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The Impact of Online Banking on the Performance of Nigerian Banking Sector

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Abstract: In this contemporary life, information technology (IT) has become a significant medium in economic and social development. Banking sector nowadays cannot move forward rapidly without the use of IT. In particular, online banking (e-banking) is one of the IT applications with the highest impact on the global economy in creating a new business environment in the sector. Therefore, the aim of this study is to examine the impact of e-banking on the performance of the banking sector in Nigeria. E-banking will be measured by the expenditure made on information and communication technology (ICT) investments, number of debit cards issued to customers, and number of automated teller machines (ATMs) installed by the banks. Return on assets (ROA), return on equity (ROE), and net interest margin (NIM) will be used as performance variables. The impact of e-banking on the bank performance will be examined in two periods: pre-consolidation (i.e., before adopting the e-banking) and post-consolidation (i.e., after adopting the e-banking). Data collection involves secondary data gathered via annual reports of 21 Nigerian banks. The SPSS software will be used for data analysis.

Keywords: Information technology, online banking, bank performance.

1. INTRODUCTION

Information technology (IT) has become part of necessity for human endeavours, more specifically on economic development, business transactions, quality of delivery, and productivity. IT refers to the use of software, hardware, services, and the supporting infrastructures to manage and deliver information via a voice, data, and video (Safeena & Date 2010; Uduji, 2013).

The use of IT applications has changed the entire business environment in an unprecedented manner (Uduji, 2013a). Banking sector, for instance, has benefited tremendously from online business (e-business) strategy. E-business is one of the subsets of IT applications and is commonly used for developing, innovating, and strengthening the competitiveness of banking industry (Oluwatolani, Joshua, & Philip, 2011). Hasan, Baten, Kamil, and Parveen (2010) argued that technological innovations are parcel and contribute to the distribution channels of the banks.

IT and online banking (e-banking) has become a key element of strengthening the competitiveness of the nation's economy and productivity, and efficiency of private and government banks (Oluwatolani et al., 2011) including in the developing countries like Nigeria. The evolution of IT has driven numerous changes in the banking industry starting from the distribution channels as evidenced by automated teller machine (ATM), mobile-banking, tele-banking, PC-banking, and the most recent technology, e-banking (Gallup, 2008). These technologies have replaced the cascading labour-intensive transaction system and paper-based payment instruments. Safeena and Date (2010) asserted that underestimating the importance of e-banking may ultimately increase the gap with industrialized countries as most banks are looking for opportunities that arise from the new market environment. Nigerian banks are expected to benefit from this persistent and enduring effect of e-banking on improving the efficiency and service delivery electronically.

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Existing literature (see, for example, Ojeka & Ikpefan, 2011) reported that e-banking has been adopted by the Nigerian banks at a slow pace. Prior to the advancement of the e-banking, there were 89 commercial banks in Nigeria. The number of banks, however, reduced to 24 banks due to the consolidation (i.e., mergers and acquisition) program. After the consolidation, many banks have started to adopt the e-banking system (Fasan, 2007; Ogbuji, Onuoha, & Izogo, 2012). Oluwatolani et al. (2011), in their study of the impact of IT in Nigeria's banking industry, reported that the bank consolidation has resulted to the use of high technology in the Nigerian banking industry. IT facilities, such as global system for mobile communication (GSM) phones, ATM, Internet facilities, optical character recognition (OCR), smart cards, funds transfer, e-banking, electronic mail, and bankers automated clearing services, have been used as a means of banking transactions.

Oyewole, Abba, El-Maude, and Gambo (2013), in their study of e-banking and bank performance in Nigeria, found that e-banking contributes positively to the bank performance in terms of return on assets (ROA) and net interest margin (NIM), but not to the return on equity (ROE). Nonetheless, the impact of e-banking on the performance of the Nigerian banks was limited to 8 commercial banks that have adopted e-banking between 1999 and 2010 only. The effect before and after the bank consolidation was, however, not examined. Our study addresses this gap.

