

LINKING BUSINESS TRANSFORMATION CONCEPTUALIZATION TO PERFORMANCE THEORY AND IMPLICATIONS FOR COMMERCIAL BANK IN NIGERIA

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Abstract

This study robustly establishes the conceptual nexus of business transformation conceptualizations and performance heuristics in service oriented banking sector organizational context. The Central Bank's liberalization of banking industry policy in Nigeria and the resultant rise in competition among the financial institutions in Nigerian financial market has brought to fore the need for creation of innovative financial assets, or products, through business transformation that would maintain current customers and attract new ones. Business transformation in the banking sectors involves the development of new products and services or production process that lead to efficient and effective operations. Commercial bank transformation is a process of radically altering the commercial bank's strategic decision including fundamental changes in structures, process and organizational behavior. Such transformation involves what is called second order or gamma change involving discontinuous shifts in strategy, structure, process and culture of commercial banks. On the bases of Performance Theory, the conceptual findings of this study will assist banking industry to achieve its cashless policy by addressing the gaps in electronic banking adoption in Nigeria. The study recommends that future studies should focus on primary and secondary empirical data-driven modeling of the mechanism linking business transformation to performance in banking sector organization in Nigeria.

Keyword: *Business Transformation, Performance, Commercial Bank Policy. Nigeria*

Introduction

The basic principle of present emerging economy is achievement of high economic growth. In achieving that objective, the banking sector plays an important role in Nigeria. In recent past, it was possible for banks to satisfy their customers and to meet their own performance targets without the need to develop any new products to enhance service delivery due to the fact that account holders and banks were few, with the low volume of transactions, and lack of competition in the banking industry (Salah, Nymatul, & Mamunur, 2015). The liberalization of banking industry by the Central Bank of Nigeria, and the resultant rise in competition among the banking financial institutions in the Nigerian financial market has brought to the fore the need for the creation of innovative financial assets or products through business transformation that would maintain current customers and attract new ones. Business transformation in the banking sectors involves the development of new products and services or production process that lead to efficient and effective operations (Ejike, 2019). Business transformation enhance entrance of new or improved products or a processes which reduces the operational cost of rendering existing banking services (Nofie, 2011; Ejike, 2019)

Traditionally the banking industry has conducted its businesses with consumers through face-to-face interactions. However, as of late, banks have increased their use of digital platforms as supplementary channels to branch offices in order to offer their products and services to consumers (Capgemini, & Efma, 2016). These supplementary channels allow banks to offer more personalized service anytime and anywhere more effectively (Deutsche Bank, 2015). The idea is that by using more digitalized platforms, the customers' involvement will increase and, therefore, create a more loyal customer base (Ravi, 2001). This increase in involvement among customers allow the banks to operate more effectively and more cost-efficiently since customers are able to perform their transactions through the bank's digital channels, such as the internet bank (Ravi, 2001). Also there has been an increase in the various channels through which people can access financial services (Adewale & Afolabi, 2013). These technologies increase market competition, globalization, economic changes and dynamic consumer buying behaviour. (Njeri, 2014). Nigeria with over two hundred million people traditionally has brick and mortar for their financial services such as fund transfers, cash deposits, withdrawals etc. but this is no longer sustainable. Banks have transformed and continuously evolve their processes and service delivery in response to ever changing and sophisticated customer needs and taste. However, technology played a critical role in designing, implementing and maintaining many of organizations' business processes. (Eleje, Okoh, & Okoye, 2018).

Although branch-based transactions are still popular in Nigeria, banks have shoot up their service touch points with websites equipped with capabilities for account

opening, checking of balances, funds transfers, loan application etc. Banks are not only early users of internet technology, but also drivers of the technological revolution (Kondabagil, 2007). Rather than having endless documents, a digital approach that is quicker, easier and paperless could be adopted in addition to other methods used to validate information rather than having to keep asking customers for copies of identity cards and utility bill (Bastid, Hawes & Chitra, 2016). The customer service units of these commercial banks in Nigeria still require copies of these valid identity cards (international passport, drivers' license, national identity cards and voters' card) before any account opening or update despite the fact that these customer service units have access to the validation portals. In South Africa, two large banks have started a digital national ID programme that helps to facilitate the whole Know-your-customer (KYC) process. Once customers have obtained their digital ID, this automatically produces a KYC authentication that enables digital account opening and other similar activities. (Bastid, Hawes & Chitra, 2016).

Therefore, the pace of digital developments and the fact that the banking industry is becoming more digital oriented has opened the way for new competitors to establish themselves in the financial services market (Capgemini & Efma, 2016). For years, banks were protected by the industry's high entry barriers. However, the development of digital technologies has lowered the entry barriers for more innovative businesses to capture parts of the incumbent banks' value chain (Accenture 2015a; Deutsche Bank 2015). This has made it possible for nonfinancial competitors to establish themselves in the industry by offering more niche and customized financial services and products (Capgemini, & Efma, 2016). Due to the increase in digital solutions in the banking industry, the industry is witnessing an increase in mobility among customers between banks (Ndubisi, 2007). The digital transformation within the industry has also affected the switching costs for customers that are able to choose from both non-financial and financial businesses in order to maximize their value (Ndubisi, 2007). This has sparked a change in traditional power balance between the bank and customer, as customers have taken the driver's seat and are able to put pressure on the banks to modernize their infrastructure, financial products, and services (EY, 2010; Peppard, 2000). This allows the customers to have bargaining power over their banks since there is a wide choice of products and services available to them (Finansinspektionen, 2016; Ravi., 2001).

Performance is dynamic; requiring judgment and interpretation and it may be illustrated by using a causal model that describes how current actions may affect future results. To define the concept of performance, it is necessary to know its elements characteristic to each area of responsibility. To report an organization's performance level, it is necessary to be able to quantify the results. Ion and Criveanu (2016) believe that the performance of an organizational system is a complex relationship involving seven performance criteria that must be followed: effectiveness, efficiency, quality, productivity, quality of work, innovation and profitability. Performance is closely

related to the achievement of the criteria listed above, which can be regarded as performance objectives. Accordingly, it cannot be established a precise definition of performance because it is dependent on the seven criteria of performance, that cannot be clearly defined. In the research of performance in business, the definition of performance has led Folan (2017) to highlight three priorities or objectives of governance of performance: First, performance should be analyzed by each entity within the limits of the environment in which they decide to operate. For example, a company's performance needs to be analyzed in the markets in which it operates and not those that are not relevant to its operations. Second, performance is always linked to one or several objectives set by the entity whose performance is analyzed. Therefore, a company measures its performance against objectives and targets established and accepted internally rather than on those used by external bodies. Third, performance is reduced to the relevant and recognizable features. According to Will, (2019) financial performance of a banking system is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. The term is also used as a general measure of a firm's overall financial health over a given period.

Current Emerging Issues

Banks in Nigeria have been generally slow in adopting new and modern innovative ways of improving service delivery to their customers, and three reasons may be attributable to their lackadaisical attitude toward the development of new financial innovations. First, the payback period for the initial capital outlay may be longer and unacceptable to management and shareholders, second, these innovations may not have a positive correlation with financial performance in terms of efficiency and profitability and third, the innovations may, nevertheless have their peculiar problems like computer and internet frauds, frequent breakdowns of the system and lack of personnel with requisite skill and commitment, which the banks needed in order to satisfy their customers, stay in business and effectively compete (Ejike, 2019) With the on-going transformation in our society, consumer behaviour is changing and consumers expect banking services at anytime and anywhere (Becket, 2000). The changes in consumer behaviour is especially noticeable in the banking sector as banks now have to keep up with the fast-changing preferences of the consumers to keep them satisfied in order to enhance the customer relationship. If they fail to keep up with the new preferences, then customers will become unsatisfied and perhaps look elsewhere (Storbacka & Lehtinen, 2012). Studies have shown that almost a quarter of customers are planning on changing banks in the near future, which is an indication that banks are not keeping up with the changing preferences (Accenture, 2015b). While the transformation process is affecting consumers, the banks can also use new technological innovations to meet the new demands of consumers. It is possible for the bank to react quickly to noticeable changes in consumer behaviour by incorporating digital solutions into the customer relationship management, but this in turn will also affect the bank's performance (Gronroos, 2004).

Commercial banks in Nigeria have embraced electronic banking which is a paradigm shift in delivery of financial services. What is not clear is how these transformations affect the financial performance of commercial banks in Nigeria. No doubt technology has transformed the way financial services are delivered especially in the area of cost reduction, ease of doing business, convenience, speed and quality of service delivery. Whether these channels have led to high profitability for commercial banks or not is the subject of this study. There is still significant gap between the top five banks and the bottom five banks across all key performance variables. Whether these technological transformations can significantly improve the financial performance of the bottom five commercial banks in Nigeria is still unknown. Despite the potential benefits of e-banking, similar studies conducted in Ethiopia and in Nigeria showed that electronic banking has no significant effect on performance of commercial banks (Girma, 2016; Okonkwo, Obinozie & Echekeba, 2015; Oko, 2019) while some other studies established that e-banking significantly impacted on the financial performance of banks (Hassan, Mamman & Farouk, 2013; Abaenewe, Ogbolu & Ndugbe, 2013; Vekya, 2017, Rashid, 2018, Ilo, Ani & Chioke). This study explored the conceptual link between business transformation conceptualization and theoretical bases of performance of commercial banks in Nigeria.

