excel Computation with Table 3 data

4.2 Data Analysis and Interpretation
The data presented above was analyzed using multiple regressions with the aid of statistical package for social sciences (SPSS) because of the volume of data and to ensure accuracy in computation. The result below was generated from the analysis

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Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.996[a]	.992	.984	.02724	1.760

a. Predictors: (Constant), LogEPS, LogROA, LogROE

b. Dependent Variable: LogICTc

Source: SPSS version 21 Statistical result, 2018, UBA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.942[a]	.888	.776	.09678	2.934

a. Predictors: (Constant), LogEPS, LogROA, LogROE

b. Dependent Variable: LogICTc

Source: SPSS version 21 Statistical result, 2018, Zenith

The above table shows that the correlation coefficient are R =0.996 and 0.942 respectively, this means that there are 99.6% and 94.2% correlation among the parameters of the model of this study. The table also shows the coefficient of determination R^2 =0.992 and 0.888 respectively, this implies that the total variation in the dependent variable (LogICTc) is explained by the independent variables (LogROE, LogROA, and LogEPS) of both banks.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.276	3	.092	123.778	.001[b]
	Residual	.002	3	.001		
	Total	.278	6			

a. Dependent Variable: LogICTc

b. Predictors: (Constant), LogEPS, LogROA, LogROE

Source: SPSS version 21 Statistical result, 2018, UBA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.223	3	.074	7.922	.062[b]
	Residual	.028	3	.009		
	Total	.251	6			

a. Dependent Variable: LogICTc

b. Predictors: (Constant), LogEPS, LogROA, LogROE

Source: SPSS version 21 Statistical result, 2018, Zenith

The above two tables show that the F-ratio =123.778, for UBA and F-ratio =7.922 for Zenith bank. They were used to test the model of this study to ascertain if there exist significant relationship between the parameters. The probability of the F-statistics in values are 0.001 and 0.062, the probability of the F-statistics shows the significance of the model at the level of 0.05.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.589	.102		44.912	.000
	LogROE	-1.228	.119	-2.524	-10.288	.002
	LogROA	1.624	.138	2.671	11.733	.001
	LogEPS	-.410	.026	-1.169	-15.827	.001

a. Dependent Variable: LogICTc

Source: SPSS version 21 Statistical result, 2018, UBA

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Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.688	.680		2.484	.089
	LogROE	.745	3.358	.439	.222	.839
	LogROA	-3.466	3.620	-.948	-.957	.409
	LogEPS	1.075	1.217	1.063	.883	.442

a. Dependent Variable: LogICTc

Source: SPSS version 21 Statistical result, 2018, Zenith

From the two tables, the estimated regression with t-statistics probability values of individual variables in parenthesis is given as:

LogICTs=4.589-1.228LogROE +1.624LogROA-0.410LogEPS

   (0.000)   (0.002)   (0.001)   (0.001)

LogICTs=1.688+0.745LogROE - 3.466LogROA+1.075LogEPS

   (0.089)   (0.839)   (0.409)   (0.442)

The equation above shows the estimated regression equation used to analyze the effect ofInformation and Communication Technology (ICT) on corporate performance: A study of selected quoted banks.The table shows the t-statistics value of the individual variables to be -10.288, 11.733, and 0.883 for return on equity, return on assets and earnings per share for UBA respectively while 0.222, -0.957 and 0.883 for return on equity, return on assets and earnings per share for Zenith bank Plc respectively. The probability of t –statistics also shown explains the significance of each of the dependent variables at 5% level of significance.

4.2 Hypotheses Test

Test of Hypothesis 1:

The first hypothesis of this study is restated (in null form) as follows:

H_{o1}: ICT cost has no significant effect on the bank's return on equity.