A study by Abaenewe, Ogbulu, and Ndugbu (2013) considered the impact of e-banking on bank performance before and after the adoption of e-banking. Nonetheless, the sample of the study was limited to four Nigerian banks only. Our study focuses on all the 21 banks in Nigeria, hence, addressing this gap.

The objective of our study is, therefore, to examine the impact of e-banking on the performance of the Nigerian banks. Specifically, the impact of e-banking on the ROA, ROE, and NIM of the banks, before and after the bank consolidation, will be examined. Hence, the findings of this study will give empirical evidence on how Internet banks are different from the non-Internet banks in terms of its ROA, ROE, and NIM.

The remaining of this paper is organized as follows. Section 2 reviews the literature, followed by research model and hypothesis in section 3. Section 4 elaborates on the research method of the study. The last section concludes the study and explains the study's limitation.

2. LITERATURE REVIEW

2.1. The Nigerian Banking Sector

The Nigerian banking sector is primarily regulated by two bodies, namely, Central Bank of Nigeria (CBN) (which has the superior regulatory power) and Nigerian Deposit Insurance Company (used by the government to regulate and supervise the banking sector) (CBN, 2005). In 2009, the Nigerian economy hesitates and the banking industry experienced a crisis, which was elicited by worldwide occurrence. The stock market in 2008-2009 collapsed by 70% and many Nigerian banks had to be rescued. This was resulted from a sentiment in the industry that was tipped by the following interdependent factors (Sunusi, 2010).

- Large and sudden capital inflows that result to macro-economic instability,
- Major breakdown in corporate governance at banks,
- Lack of investor and consumer complexity,
- Inadequate financial position of banks for a disclosure and transparency,
- Significant gaps in regulatory framework and regulations,
- Uneven adequate supervision and enforcement,
- Unstructured governance and management processes at the CBN (weaknesses within the CBN), and
- Weaknesses in the business environment due to advent of new technology.

In 2004, the Governor of CBN announced a set of new regulations for the country's banking system, which stated that the banking system in Nigeria could only gain from a series of mergers among its member banks (Osinupebi, 2010). The Governor later announced a new requirement declaring that only banks with a minimum capitalization of N25 billion (approximately $172,000,000 in 2005 dollars) by the deadline of December 31, 2005 would be permitted to hold public sector deposits and to publicly trade shares (Soludo, 2004).

Prior to the announcement, there were 89 commercial banks in Nigeria with few enforced regulations and a low capital base. In 2005, the largest bank had a capital base of $240 million. According to the Central Bank, out of the 89 banks, 21 were considered marginally sound at best (CBN, 2005). In 2009, the CBN injected N620 billion ($4.48) of liquidity into the sector as a form of bailout in order to alleviate the banking sector and return confidence to the investors and markets in general (Kuye, Ogundele, & Andrew, 2013). The aim of the bailout is to achieve the outline pillars that could save the industry to compete with their global counterparts by enhancing the quality of the banks, establishing financial stability, enabling healthy financial sector evolution with the use of new technologies, and ensuring that the financial sector contributes to the real economy (Sunusi, 2010). This revolution has made the banking sector changed from the traditional mode of operation to presumably better ways with technological innovation that improves efficiency (Adesola, Moredeyo, & Oyeniyi, 2013).

2.2. Prior Studies of E-Banking

E-banking is defined as the use of Internet to deliver banking activities, such as transferring funds, paying bills, viewing current and savings account balance, paying mortgages, and purchasing financial instruments and certificates of deposits (Jayshree, 2013; Uduji, 2013). Payment cards have replaced cheques in some countries. While ATMs have become a source of receiving cash, e-banking has become a preferred means of paying invoices (Heli, 2006, as cited in Snellman, & Viren, 2009).