Conceptual Assumptions

The general assumption of this study is to conceptualize business transformation relationship with performance of commercial banks in Nigeria. However, the specific assumption is to identify and ranked the level of business transformation indicators of commercial bank and relate it to performance heuristics in Nigeria

Business Transformation Conceptualization

Transformational change takes place when there are fundamental and comprehensive changes in structure, processes and behavior that have dramatic effect on the ways in which the organization functions (Armstrong, 2012). Cummins and Worley (2005) define organizational transformation as a process of radically altering the organization's strategic decision including fundamental changes in structures, process and behaviour. Transformation involves what is called "second order" or "gamma" change involving discontinuous shifts in strategy, structure, process and culture. The term organizational transformation is found in some of the early organizational change literature referring most often to the vastness of a change such as mega change or changing the center or core of an organization (Rhodes & Scheeres, 2004). Business

transformation is an opportunity to define a bold ambition that goes beyond incremental change. It is an opportunity to rethink your business and operating models to deliver superior value. It involves strategic decisions that affect where you will grow, how your organization operates and what kinds of performance improvements one can expect (Anderson, Bowman, Kinzler, Kovacevich & Pocharski 2016). In a world of unprecedented disruption and market turbulence, transformation today revolves around the need to generate new values to unlock new opportunities, drive new growth and deliver new efficiencies (Kotter, 2007).

Automated Teller Machine (ATM).

Adewoye (2013) defined automated teller machine (ATM) as an innovative customer delivery service tool that offers diversified services such as cash withdrawals, funds transfer, payment of bills, etc. It is one of the alternative delivery channels (ADC) that enable customers, bank staff and agents to access banking services through technology solutions. ADCs expand the reach of financial services beyond the traditional branches. The researcher maintained that the use of ATMs as customer service delivery strategy has enabled bank customers to transact banking business using a coded ATM card, wherever an ATM facility is located and can access their accounts at any hour of the day. Automated Teller Machine (ATM), also known as automated banking machine (ABM) is a computerized telecommunications device that provides the clients of a financial institution with access to financial transactions in a public space without the need for a cashier, human clerk or bank teller. ATMs identify customers via either a magnetic or chip-based card, with authentication occurring after the customer inputs a PIN number. It is imperative to know that all ATMs are connected to interbank networks to enable customer access machines that do not directly belong to their bank. The ATMs are connected to a host or ATM controller using a modem and a leased line. More so, all the ATM machines are globally interconnected with each other and with the financial institutions through the global ATM network such as Euro Pay, MasterCard, American Express, Discover, JCB, Union Pay and Visa. These networks are responsible for routing, or switching the transactions to the issuing banks (Koblanck, IFC, 2018, Monyoncho, 2015, Jegede, 2013, Abdullai & Nyaoga, 2017). The first ATM went live in Barclays Bank in London in the year 1967 (Veerubhotla, 2019) but the ATM penetration in Nigeria is still very low compared with other countries while Brazil had 120.6 ATM's per 100,000 adults, Thailand 77.7 and South Africa 59.6 and Nigeria had only 11.8 (EFI Access to financial services in Nigeria 2010 survey). As at June 2017, Nigeria had 17,712 numbers of ATM's for over 29.24 million ATM cards, in the hands of over 2.3 million bank customers (NIBSS, 2018). Change in behaviour is either by incentive or sanction or both. One expects the Central Bank of Nigeria to provide needed policy direction to encourage banks deploy more ATMs and insist that all cash transactions should be via ATM while the illiterate citizens can make use of

agency banking closest to them. The bank's personnel should be focused on advisory purposes rather than transactions (Bastid, Hawes & Chitra, 2016).

Nwakoby, Sidi and Abomeh(2018) in their view stated that Automated Teller Machine (ATM) is a combination of a computer terminals, record keeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a plastic card containing a Personal Identification Number (PIN). The ATM work for 24 hrs. The bank monitors and loads cash when it is out of cash. Apart from serving cash withdrawal purposes, the same ATM can also accept deposits. ATMs are a cost-efficient way of yielding higher productivity as they achieve higher productivity per period of time than human Tellers; it saves customer's time in terms of service delivery as an alternative to queuing in bank halls. Njoroge and Mugambi (2018) maintained that ATM is a form of non-branch bank that offers similar cash services just like a typical bank branch. It could be found in banks and all around the city depending on the economic viability. Simply put, ATM is a "bank". It offers services with limited human involvement. It can accept and pay cash as a teller and can also check your account balance just like a customer service officer. It extends the same standard of service from one customer to another. The machine allows consumers carry out banking transactions beyond banking hours (Aduda & Kingoo, 2012).

Hossain, Irin, Islam and Saha (2013) in their report noted that ATMs often provide the best possible exchange rate for foreign travelers and are heavily used for this purpose as well. Customers can access their bank accounts in order to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cell phone credit. If the currency being withdrawn from the ATM is different from that which the bank account is denominated in (e.g. Withdrawing Japanese Yen from a bank account containing US Dollars), the money will be converted at a wholesale exchange rate. Most ATMs are customer friendly but have certain charges associated with transactions carried on them. Some ATMs impose a surcharge, or usage fee, on consumer who are not member of their institution or on transactions at remote locations. ATMs must disclose the existence of a surcharge on the terminal screen or on a sign next to the screen (Ekwueme, Egbunike, & Okoye, 2011).

Technological transformation in commercial banks in Nigeria today seems to be short term aimed to solve short -medium term challenges and has failed to recognize the fact that transformation of today may be totally unrecognized in a few decades to come especially in a world of big data, artificial intelligence, cloud technology, internet of things etc. The first Bit coin ATM was launched in Canada in November, 2013 and till date there is no trace of such in Nigeria. ATM, though plays an important role in today's business transformation but how prepared are these banks to use ATM as cash recycling machine, data analytic, interactive teller machines (Veerubhotla, 2019). Nigeria with a population of over two million and second largest economy in Africa should take the lead in biometric advancement in ATM security, facial and voice

recognition, talking ATM for visually impaired customers. Monyoncho (2015) advised that recent ATM innovations offer financial institutions the opportunity to transform the ATM from a cash dispenser to a customer relationship management tool, helping to enhance loyalty among all customers. The Nigerian banks should consider possibility of using the ATMs as revenue collecting machines, and by extension could be used for voting and census purposes. In the next century, it will likely be a different game for mortar and bricks type of banking business. How many Nigerians have visited MTN, Globacom, Airtel, Uber's, Konga, Jumia's, AliExpress, Facebook and Twitter offices in the past one or couple of years. Commercial banks must strategically position for these inevitable transformation to survive the competition.

Figure 1 ADC Ecosystem



Source: www.ifc.org/financialinclusionafrica

Transformation is not a one-off thing. Today we have ITM, interactive teller machines. ITMs are built on the functionality of ATMs while adding additional transaction capability. ITMs allow customers to speak with an employee located in a remote location. This face-to-face, real-time conversation occurs over video chat displayed on the ITM screen.

The basic components of an ATM, such as the receipt printer and card reader, all carry over to ITMs. However, ITMs usually include additional features such as:

- A video camera and telephone for conducting conversations with a teller
- A note dispenser for distributing different denominations of notes
- An ID scanner for verifying the customer's identity
- A signature pad

ITMs first appeared at the beginning of the 2010s, with more than 400 NCR machines deployed by 2014. As of 2018, ITMs composed less than 10 percent of installed ATMs and ITMs. However, more and more financial institutions are considering ITMs as a supplement to, or replacement for, their ATM fleet.

(<https://www.qualitydatasystems.com/atm-or-itm-which-is-right-for-your-institution>)

Mobile Banking

Mobile banking also known as cell phone banking or M-banking or mobile application is the use of mobile terminals such as cell phones and personal digital assistants (PDA) to access banking networks via wireless application protocol (WAP). Through mobile banking, users can access banking services such as account management, information inquiry, money transfer and bill payment. (Luarn & Lin, 2005 cited in Zhou, Lu & Wang, 2010.). This covers both transactional and non-transactional services, such as viewing financial information on a bank customer's mobile phone (Koblanck, 2014). Mobile Banking means a financial transaction conducted by logging on to a bank's website using a cell phone. Mobile banking services are often differentiated as "push" or "pull". Pull is when a customer explicitly requests a service or information from the bank while push occurs when a bank sends an unsolicited alert to a customer. Several banks in Nigeria have launched the mobile banking services that enable customers to carry out simple transactions based on Short Message Services (SMS) technology with customer's mobile phones serving as the terminals. Such transactions include account balance enquiries, funds transfers between customer's own accounts and to other account with the same bank, transaction tracking and third party payments, such as bill payments, cheque book request and balance confirmation (Worku 2016, Aduda & Kingoo, 2012, Njoroge 2018). These services could be accessed even beyond normal banking hours (Dzaja, 2007 cited in Mukhongo, Maokomba, Musiega, 2014). The security controls used are PIN code and pass code identification. Mobile banking services have a very exciting potential within Nigeria, given the low

infrastructural requirements and a rapidly increasing mobile phone penetration. Furthermore, increased service quality on mobile banking facilities can enhance more effective mobile banking service product and can help them to achieve higher levels of customer satisfaction. (Adewoye, 2013)

Mobile banking offers millions of people a potential solution in emerging markets that have access to a cell phone, yet remain excluded from the financial mainstream. It can make basic financial services more accessible by minimizing time and distance to the nearest retail bank branches (CGAP, 2006) as well as reducing the bank's own overheads and transaction-related costs. Mobile banking presents an opportunity for financial institutions to extend banking services to new customers thereby increasing their market share (Lee, Lee, & Kim, 2007 cited in Njoroje, 2018).

Nigeria is estimated to have more than one hundred and forty-eight (148) million mobile telephone subscribers and at least ninety-two (92) million of them have access to internet data services on their devices (KPMG, 2017). As most people now own mobile phones, banks have also introduced mobile banking to cater for customers who are always on the move. The banks have introduced life style products like flight booking, buying movie and event tickets. They have provided service like ATM locator, card less withdrawals on their mobile application (Aduda & Kingoo, 2012). Mobile banking refers to provision and availability of banking services with the help of mobile telecommunication devices. Mobile banking has transformed from a niche service for the technologically elite to a mass-market service demanded by all customer segments (Johnston, Bercum & Piscini, 2010). There are nine mobile network operators (MNOs) in Nigeria while MTN, Globacom and Airtel are the market leaders with a combined market share of approximately 85% payment processing handled by four companies: Inter switch, value card, cams and eTransact (Central Bank of Nigeria, 2010). Nigeria as at December 2017, has recorded a total volume of transaction N122.66 billion in 4,508,860 number of mobile payment transactions (Central Bank of Nigeria, 2018).