In deciding on this hypothesis, reference is made to the result of the first objective cum hypothesis. From the analysis, it is revealed that the p-value (t-sig) is 0.839 for zenith and 0.002 for UBA which is greater than the significant level of 5% for zenith bank but less than 5% for UBA. Therefore, the null hypothesis is accepted for zenith and the associated alternative accepted for UBA. The study thus holds that the investment of Zenith bank Plc on information and communication technology (ICT) has shown no significant effect on the bank's return on equity (ROE) but that of UBA shows significant effect on the bank's return on equity (ROE).

Test of Hypothesis 2:

The second hypothesis of this study is restated (in null form) as follows:

H_{o2}: ICT cost has not significantly affected the bank's return on assets.

In deciding on the second hypothesis of this study, reference is made to the result of the analysis in respect of the second objective cum hypothesis. From the analysis, it is revealed that the p-value (t-sig) is 0.409 for zenith bank and 0.001 for UBA which is far greater than the significant level of 5% for zenith bank but less than 5% level significance for UBA. Therefore, the null hypothesis is accepted for zenith bank and the associated alternative accepted for UBA. The study adopts the assertion of the null hypothesis to be statistically true and thus holds that the investment of Zenith bank Plc on information and communication technology (ICT) has shown no significant effect on the bank's return on asset (ROA) for zenith but shows significant effect on the bank's return on asset (ROA) for UBA.

Test of Hypothesis 3:

The third hypothesis of this study is restated (in null form) as follows:

H_{o3}: ICT cost has no significant influence on the bank's earnings per share.

In deciding on the second hypothesis of this study, reference is made to the result of the analysis in respect of the second objective cum hypothesis. From the analysis, it is revealed that the p-value (t-sig) is 0.442 for zenith bank and 0.001 for UBA which is far greater than the significant level of 5% for zenith bank but less than 5% level significance for UBA. Therefore, the null hypothesis is accepted for zenith bank and the associated alternative accepted for UBA. The study adopts the assertion of the null hypothesis to be statistically true and thus holds that the investment of Zenith bank Plc on information and communication technology (ICT)

has shown no significant effect on the bank's earnings per share (EPS) for Zenith bank but shows significant effect on the bank's earnings per share (EPS) for UBA bank.

CHAPTER 5
5.0 SUMMARY OF FINDINGS
The findings from the analysis of the study are summarized as follows:
1. Information and Communication Technology cost of Zenith bank plc. has positive but insignificant effect on the bank's return on equity but for UBA bank its shows significant effect on the bank's return on equity.
2. The cost of Information and Communication Technology deployment of Zenith bank plc.haspositively but insignificantly affected the bank's return on assets but for UBA its shows significant effect on the banks return on equity.
3. Information and Communication Technology cost of Zenith bank plc.has significant positive influence on the bank's earnings per share but for UBA its shows significant effect on the bank's earnings per share.

5.1 CONCLUSION
Based on the findings, the study concludes that:
The investment of Zenith bank of Nigeria Plc. and United bank of Africa Plc. on ICT has partly influenced the corporate performance of the bank. When performance is viewed from the point of view of returns to the owners' equity or asset invested, investment on ICT has not exerted any significant support; but if performance is considered from the perspective of earnings per outstanding share held, then the expenditure on ICT has really influenced the performance of the bank. Therefore, the high cost of financing the ICT undertakings of Zenith bank has not yielded the expected improvement in the corporate financial performance of the bank but for United Bank of Africa Plc., it has yielded the expected improvement in the corporate financial performance of the bank.

5.2 RECOMMENDATIONS
In view of the conclusion, the study recommends that:
1. There is need for the bank management team to prioritize the ICT need of the bank to avoid unnecessary investment on ICT gadgets in order to reduce the cost associated to ICT operations of the bank.
2. Staff training and development is paramount to enable the effective and efficient utilization of the ICT resources.
3. Government should rise up to her duty of provision of enabling environment for the thriving of businesses; this is important because the high cost of power provision for the operations of ICT equipment in banks generally and Zenith bank in particular contributes highly to the overall cost of operations, thus reducing the profitability of the bank.

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