E-banking provides a lot of benefits to both customers and banks. For example, e-banking offers customers an opportunity to pay bills and performing transactions of any kinds electronically. Customers can also make payments of goods or services without necessarily coming with liquid cash to the bank or other business places, which reduce the risk of handling large amount of money. Abaenewe et al. (2013) pointed the following benefits of e-banking to the Nigerian bank customers:

- Fast retrieval of accounts balance from the customers chosen location,
- Fast and efficient funds transfer,
- Helps customers to revisit their account transaction history, and
- Quick ordering of bank statement.

Aderonke and Charles (2010), in their study of user's acceptance of e-banking in Nigeria, disclosed that ATM is still the most commonly form of e-banking system. Customers found it more suitable, easy to use, save time, and appropriate for their transaction needs.

Aduda and Kingoo (2012), in their study of e-banking and financial performance among commercial banks in Kenya, found that e-banking has a strong and significance marginal effect on the ROA of the banks. Uduji (2013), in his study of the use of IT for effective supervision of the marketing executives in the banking industry in Nigeria, found that the personal computer, in both desktop and portable form, is a superb message centre for managers receiving and relaying information quickly to the marketing executives.

Oluwatolani et al. (2011) argued that banks need to provide an excellent service to their customers who are difficult to be satisfied and accept less than average satisfaction. Sadeghi and Hanzaee (2010), in their study of customer satisfaction factors with e-banking services in Iran, found accessibility, security, convenience, usefulness, accuracy, bank image, and web site design as significant. Previously, customers had a relationship with a bank physically in front of staff that had access to the bank's information system. But nowadays, customers have direct access to all bank's information system, from workplace, home, or any other places where Internet access is available.

Gao and Owolabi (2008) investigated the factors that influence the consumer's adoption of e-banking in Nigeria. They reported that the level of awareness or attention, convenience, privacy, accessibility to computers and the Internet, cost, availability of knowledge, and supports are the relevant issues that need to be considered in determining the adoption of e-banking in Nigeria.

Yee-Loong, Ooi, Lin, and Tan (2010) examined the factors that affect the adoption of e-banking in Vietnam. Perceived usefulness, trust, and government support were found significant.

Oluwagbemi, Abah, and Achimugu (2011) reported that the use of IT facilities in Nigerian banking industry has brought about fundamental changes in the substance and the quality of the banking operations in the country. Nonetheless, a primary consideration in managing information system and IT is information security. Although the Internet provides benefits in terms of making information easily available, it also allows unwanted parties a gateway to the organization (González, Quesada, Picado, & Eckelman, 2004). Companies can implement information security in several ways.

Username and password, for instance, can be used to restrict access to information on a network. Sensitive or financial information that are transmitted on the network can be encrypted using a software that scrambles the data before it is sent, and then decrypts it when it is received (Teresko, 1999, as cited in Uduji, 2013).

In India, the existing studies of e-banking have given empirical evidence on the ability of IT to increase the effectiveness and efficiency of the business operation in the banking sector (see, for example, Chavan, 2013; Sadeghi & Hanzaee, 2010). Prior studies on the impact of IT technology in Nigeria's banking industry (see, for example, Oluwagbemi et al., 2011) are qualitative in nature. A study by Agwu and Carter (2014), on the other hand, focused specifically on the mobile phone banking in Nigeria.

In Nigeria, prior studies on the impact of e-banking on bank performance were limited to four (see, for example, Abaenewe et al., 2013) and eight commercial banks (see, for example, Oyewole et al., 2013) only. Oyewole et al., for instance, specifically focused on the commercial banks that have adopted e-banking between 1999 and 2010 only. However, the impact of e-banking on the bank performance, before and after the bank consolidation, was not examined. Abaenewe et al., on the other hand, considered the impact of e-banking on bank performance, before and after the e-banking adoption. However, their analysis was restricted to four banks only. Our study focuses on all the 24 commercial banks in Nigeria and, therefore, addresses this gap.