Several authors have further identified the benefits of mobile phone banking in terms of ubiquity coverage, flexibility, interactivity, and with greater accessibility. Mobile phone banking service provides convenience and promptness to customers along with cost savings (Njogu, 2012, Adewoye, 2013). They offer convenience to customers and provide banking services well beyond the traditional service period. It therefore encourages a cashless society (Adewoye, 2013).

Mobile banking is expected to improve banks service delivery in a form of transactional convenience, saving of time, quick transaction alert and cost saving. The rapid advancement in technologies and ease of use, coupled with the falling prices of devices, present the mobile phone as an appropriate and adaptable tool to bridge the digital divide. Cell phones have not yet achieved these levels of quality, but they do offer "anywhere" convenience, a disruptive innovation. Mobile banking reasonably reduces the cost of rendering services to customers. - For service providers, mobile

banking offers the next surest way to achieve growth by offering suitable services to attract new customers or retain old ones. Mobile banking helps alert customers on trends happening in their accounts in order to minimize fraud. - It also encourages them and wishes customers well on special occasions like birthdays that customers value a lot. By use of mobile banking applicators and devices for users, banks and other financial institutions have a favorable condition to generate profits, control costs, generate new business, retain market share and attract customers (Kato, Otuya, Owunza, & Nato, 2014, Njogu, 2012). Mobile banking provides a number of advantages for both banks and customers. Mobile banking removes geographical limitation to customers and therefore bringing convenience. There is no time limitation i.e. banking maybe performed throughout the day and in any place. Mobile banking also provides efficient cash management and security of cash (Njoroge 2018). Mobile banking gives banks the potential to expand beyond their geographical footprint as well as ability to cross-sell and up-sell products to existing customers and this is popular among younger market segments, however, early adopters of mobile banking may still gain a competitive advantage in attracting new customers (Johnston, Bercum & Piscini, 2010)

Point of Sales (POS) Terminals

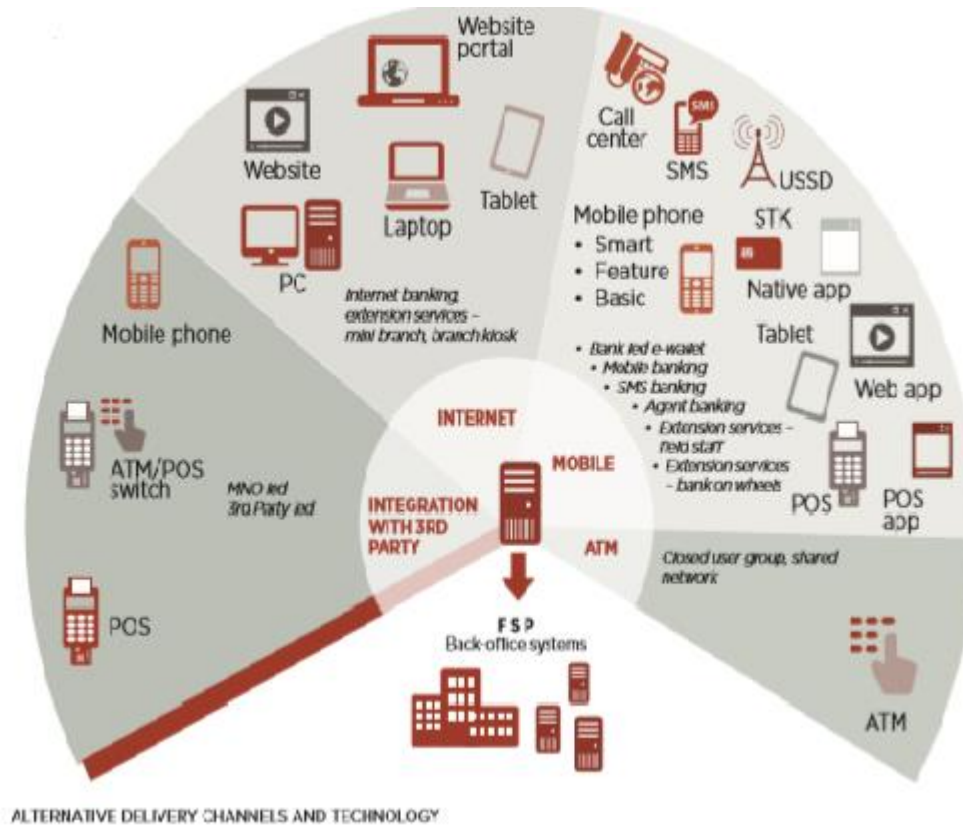
A Point Of Sale terminal is a portable device that allows customers with cards (such as ATM cards) to carry out cashless transactions. It is an electronic banking channel that allows customers to make payment for goods and services to clients known as merchants irrespective of the merchant's bank and the customer's bank (Okechi, 2013). POS also sometimes referred to as point of purchase (POP) or checkout or terminals (Shittu, 2010) is a device deployed to merchants for use by cardholders (Ekwueme, Egbunike, & Okoye, 2011). The terminal is a machine that has a display screen, a barcode scanner, and a card reader (InterSwitch Ltd, 2011 cited in Ibanichuka & Oko, 2019). It is the point at which a customer makes a payment to the merchant in exchange for goods or after provision of a service and also one of the e-payment devices introduced in the quest for cash less economy (Okeke, Nwatu & Ezeh 2017). Mobile Point of Sale (mPOS) is mobile application designed to mimic the same functionality offered by a traditional physical POS device. mPOS applications typically interact with a card reader and/or printer to replicate the full functionality of the traditional POS device (Koblanck, 2014)

In addition to financial transactions, the customer can also carry out transactions such as account balance enquiry, printing of mini bank statement with the use of a credit card or a debit card. Electronic cash register versions of these terminals have been in operation for several years, maintaining records on sales, inventories and accounts receivable. This channel is mostly preferred by customers and merchants who prefer cashless transactions and with POS, the customer's account is immediately debited at the physical point while the monetary value is credited to the merchant's bank account in a later date once the transaction is approved as indicated in the receipt (Okechi, 2013,

Worku, 2016), Dieterich, 2014). POS adoption as at June, 2019 in Nigeria has shown that volume of transactions in these sectors- Fuel Station, Retail, and Fast Food sectors grew by 97%, 63%, and 45% respectively. Unfortunately, Taraba, Zamfara, Yobe, Sokoto and Kebbi were ranked bottom 5 in POS adoption (Retrieved from https://nibss-plc.com.ng/data_image_central/2019/08/pos-mid-year-2019-analysis-min.pdf August, 2019.) Merchants, unlike card holders, need not have an account with the bank that deployed the terminals (Ekwueme, Egbunike, & Okoye, 2011). As electronic POS systems proliferate, their use will probably replace many of the paper transactions accomplished through cash payments, cheque and credit transactions (Worku, 2016).

Curiously, transactions done through POS are not entirely free (Ugwueze & Nwezeaku, 2016). Effective May, 2017 in Nigeria, these merchants- wholesale, hotels, food, churches, Non-Governmental organizations, fuel station, airline operators, travel agents were exempted from charges associated with POS transactions.(Central Bank of Nigeria, 2017) while others are charged 0.75% on the volume of transaction capped at N2,000. The terminals were initially deployed at no cost to the merchants but today, some merchants were asked to pay for the terminals. As at June 2019, the total registered POS in Nigeria was 295,883 terminals, 238,801 terminals were connected and while 161,336 terminals were active. More than 45% terminals deployed in Nigeria as at June 2019 were inactive. This has forced banks to retrieve and redeploy these inactive terminals to new merchants with good prospect (CBN,2019)

Figure 2: Technology options for each type of delivery channel



(Source: www.ifc.org/financialinclusionafrica)

Internet Banking

Internet banking is where a customer can access his or her bank account via the Internet using personal computer (PC) or mobile phone and web-browser (Arunachalam & Sivasubramanian, 2007, Atanassov, Nanda & Seru, 2007 cited in Ngando, 2017, Egland, Neolle, Furst, & Robertson, 2008 cited in Chaqmakhchi, 2018, Kim, Widdows & Yilmazer, 2006). More so, Internet banking refers to the use of the internet as a delivery channel for banking services, which includes every single banking service, for example, balance enquiry, statement of account requisition, account transfers, bill payment (Frust, Lang, & Nolle, 2000) without going to a bank (Mukherjee & Nath, 2003). Recently, some banks provide a personal computer (PC) in their banking solely for internet banking, a version of self-service especially for customers that do not have PCs. Internet banking also known as virtual, cyber, net, interactive, online or web banking is an outgrowth of PC banking (Egland, Neolle, Furst, & Robertson, 2008).

Internet banking is the act of conducting financial intermediation on the internet (Kim, Widdows & Yilmazer, 2006). Ongkasuwan and Tantichattanon (2002) further defined Internet banking service as banking service that allows customers to access and perform financial transactions on their bank accounts from their web enabled

computers with Internet connection to banks' web sites any time they wish. It is that process whereby the customer is able to access, control and use his/her account over the Internet (Kim, Widdows & Yilmazer, 2006). Just like any other e-banking facility, internet banking is fast and convenient (Gerlach, 2000). Internet banking is a platform that enables bank customers to perform transactions such as transfer and payments, access of latest balance, statement viewing, account detail viewing, customization, print, downloading of statements and obtaining of a history statement on all accounts linked to the bank's customer (Moa, Obote & Yoweri, 2017, Eglan, Neolle, Furst, & Robertson, 2008, Kiragu, 2017, Atanassov, Nanda & Seru, 2007,). Internet banking enables banks to remain competitive, save costs, enhance mass customization, marketing and communication activities, maintain and attract new consumers and explore development of non-core business (Kim, Widdows & Yilmazer, 2006, Ongkasuwan, & Tantichattanon, 2002).

The switch from traditional banking to online banking system may be as a result of the perceived usefulness, perceived ease of use or user-friendly interface, security and privacy provided by online banking (Qureshi, Zafar & Khan, 2008). In addition, other factors facilitating the adoption of internet banking in Nigeria include the level of awareness or attention, the accessibility to computers and Internet, convenience, costs, level of Internet experience, types of services provided, (for example e-mail, file transfer, news, online financial services, shopping and multimedia services), attitude and perception, delivery time, experience with the Internet and support concerning internet banking This may also be enhanced by the bank's reputation in terms of size, awareness and trust (Ongkasuwan & Tantichattanon 2002, Jaruwachirathanakul & Fink, 2005, Al-Somali , Gholami & Clegg ,2008, Gao & Owolabi, 2008). Furthermore, development of Internet banking is to reduce costs compared to traditional distributional channels and also getting the branch network leaner by decreasing number of branches (Pikkarainen, Pikkarainen, Karjaluoto & Pahnla, 2004). Despite the fact that the internet has an ever-growing importance in the banking sector because of the advantages it brings to both the entities and their customers, not all the financial entities that have adopted e-banking have been successful, often because of an inadequate website design and other factors as well (Ortega , Martinez, & De Hoyos, 2007).

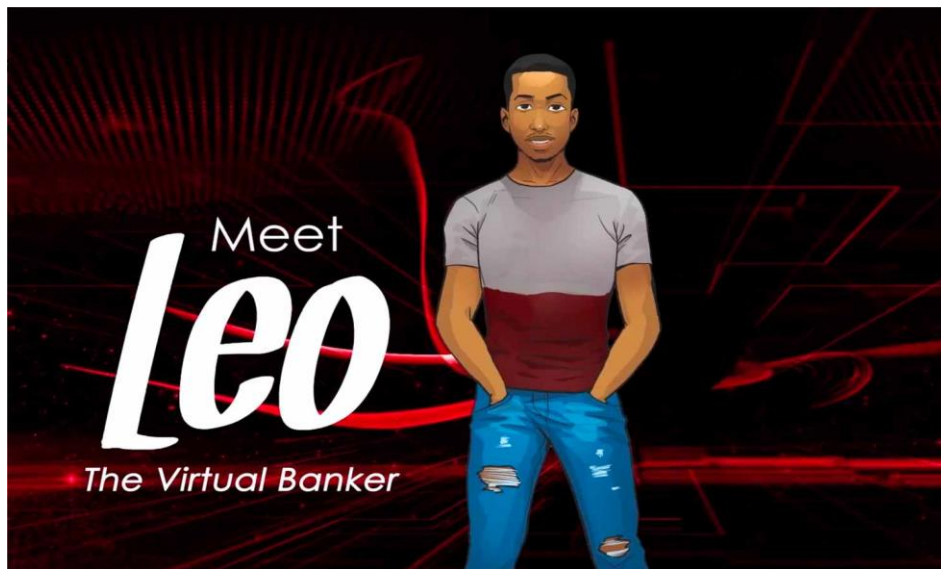
Chat Banking

The first of its kind was launched in July 2018 by ABSA in South Africa and thereafter, other Nigerian banks - United Bank for Africa (UBA), Guaranty Trust Bank (GTB), First Bank of Nigeria (FBN), Access Bank/Diamond bank and Zenith Bank followed suit. UBA PLC chat banking is called Leo; Zenith bank is qwerty banking while Diamond bank was Ada (<https://techpoint.africa/2018/09/18/whatsapp-banking-nigeria/>). Chat banking is a web chat service, enabling users to have an

interactive conversation online. It allows for online chat capability that's quick, that is available 24 hours and that has a virtual banker that has the power to enable financial transactions on your account. The increase in the number of users accessing digital banking channels shows a change in attitude from customers diverting from traditional banking. It shows that digital banking is offering customers the right experience and choice through convenience and usefulness, and hence making customers accept it (Mbama, 2018). You could access this service on Facebook messenger or WhatsApp (Retrieved August 28, 2019 from <https://www.ubagroup.com/nigeria/personal-banking/digital-banking/chat-with-leo/>).

Banks are making significant savings through efficiency and improving their financial performance with customers moving to digital banking, as these customers are not getting served in branches. Customers can access all the banking products and services electronically through the 'Live Banking', in addition to new innovative services such as SMS and e-mail alerts. Customers are able to open new deposit accounts over the internet, as well as they have the option of 24-hour support by bank representatives. A customer can open account, send money, buy airtime, check account balance, pay bills and generate mini statement through this artificial intelligent personality (Giordani, 2012). Many customers think digital banking is convenient, can be accessed 24 hours, hassle free and comfortable for them. These are qualities that branches do not give them (Mbama, 2018).

Figure 3: UBA Chat Banking Leo



(Source: <https://www.ubagroup.com/nigeria/personal-banking/digital-banking/chat-with-leo/>)

Unstructured Supplementary Service Data (USSD)

Unstructured Supplementary Service Data (USSD) is a protocol used by Global System for Mobile (GSM) mobile devices to communicate with the service provider's computers/network. This channel is supported by all GSM handsets, enabling an interactive session consisting of a two-way exchange of messages based on a defined application menu (Koblanck, 2014). USSD is also a GSM communication technology that is used to send text between a mobile phone and an application program in the network. USSD is similar to Short Messaging Service (SMS) but, unlike SMS, USSD transactions occur during the session only while SMS, message can be sent to a mobile phone and stored for several days (Retrieved August 31, 2019 from <https://searchnetworking.techtarget.com/definition/USSD>). All USSD requests, notifications and responses (except responses to notifications) contain the USSD string, an alphabet/numeric indicators and language indicators)

Figure 4: UBA PLC USSD String



The image shows a mobile phone screen displaying a USSD menu. The menu items are listed as follows:

1. Airtime-Self
2. Airtime-Others
3. Transfer-UBA
4. Transfer-Other Banks
5. Transfer-UBA Prepaid
6. Check Balance
7. Increase Limit
8. Next

Below the list is a text input field with a green cursor. At the bottom of the screen are two buttons: "CANCEL" and "SEND".

Source UBA PLC USSD: Dial *919# on a mobile phone

Organizational Performance

Organization performance is the measure of how efficient and effective an organization is. It shows how well it achieves corporate objectives (Gilbert, Stoner & Freeman, 2005: 9). Efficiency means doing things right and effectiveness means doing the right thing (Drucker, 2008). Organizational performance encompasses three specific areas of firm outcomes:

- ✓ Financial performance (profit, return on assets, return on investment).
- ✓ Product market performance (sales, market share)

- ✓ Shareholder return (total shareholder return, economic added (Richard, 2009). Other studies suggested that organization performance is one of important construct in management research (Richard, 2009).

Firms use both financial and non-financial variables to measure their performance (MCKierman & Morris, 2005). A combination of financial and non-financial information is essential to give a more balanced impression of the overall performance of the organization (Hogue & James, 2000; Laitinen, 2002, all cited in Akroush, Al-Mohammad, Zuriekat & Abu-Lail, 2011). Financial performance has been studied under different yardsticks of performance such as size, profitability, financing pattern, economic efficiency, operational efficiency, asset quality, diversification and cost of operations (DeYoung 2001).

Return on Investment

Return on investment (ROI) is performance measure used to evaluate the efficiency of investment. Simply put, it is a profitability ratio that calculates the profits of an investment as a percentage of the original cost. It shows investors how efficiently each naira invested producing a profit. It is one of most commonly used approaches for evaluating the financial consequences of business investments, decisions, or actions (Ibanichuka & Oko, 2019). In addition, ROI shows the degree to which a commercial bank's revenues exceed its cost. ROI is an indicator of how profitable a commercial bank's is in relation to its total cost of investment. It gives an idea as to how efficient the management uses assets to generate earnings. The return on investment formula is calculated as below: $ROI = \text{Profit after Tax} / \text{Total Assets} * 100$. Nwude (2012) states that if the ROI so obtained is higher than the company cost of capital prior to the investment, and no better investment opportunities exist for those funds, it may make sense to purchase the equipment. Good investment decision requires a forecast of future events that is either explicit or implicit. Since no one has a perfect picture of the future outcome, as most of the important facts are uncertain, it is important to reduce the degree of risk and uncertainty associated with such an investment to the barest minimum with the help of ROI before commitment of fund is made (Ibanichuka & Oko, 2019)

Return on Asset (ROA)

Return on Asset (ROA) is a financial ratio used to measure the degree to which the assets have been used to generate profits (Heikal, Khaddafi & Ummah, 2014). ROA is the profitability ratio used to measure the relationship of profit earned to the investment in assets required to earn that profit. The ROA is the baseline that can be

used to measure the profit contribution required from new investments (Siminica, Circiumaru & Simion, 2012).

The return on assets (ROA) has also been repeatedly used in a number of studies as a measure of bank performance (Aduda & Kingoo, 2012; Boateng & Molla, 2006). ROA measures the ability of an organization's management to generate income by utilizing company assets (Oshikoya, 2007). In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Njoroge & Mugambi, 2018, Oshikoya, 2007 cited in Chaqmakchi, 2018).