3. RESEARCH MODEL AND HYPOTHESIS

The research model, portraying the impact of e-banking on bank performance, is shown in Figure 1 below. Aduda and Kingoo (2012) reported that e-banking has made banking transactions easier by bringing services closer to its customers, thereby increasing the performance of the banking industry. The following hypothesis is, therefore, postulated:

H1 : E-banking has a positive and significant relationship with bank performance.

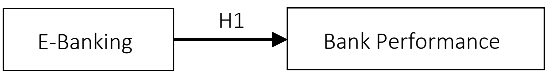

Fig. 1. Research model

Following Aduda and Kingoo (2012), e-banking will be measured by the expenditure made by the banks on information and communication technology (ICT) investments (in millions NGN), number of debits cards issued to customers, and number of ATMs installed by the banks. Fanawopo (2006) argued that the Nigerian debit card transactions rose by 93% between January, 2005 and March, 2006 over previous years owing to aggressive role out initiatives by Nigerian banks powered by the Internet. The number of ATM transactions had increased from NGN1,065,972 in 2004 (pre-consolidation) to NGN14,448,615 from January, 2005 to March 2006 (post-consolidation). This is a raise of 92.6% in respect to the previous years (Olatokun & Igbinedion, 2009).

The bank performance will be measured by ROA (Abaenewe et al., 2013; Aduda & Kingoo, 2012; Oyewole et al., 2013), ROE (Abaenewe et al., 2013; Oyewole et al., 2013), and NIM (Oyewole et al., 2013). The ROA, ROE, and NIM will be computed using the following formula:

$$\text{ROA} \quad : \quad \frac{\text{Net income after tax}}{\text{Total assets}}$$

$$\text{ROE} \quad : \quad \frac{\text{Net income after tax}}{\text{Total equity capital}}$$

$$\text{NIM} \quad : \quad \frac{\text{Net interest income}}{\text{Total assets}}$$

The impact of e-banking on bank performance will be assessed on two specified periods: pre-consolidation (i.e., before the e-banking adoption) and post-consolidation (i.e., after the e-banking adoption). For the pre-consolidation period, the study will cover the periods of 2000 to 2004. The post consolidation period covers the periods of 2005 to 2009. During the pre-consolidation period, most of the commercial banks in Nigeria did not adopt e-banking system due the unavailability of IT. Many banks started to use the e-banking system after the bank consolidation (Fasan, 2007; Ogbuji et al., 2012).

4. RESEARCH METHOD

Secondary data will be used in this study. Secondary data refers to information gathered from existing, available resources (Sekaran, 2003). Specifically, the data will be collected from the published annual reports of the Nigerian banks. The population comprises of 21 commercial banks in Nigeria. Hence, the unit of analysis will be an organization.

Since the objective of the study is to examine whether the use of e-banking has significantly improved the performance of the banks in Nigeria (in terms of the ROA, ROE, and NIM), before and after the e-banking adoption, the data will, therefore, be grouped into two: pre and post adoption of e-banking.

The SPSS software (version 22) will be used to carry out the analysis. The analysis includes frequency analysis of demographics of the banks, standard deviations, and mean differences (before and after the e-banking adoption) between banks.

5. CONCLUSION

The study examines the impact of e-banking on the performance of the Nigerian banking sector. It is argued that majority of the business sectors, including banks, have taken advantage of using IT to enhance their business operations. The use of IT has led Nigerian banks to e-banking, and this e-banking has revolutionised the entire banking industry by scaling borders and bringing about new opportunities. Nowadays, most of the banks have website on the Internet in order to extend their services globally to provide executive services, attain their customers 24/7, and promote quality of service delivery. To achieve the research objective, the data of this study will be gathered by analysing the financial statement of the 21 commercial banks in Nigeria where information, such as ROA, ROE, and NIM, will be gathered.

This study is limited to the impact of e-banking on the performance of the Nigerian banks only. Hence, the generalization of the study's finding to the other population should be made with caution.

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