Wong (2004) stated that a higher ROA shows that the company is more efficient in using its resources. Return on Assets (ROA) which is the proportion of total bank's net profit as percentage of Total Assets (Dzombo, Kilika & Maingi, 2017) is calculated as net profit before tax divided by total assets (Worku, 2016). It is the most common profitability ratio of performance measure used by banks in order to evaluate performance comparing the efficiency of a number of different investments (Worku, 2016). ROA as a key performance metric quickly focuses management attention on the assets required to run the business (Dzombo, Kilika & Maingi, 2017)

Return on Equity (ROE)

Return on equity (ROE) is another indicator of a company's profitability calculated by the financial return on the amount invested by the shareholders (Lee & Kim, 2013 cited in Yang, Li, Ma & Chen, 2018). In other words, it is a measure of how much profit a company generates with the money shareholders have invested (Dzombo, Kilika & Maingi, 2017). ROE provides an indication of how much equity holders will get in return for investing their capital resources in the bank (Jean-Azam, 2006). This is one of the traditional ratios to measure banks' profitability, and can be calculated by Net Income/Shareholder's Equity (Lee, & Kim, 2013; Rose, 1999 cited in Worku, 2016).

Non-Interest Income

Non-interest income is bank and creditor income derived primarily from fees including deposit and transaction fees, insufficient funds (NSF) fees, annual fees, monthly account service charges, inactivity fees, check and deposit slip fees, and so on. Credit card issuers also charge penalty fees, including late fees and over-the-limit fees. Institutions charge fees that generate non-interest income as a way of increasing revenue and ensuring liquidity in the event of increased default rates (Retrieved from <https://www.investopedia.com/terms/n/noninterest-income.asp>). Non-interest

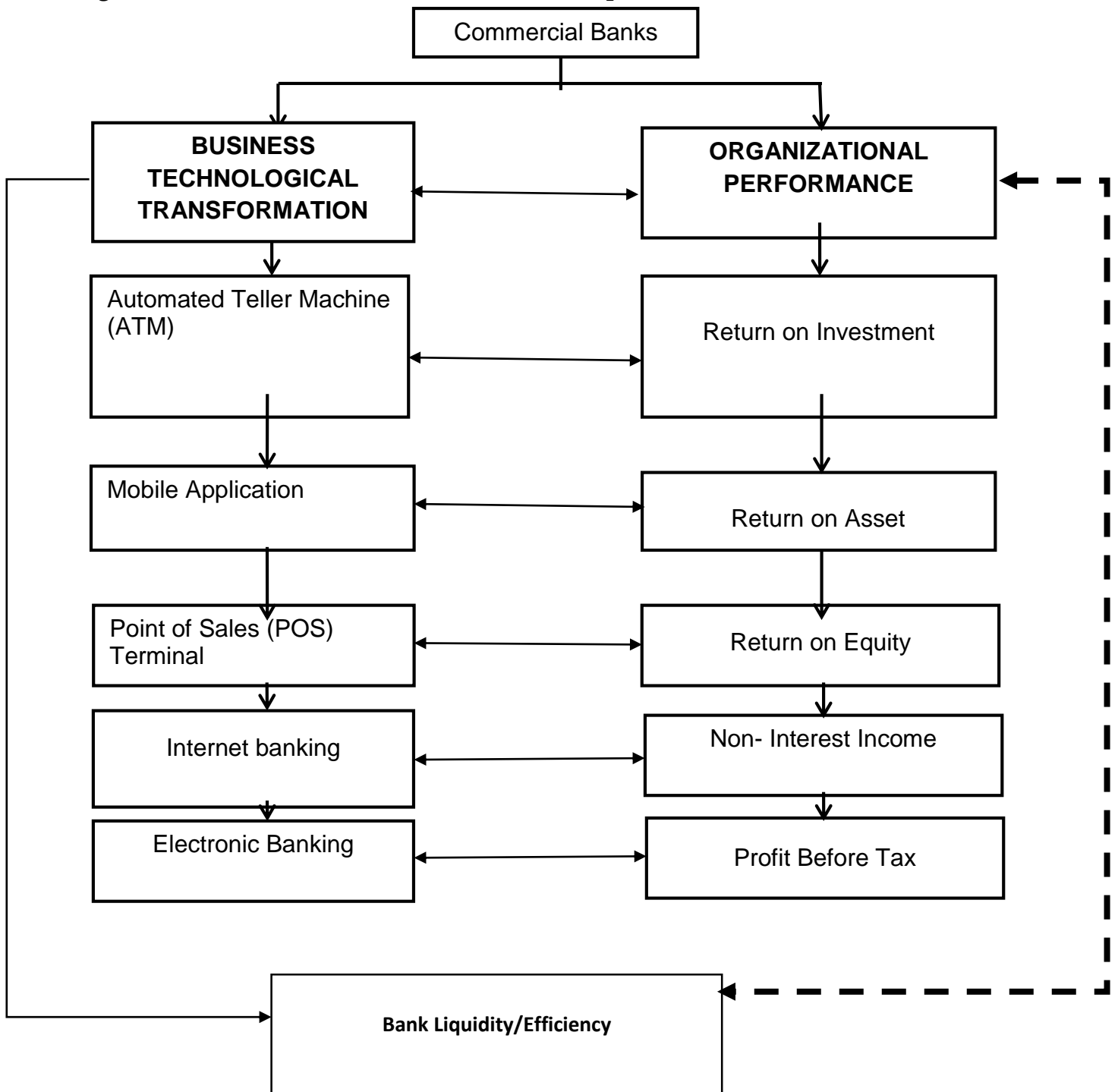
income also increases operational leverage, since expanding into non-interest income may imply a rise in fixed costs. On the other hand, non-interest income is usually more volatile than interest income, because it is more difficult for borrowers to switch their lending relationship due to information costs (DeYoung, & Roland, 2001). Non-interest income includes income from trading and securitization, investment banking and advisory fees, brokerage commissions, venture capital, fiduciary services, and gains on non-hedging derivatives. These activities are different from the traditional deposit-taking and lending function of banks. In non-interest income activities, banks are competing with other capital market intermediaries such as hedge funds, mutual funds, investment banks, insurance companies, and private equity funds, none of which have federal deposit insurance. Non-interest income is categorized into two sub-groups, trading income and other non-interest income (Brunnermeier, Dong & Palia, 2019)

Concept of Bank Liquidity

Liquidity as a financial term simply means the amount of capital that is available for investment. The study further argues, today's capital as used in this context is usually credit and not cash (Ibe, 2013). As Marozva (2015) emphasized, even though the subject area of bank liquidity is not a new phenomenon, however, there has not been a universally accepted definition. Adler (2012) argues that lack of universally agreed definition for bank liquidity is because of its derivation from different economic standpoints. Bank liquidity is a financial term which means the amount of capital that is readily available to banks for investment (Adebayo, 2011). On the other hand, Koranteng (2015) posits that liquidity of a bank is the readily funds available to banks and their ability to readily fulfill their growing requirements. This was corroborated by Ibe (2013) who puts it as the ability of banks to constantly meet cash, cheque, withdrawal commitments and loan demands of the their customers while meeting their basic requirement for bank reserves. In the view of this, Amengor (2010) in relation to commercial banks puts liquidity as the ability of banks to finance its contractual obligations such as lending, investment and customers' withdrawal of deposits and maturity of liabilities at the course of banks' activities. Marozva (2015) explains the term bank liquidity by categorizing it into two; market liquidity and funding liquidity. He defines market liquidity in the context of how easy a bank's security can be traded and on the other hand, the funding liquidity as how easy a bank can obtain funding to trade its security. He adds that both market and funding liquidity are complementary since bank performance (funding liquidity) is dependent on the ease of trading security. In view of Amengor's (2010), Alshatti (2015) argues that liquidity is the ability of banks to meet the financial needs of their increased assets and meeting liabilities as and when they fall due without the occurrence of unforeseen losses. From the definitions outlined

above, it can be noted that the scopes of liquidity is based on the timing required in converting assets of banks into monetary asset or cash; the certainty with regard to the conversion and the value realized from the asset and the banks' ability to meet obligations without incurring losses. Accordingly, Koranteng (2015) noted that banks' liquidity is dependent on its liquid assets; the bank's ability to acquire cash through deposits and finally, its ability to reinvest as and when needed.

Figure 5: A Business Transformation Conceptual Framework



Source: Researcher's Conceptualization

Theoretical Framework

This conceptual paper is anchored on three theories that are linked to technological transformation in an organization.

Transaction Cost Innovation Theory

Another theory chosen for this study is transaction cost innovation Theory (TCI) propounded by Hicks and Niehans in 1983. Financial innovations and financial services advancement can be triggered by the decline in transaction cost. He argued that decline in transaction costs is the governing principle of financial innovation. He further contended that transaction costs are reduced by financial innovation hence increase in firm's financial performance. This theory guides us while navigating the conceptual link among study variables and it is relevant for this study because the use of financial innovations such as automated teller machine and other electronic banking that are some of the independent variables for this study can substantially reduce a firm's transaction costs hence improving the firm performance measure like market return on investment. Furthermore, use of IT related innovations provides efficient management and coordination of the firm. IT related financial innovations provides off -site access to the organizations internal database and other relevant sources of information hence reduction in the transaction cost (Muthoka, Oluoch, & Muiruri, 2018)

Agency banking theory.

The third objective is anchored on Agency banking Theory (Jensen, & Meckling, 1976). The theory was developed by Michael Jensen and management theorist William Meckling in 1976 (Njoroge & Mugambi, 2018) and specifically designed to capture the essence of the principal-agent relationship. Agency Theory deals with the frequent

situation when one person (the agent) acts on behalf of another person (the principal), for example between managers and their subordinates, between shareholders and management, and between management and the wider public (Schaltegger & Wagner, 2006). The commercial banks in Nigeria have adopted agency banking as part of their financial inclusion strategies with massive deployment of point of sale terminal. A Point Of Sale terminal is a portable device that allows customers with cards (such as ATM cards) to carry out cashless transactions. It is an electronic banking channel that allows customers to make payment for goods and services to clients known as merchants irrespective of the merchant's bank and the customer's bank (Okechi et al., 2013). The application of this theory to business technological transformation in commercial banks will help banks to understand and apply various variables that would facilitate deployment of terminals for the benefit of the merchants and the commercial banks. It is imperative for the financial institutions to see these agents/merchants as their branch extensions and support them to improve return on equity.

Innovation Diffusion Theory

This theory was developed by Rogers (1962). The theory explains how, why, and at what rate new ideas and technology spread through cultures. Rogers (1962) explains that critical factors that determine the adoption of an innovation at the general level are the following: relative advantage, compatibility, complexity, trainability and 'observability'. Relative advantage is the extent to which technology offers improvements over currently available tools and compatibility is the consistency with social practices and norms among its users. Complexity is ease of use or learning while trainability is the opportunity to try an innovation before committing to use it. 'Observability' is the extent to which the technology's outputs and its gains are clear to see. (Dillon 1996 cited in Monyoncho, 2015). An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. There is a wide gap in many fields, between what is known and what is actually put into use. Many innovations require a lengthy period, often of some years, from the time when they become available to the time when they are widely adopted. Therefore, a common problem for many individuals and organizations is how to speed up the rate of diffusion of an innovation (Rogers 2003). Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion, therefore, is a special type of communication in which the messages are concerned with a new idea. It is this newness of the idea in the message content of communication that gives diffusion its special character. In other words, diffusion is a kind of social change, defined as the process by which alteration occurs in the structure and function of a social system. Hence, diffuse an innovation into a system is a challenge (Worku, 2016). Previous study concluded that relative advantage of an innovation is positively related to the rate of adoption. When a user perceives relative

advantage or usefulness of a new technology over an old one, they tend to adopt it. In the context of ICT adoption, benefits such as immediate, convenience and affordability to customers have been reported. Thus, it is assumed that, when customers perceive distinct advantages offered by ICT, they are more likely to adopt it (Roberts & Amit, 2003 cited in Okoye, Omankhanlen, Okoh & Isibor, 2018). The five objective (to explore the contribution of e-banking (ATM, Mobile App, POS, Internet banking) to Profit before tax (PBT) of commercial banks in Nigeria is anchored on this theory. This theory has shown that technological innovation is communicated through a particular channel over time among the members of a social system. From the concept of innovation diffusion, customers and organization adopts technology to perform activities that are advantageous (Roger, 1983). Therefore most banks have adopted ICT to improve their performance. This improvement is achieved through the development of electronic banking products that are modeled after customer's needs. This will enable customers to assess their account anywhere as far they are connected to the internet or have access to their mobile devices. Rogers was convinced that the adoption of innovation follows a universal process of social change. It originated in communication to explain how, overtime, or product gain momentum and spread or diffuses through a specific population or social system. (Iluno, Farouk & Saheed, 2018).

Table 1: Theoretical Frameworks of Business Transformation (Technology) and Performance

| | Theoretical Framework | Supporting Literature |
|---|---|------------------------------------|
| 1 | A modified form of Solow's (1957) neoclassical growth model | Okonkwo, Obinozie & Echekeba, 2015 |
| 2 | Shareholders theory, Opportunity theory, technology theory, agency theory, peel theory, routine activity theory | Hassan, Mamman & Farouk, 2013 |
| 3 | Saving and Consumption theory | Abubakar, 2014 |
| 4 | Technology Acceptance Model, the Innovation Diffusion Theory and the theory of planned behavior | Vekya, 2017 |

- 5 Porter (1985) "competitive advantage grows. Some analysis applied modified forms of Solow's (1957) neoclassical growth model Muhammad, Gatawa & Kebbi, 2013
- 6 Task technology fit and Unified theory of acceptance and usage of technology , Theory of planned behaviour Zhou, Lu & Wang, 2010
- 7 Diffusion of Innovation and The Theory of Reasoned Action Abdullai & Nyaoga, 2017
- 8 Standard microeconomic theory Gündoğdu & Taşkin, 2017
- 9 Innovation theory Ilo, Ani,& Chioke, 2014
- 10 Disruptive Innovation Theory Ndunga , Njati & Rukangu ,2016
- 11 Theory of Planned Behaviour , Technology Acceptance Model Mwangi , 2014
- 12 Contingency theory Nwakoby, Sidi & Abomeh, 2018
- 13 Technology Acceptance Theory, Theory of Planned Behavior, The Theory of Reasoned Action Ogare, 2013

- | | | |
|----|---|--|
| 14 | Transaction cost theory (Williamson, 1975); Value chain analysis (Porter, 1985); and Resource-based view | Binuyo & Aregbeshola, 2014 |
| 15 | Extended Technology Acceptance Model | Okeke, Nwatu & Ezeh, 2017 |
| 16 | Financial Intermediation Theory and Contemporary Banking Theory, The Theory of the Firm , Branchless Banking Theories | Dzombo, Kilika & Maingi, 2017 |
| 17 | Customer Satisfaction theory | Jham , 2016 |
| 18 | Technology acceptance model (TAM), diffusion of innovations theory and resource based theory | Monyoncho, 2015 |
| 19 | Contemporary banking theory | Aduda & Kingoo, 2012 |
| 20 | Technology Acceptance Model | Mbama, 2018 |
| 21 | The Innovation Diffusion Theory (IDT) | Okoye, Omarkhanlen , Okoh & Isibor, 2018 |
| 22 | Technology acceptance model (TAM) , Innovation diffusion theory , the theory of financial intermediation and the institutional theory | Chaqmakhchi, 2018 |

| | | |
|----|---|------------------------------------|
| 23 | Transaction Cost Innovation Theory | Muthoka, Oluoch, Muiruri , 2018 |
| 24 | Innovation diffusion theory, Task Technology Fit (TTF) Theory, Theory of planned behavior ,Technology acceptance model | Worku, 2016 |
| 25 | Innovation Diffusion Theory and Technology Acceptance Model | Iluno, Farouk & Saheed, 2018 |
| 26 | Task technology fit model (TTF) | Oira & Kibati, 2016 |
| 27 | Transaction Cost Theory , Technology Acceptance Theory , Unified Theory of Acceptance and Use of Technology (UTAUT) | Ogutu & Fatoki, 2019 |
| 28 | Agency theory, stakeholder's theory and contingency theory | Njoroge & Mugambi , 2018 |
| 29 | Modernization theory | Jegade, 2014 |

Source: Researcher's Conceptualization

Current Empirical Research Stream and Emerging Issues around the Globe

Taiwo and Agwu (2017) assessed the role of e-banking on operational efficiency of banks in Nigeria. This study was designed to ascertain bank's staff perceptions on the role of electronic banking on organizational performance. Primary data were collected with the aid of the questionnaire which was administered personally to staff of these branches, who are the key developers, administrators and users of this service. A total of 100 questionnaires were administered using the simple random sampling technique to 25 respondents each from the four selected banks' branches. Secondary data were also used in the study but collected from the Central Bank of Nigeria's electronic banking guideline, financial statement of the selected banks, Nigeria Deposit Insurance Corporation (NDIC) annual reports and symposium papers. The data were analyzed using the Pearson correlation method to test the relationship between electronic banking adoption and operational efficiency of deposit money banks in Nigeria. It was observed that banks' operational efficiency in Nigeria since the adoption of electronic banking has improved compared to the era of traditional banking. The study also noted that most of the banks' customers have no understanding of e-banking channels despite the fact that most of these banks e-banking channels are effective and efficient. It was therefore recommended that measures should not just be put in place to encourage customers to use these channels but should be inclusive of how to educate them on how they are operated. However, Matthew and Ibikunle (2014) conducted a study on the impacts of Information and communication technology (ICT) on banks in Nigeria. ICT help banks improve the efficiency and effectiveness of services offered to customers, and enhances business processes, managerial decision making, and workgroup collaborations, which strengthens their competitive positions in rapidly changing and emerging economies. This paper considers the impacts and trends of ICTs on the banking industry of the 21st century. Four (4) parameters, namely: productivity, market structure, Innovation and value chain were used for benchmarking. Case studies of the IT platform employed by two Nigerian banks were included for a more informed inference. The study recommended that banks should employ ICT in such a way that meets the desired qualities of flexibility and scalability, providing them with a competitive advantage to stay ahead and provide new and improved products and services to delight their customers.

Oginni, Abba, El-maude and Arikpo (2013) examined the impact of electronic banking on banks' performance in Nigeria. Data set employed in this study included annual financial statement of eight commercial banks (over period 1999-2010), macroeconomic variables as obtained from the publications of the Central Bank of Nigeria Statistical Bulletin, World Economic Outlook (2012), Fact book published by the Nigerian Stock Exchange, World Bank Data Sheet and National Bureau of Statistics. Records on the date of adoption of e-banking by the sample banks were obtained through Delphi technique whereby questionnaires were sent to the headquarters of

each of the sample banks via their e-mail. Data were analyzed with multiple regressions. Result from pooled OLS estimations indicated that e-banking begins to contribute positively to bank performance in terms of ROA and NIM with a time lag of two years while a negative impact was observed in the first year of adoption. The study recommended that decisions regarding investments in electronic banking should be rational so as to justify cost and revenue implication on bank performance. Hassan, Mamman and Farouk (2013) investigated the effect of electronic banking products on performance of Nigerian listed deposit money banks. Data were collected from secondary source through the annual report and accounts of the sampled Banks and insider information from the employees working in the selected banks. The study adopted the Ex-post factor and correlational designs. The study revealed that adoption of electronic banking products (e-mobile and ATM transactions) has strongly and significantly impacted on the performance of Nigerian banks while on the other hand, it showed that e-direct and SMS alert have not significantly impacted on the performance of the bank. This study recommended that more awareness should be created as to the numerous advantages of using the E-Mobile services by the bank's customers as their increase usage will bring about increase in the performance of the banks. Similarly, Dauda and Akingbade (2011) examined customer's and employee's responses to technology innovation, and their effects on the performance of the Nigerian banks. Data were collected using copies of questionnaires and Pearson correlation co-efficient was used to analyze the hypotheses. The findings revealed that technological innovation influenced banks employee's performance, customer's satisfaction and improvement in banks profitability. The study recommended effective management of technological innovation for improved employees performance, customers' satisfaction, sustainable profit, increased return on investment, returns on equity to promote competitiveness in the Nigerian banking industry. Abubakar (2014) conducted a study on the effects of electronic banking on growth of deposit money banks in Nigeria. Data were collected from secondary sources through annual reports and statistical bulletin of Central Bank of Nigeria. A total deposit was regressed on internet and mobile banking, while a total asset was regressed on internet and mobile banking using multiple regression technique. The Ex-post factor research design was adopted for the study. The study showed that positive relationships exist between mobile banking and total deposits, and between internet banking and total asset while on the other hand, no significant relationships between internet banking and total deposits, and between mobile banking and total asset. The study recommended that banks that want to improve their deposit growth performance must offer numerous products/services through mobile phones in an effective, efficient and cost effective manner. They must also make mobile banking application all mobile phones enabled so that those customers who cannot afford Java enabled mobile phones can also use the product.

Babatunde and Salawudeen (2017) conducted a study on the impact of electronic banking in Nigerian banking industry and financial institutions. The study used both the primary and secondary data to elicit information from the forty (40) respondents.

The primary data were collected through the use of questionnaire, while the secondary data were obtained from the publications of the Central Bank of Nigeria Electronic Banking Guideline, Annual Reports of the CBN and Access Bank Plc. Simple frequency counts, percentages and the Chi-square were used in the data analysis. The findings showed that 22 credit officers or 62.9% of respondents agreed with the opinion that electronic banking system had made banking transactions easier, 11 credit officers representing 31.45% strongly agree, while 2 of them representing 5.7% were undecided and none of the respondents is either disagree or strongly disagree. The study therefore recommended that the Nigerian banking sector must be focused in terms of their needs and using the right technology to achieve goals, rather than acquiring technology of internet banking because other banks have it.

Abaenewe, Ogbulu and Ndugbu, 2013 investigated the profitability performance of Nigerian banks following the full adoption of electronic banking. System Judgmental sampling method was adopted by utilizing data collected from four Nigerian banks. These four banks were the only banks in Nigeria that have consistently retained their brand names and remain quoted in the Nigerian Stock Exchange since 1997. The study utilizes secondary data extracted from the Nigerian Stock Exchange Fact Books and published annual reports of four sampled banks. The researcher tested the pre- and post-adoption of e-banking performance difference between means using a standard statistical technique for independent sample at 5 percent level of significance for performance factors such as ROE and ROA. With the data collected, we tested the pre- and post-adoption of e-banking performance. This study therefore recommended that the banking industry should adjust to full and effective deployment of information technology due to its sophistication since the technology is irreversible with relative perceived advantage. Also those Nigerian banks should be able to accept the level of risk that they can cope with in electronic banking system, measurable to the bank's overall strategic and business plans. There is inherent risk for not adopting e-banking, banks should provide adequate security both physical and electronically, to check the incidence of hacking by fraudsters. Network hackers dupe banks of billions of naira at a strike and could liquidate banks. Also, Salami and Ogbeta (2014) carried out a study on E-Commerce and Banking Performance in Nigeria. Data were collected using copies of questionnaire. The study covered some selected banks (GTB PLC, UBA PLC, and First Bank PLC) in Asaba Delta State Nigeria. The study target population comprised customers being serviced by the banks in Asaba, 60 is the sample size of the three selected banks. The data collected were analyzed using chi-square. The study recommended that government and banks should establish adequate regulatory framework that will ensure customers protection and security of investment.

Oluwagbemi, Abah and Achimugu (2011) conducted a research on the Impact of Information Technology (IT) in Nigeria's Banking Industry. This paper presented the current trend in the application of IT in the banking industries in Nigeria and gives an insight into how quality banking has been enhanced via IT. The paper further reveals that the deployment of IT facilities in the Nigerian Banking industry has brought about fundamental changes in the content and quality of banking business in the country. This analysis and clarification of how Nigerian Banks have used IT to reengineer their operations is detailed through literature review and observation. Three categories of variables that relate to the use and implementation of information technology devices were considered in this paper. These include the nature and degree of adoption of innovative technologies; degree of utilization of the identified technologies; and the impact of the adoption of IT devices on the bank operations. Again, Ugwueze and Nwezeaku (2016) investigated the relationship between electronic banking and the performance of Nigerian commercial banks. The data for this study were monthly series of savings deposit, time deposits, demand deposit, and monthly value of POS transactions in Nigeria. The series were obtained from Central Bank of Nigeria (CBN) statistical bulletin for various years. The sample period under consideration for the variables ranged from January 2009 to December 2013. Engle-Granger Co-integration model was used to analyze data. The results showed that POS was not co-integrated with both the savings and time deposits but was co-integrated with demand deposits. The study recommended that the monetary authorities and commercial banks should embark on an all-inclusive enlightenment campaign for the banking public on the benefits, convenience and importance of adopting e-banking channels in completing their transactions

Vekya (2017) carried a study to determine the impact of electronic banking on the profitability of commercial banks in Kenya. The study adopted a descriptive research design and the population of the research consists of the 43 commercial banks in operations as at 31st 2014 in Kenya. The study used secondary data obtained from Central Bank of Kenya publications and Statistical Package for Social Sciences (SPSS) was used in the analysis of data. Descriptive statistics produced trends, means and percentages while inferential statistics produced regression and correlation results which showed the causal relationship among the variables. Pearson's correlation was used to test for association between the variables of the study. The results from multiple regression indicated that there was a positive significant relationship between ATM transactions and bank profitability. In addition, the study found a positive significant relationship between POS transactions and bank profitability. The study recommended an income diversification strategy. Commercial banks should consider their charges on ATM withdrawals. Commercial banks should also consider partnering with each other so that the clients can carry out transactions at any ATM regardless of the bank. It also recommended that commercial banks should inform their clients on the retail outlets at which they can use their cards to pay for goods and services.

Omotoso, Dada, Adelowo and Siyanbola (2012) examined the roles of ICT on service delivery in a Nigeria banking firm. The study adopted a survey technique using structured questionnaire with 100 respondents randomly selected from Intercontinental Bank Plc., Ile-Ife branches, Nigeria. These respondents were made up of the staff members of the bank and customers. Two sets of structured questionnaire were administered on the respondents with a view to eliciting relevant information for the study. Secondary data were collected from annual reports of the bank, journals, magazines and internet information. The results were analyzed using descriptive statistics such as frequency tables, percentages and presented in form of charts. The result of the study reveals that ICT had made impacts on the productivity of the bank. The study recommended that banking industries should make huge investments in ICT equipment procurement, installation, training and re-training of members of staff so as to overcome the challenges using diverse means and especially the public-private partnership on security issues and infrastructures and ability to develop indigenous ICT equipment. Moreover, Muhammad, Gatawa and Kebbi (2013) assessed the Impact of Information and Communication Technology on the Nigerian banking industry using eleven selected commercial banks in Nigeria. Secondary data in the form of panels were collected from the banks' annual financial reports and Fact books covering the period 2001 - 2011. The data comprises of net profits, total assets, total equity, ATM machines and e-banking services of the selected commercial banks. A panel-data set was analyzed using the STATA econometric software version 9. The study applied Fixed and Random Effects Models in its analysis. The results from the Hausman test revealed that Random Effects Model was appropriate. The findings of the study indicated that the use of ICT in the banking industry in Nigeria increases return on equity. More so, it found an inverse relationship between additional sustained investment in ICT and efficiency which the study recommends among other thing shifting more emphasis on policies that will boost efficient/proper utilization of ICT equipment rather than additional investments. The study recommended among other things shifting more emphasis on policies that will boost efficient/proper utilization of ICT equipment rather than additional investments

Rashid (2018) explored the relationship between Information Technology (IT) investment and banks' performance. The study population made up of thirty (30) private commercial banks listed on Dhaka Stock Exchange (DSE) and sample size of five (5) banks selected randomly. The study data were collected from the period of 2007-2016 from annual reports. The correlation and regression models were used to measure the relationship between Information Technology (IT) investment and banks' performance. The findings of the study revealed that a positive relationship exists between IT Investment and banks performance. Hence it was recommended that more

thought has to be put towards the investment and use of information and communication technology in banking sector

Abdullai and Nyaoga (2017) conducted a study to determine the effect of Automated Teller Machines (ATM) usage on operational performance of commercial banks in Nakuru County, Kenya. The study population comprised 56 employees of the 28 commercial banks. There were thirty-one (31) commercial banks branches in Nakuru County, Kenya out of which the researcher, through a simple random sampling, chose 28. Data were collected using structured questionnaires. A pilot study was conducted in Eldoret Town, Uashin Gishu County to determine validity of the research instruments and Cronbach's alpha coefficient was employed. The study adopted a correlational-cross-sectional research design. The study established that ATM usage has a positive significant relationship with operational performance. The study recommended that management of commercial banks should invest more in ATMs as it positively influences operational performance. Gündoğdu and Taşkin (2017) analyzed the relationship between financial innovation and the performance of Turkish banking system. The examined the relationship between profitableness of Turkish banking system and online banking, telephone banking and credit cards. Given data available from official sources between first quarter in 2006 and second quarter in 2015, simple regression analysis was used in the study. The results of the regressions showed that only credit card usage had a significant positive impact on ROA, ROE and NIM. The positive impact on ROA and ROE imply that credit card usage increases the profitability and thus the performance of banking system, but the positive impact on NIM showed that banks charge their customers more for their credit card usage. The study recommended that the managers of the banks should employ policies to increase the usage of these distribution channels to decrease their costs and thus increase their performance.

Ilo, Ani and Chioke (2014) investigated the impact of technological innovation on the performance of Nigerian banks based customers' satisfaction and banks employees' performance. The study covers a period of five (5) years (2008-2013). The study carried out in Lagos with 1,912 copies of questionnaire shared to customers, out of which only 1,634 copies of questionnaire were returned. Also 1,458 copies of questionnaire were distributed to banks employees for second hypothesis test, only 1,223 copies of questionnaire were returned for analysis. The data collected were analyzed using Pearson Correlation Statistics that were adopted in Statistical Package for Social Science (SPSS). The first findings showed that positive relationship exists between technology innovation and banks employee's performance and the second findings showed that introduction of ICT improves customer satisfaction and retention. These revealed that there was a significant relationship between technology innovations in service delivery. The study recommended that the Nigerian bank management should improve upon their IT flexibility, by regularly training and retraining their IT personnel with the aim

of being responsive to customers. Banks Chief Executives should invest more on human resource management in practical terms for better banks innovative products for money deposit banks. Foreign and local expert on latest banking technology products should be employed in helping to reposition the bank in a better position for global relevant and competition. Constant training and retraining both home and abroad are necessary for sustainable relevant in global banking industry. There should be reward for workers that have distinguished themselves as a means to motivate, increase their efficiency, and make them more effective in other to bring out more innovation

Ndunga, Njati and Rukangu (2016) conducted a study to determine the influence of technological innovation on organization's performance in Kenya. Data were collected using copies of questionnaire. Descriptive and inferential analyses were employed. The study covered all commercial banks branches in Meru County, Kenya. There were twenty (20) registered commercial banks in Meru. The total population was 60 members of management staff in commercial banks branches operating in Meru town and the study adopted a census sample design. The study recommended that banks can manage their costs better by investing more in technology innovation as opposed to continued investment in brick and motor branches. The internet and mobile channels can process a higher volume of transactions compared to the use of the conventional manual processes. Romdhane (2013) accessed the impact of information technology on the performance of Tunisian banks. The objective was to evaluate the X-efficiency in banks during the period 1998–2009 while identifying, on the one hand, the impact of information technologies introduced by banks on their X-efficiency, and on the other hand, the internal determinants of inefficiency levels in these banks. The copies of questionnaire were distributed to Information System Directors to identify the amounts invested in IT during the period 1998–2009. The researcher adopted the standard Stochastic Frontier Approach on panel data to generate estimates of cost efficiencies. The study was enhanced by a comparison between the results found using the Data Envelopment Analysis (DEA) method and the Stochastic Frontier Analysis (SFA) method to test the soundness of these approaches to efficiency measurement. The empirical findings suggested that the impact of IT investments on Tunisian banks' performance is positive. The analysis of the internal determinants of banks' efficiency levels showed that size and managerial capacity positively and significantly affected the Tunisian banks' cost efficiency, while the share of non-performing loans represented a source of inefficiency. Measuring the impact of various categories of IT investments (hardware, software and IT services) on banks' cost efficiencies suggested that "the Productivity Paradox" did not affect all IT investments. The study recommended that in the interest of Tunisian banks, which wish to improve their productivity and efficiency, to invest more in IT because it plays a major role in improving their cost efficiency. The study further recommended studying the impact of IT on the performance of Tunisian banks before and after the 2008 financial crisis.

Addai, Ameyaw, Ashalley and Quaye (2015) investigated into the impact of electronic banking (e-banking), service delivery on customer satisfaction in Ghana. Data for this study were gathered from both primary and secondary sources. The secondary data were gathered from internet web pages, journals and books. Primary data were gathered through questionnaires. A purposive non-probability sampling technique was utilized in a 150 sample-size selection from e-banking customers of Trust Bank Ghana Limited, Ecobank Ghana Limited and Barclays Bank Ghana Limited (50 from each bank). SPSS Statistics version 21 was used to analyze the primary data. Multiple regression analysis was performed to determine the impact of e-banking, service delivery on satisfaction of customers in the selected banks. A positive correlation between customer satisfaction and e-banking availability, reliability and convenience was established. It is therefore recommended that banks provide customers with uninterrupted, reliable and convenient e-banking services in order to satisfy and retain customers

Mwangi (2014) investigated the returns on assets of commercial banks following the adoption of electronic banking in Kenya. The objective of the research was to measure and compare the effect of e-banking technologies on the profitability of domestic banks; how much the provision of these services affected the service quality of the banks and hence their efficiency and to assess the impact of changing from the traditional banking to the electronic banking on the banks. Data from financial statements between year 2009 and 2013 were used for the analysis. The study used correlation and regression statistics to analyze with the help of SPSS. This study provided evidence that electronic banking has advanced returns on the assets of Kenya commercial banks though not significantly based on the hypotheses tested. This study therefore recommended that the banking industry should adjust to total and effective deployment of information technology due to its sophistication since the technology is irreversible with relative perceived advantage. Kenyan banks should be able to accept the level of risk that they can cope with in electronic banking system, measurable to the bank's overall strategic and business plans

Dandago and Usman (2012) conducted a study on the impact of investment in information technology on the return on assets of selected banks in Nigeria for the period 2000-2010, The study employed secondary data generated from annual reports and accounts of selected banks quoted in the Nigerian Stock Exchange (NSE). The data were analyzed using multivariate regression analysis; that is the Statistical Package for Social Sciences (SPSS). It was found that MIS surrogates which were software, hardware investment and number of ATMs had a significant impact on financial performance of Nigeria banks as measured by return on assets (ROA). This study recommended that banks should increase investment in software, hardware and ATMs which will enhance their management information system and profitability. Nwakoby, Sidi and Abomeh (2018) examined the impact of information and communication technology on the performance of deposit money banks in Nigeria between the periods 2006 to 2015. Data

used for this study were collected basically from secondary sources such as Nigeria Bureau of statistics CBN annual report and Statistical Bulletin, for the quarters of 2006 – 2015. The log-linear regression model was used to test the impact of various forms of information and communication technology on the banks return on equity (ROE). The computation of the result was done using the econometric computer software package, e-view version 8.0. The result showed that the adoption of various forms of information and communication technology has greatly influenced the quality of banking operations, performance and has specifically increased banks return on equity. The study recommended that investments in information and communication technology should form an important component in the overall strategy of banking operation, as these will make Nigerian banks to be more efficient, profitable, and competitive.

Ogare (2013) investigated the effect of electronic banking on the financial performance of commercial banks in Kenya. Secondary data were obtained from the Central Bank of Kenya and the profit after tax from audited financial statements of commercial banks for the period 2008 to 2012. The study used both descriptive and inferential statistics in analyzing the data. Analysis was done with the help of Statistical Package for Social Scientists (SPSS). The study results showed that electronic banking had a moderate influence on profitability of commercial banks in Kenya. The study recommended to the management of those banks that are slow in innovation adoption, to move in and adopt various innovations in their operations in order to shore up their profitability.

Bonsu (2015) examined e-banking's contribution to profitability and service delivery of Fidelity Bank Ghana Limited. In selecting the respondents, both purposive and stratified random samplings were used. The purposive sampling was adopted in selecting managers who are in charge of electronic banking. The stratified random sampling was also adopted to select respondents from all the departments in the bank. Both primary and secondary data were used with questionnaires as the main instrument used for the collection of primary data. Data was analyzed using inferential analysis including mean, standard deviation, charts, tables and percentages. The study found out that e-banking products made delivery of banking services very convenient with less queuing unlike the traditional branch banking. The study recommended that the Government of Ghana should provide the necessary measures in place in terms of legislations and infrastructure to create the enabling environment for electronic banking to thrive in Ghana which will intend help to generate revenue for the country through the charges paid as VAT by the banks

Binuyo and Aregbeshola (2014) investigated the impact of Information and Communication Technology Cost Efficiency (ICTCE) on the performance of banks information and communication technology investment (ICTINV), capital employed. 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 Bankscope – World

banking information source. Data analysis was carried out in a dynamic panel environment using the orthogonal transformation approach. The robustness of the results was affirmed by residual cointegration 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 recommended that banks should lay more emphasis on policies that will enhance proper utilization of existing ICT equipment rather than additional investments.

Aliyu and Tasmin (2012) examined the impact of Information and Communication Technology on banks performance and customer service delivery. This paper also makes of a critical review of peer reviewed, scholarly and organizational literature regarding the impact of ICT on banks' performance to examine if banks have successfully achieved effective customer's service delivery, by providing high level of customer service through online delivery channel, besides operating cost minimization and revenue maximization. The study recommended that the new Libyan Government should consider the shortcomings and problems within the banking system environment, with the need to focus on more banking reforms that are essential to accelerate improvement in ICT implementations

Sujud and Hashem (2017) looked into those innovations (mobile banking, debit and credit cards, automated machines (ATM), internet banking, point of sale terminals (PST) and electronic funds transfer) in relation to their influence on profitability and return on assets (ROA) of Lebanese commercial bank. Data were collected through a research questionnaire. The sample of the study consists of senior management employees in commercial banks that work and adopt bank innovations in Lebanon. Statistical analysis was done using the Package of Social Sciences Software (SPSS). The results revealed that there was a significant positive impact of bank innovations on profitability and return on assets of Lebanese commercial banks and significance tests also showed that the impact was statistically significant. The study therefore concluded that bank innovations affect profitability and return on assets (ROA) of commercial banks in Lebanon positively. This study recommended that bank innovations should not only be seen as a process to improve financial performance of banks but should be seen as a continuous process that satisfies both banks and customers.

Dzombo, Kilika and Maingi (2017) evaluated the effect of branchless banking on the financial performance of commercial banks in Kenya. The specific objectives of the study were to analyze the individual effects of agency banking and electronic banking channels on the financial performance of commercial banks in Kenya and the combined effect of both agency and electronic banking on the financial performance of commercial banks in Kenya. The study adopted an exploratory research design. A survey of all the 42 licensed commercial banks in Kenya was done. Both primary and secondary data were used. Data analysis was done using SPSS and STATA statistical software. Data were presented using tables and charts. Study findings indicated that when used in

isolation; both agency and electronic banking had a significant negative effect on the financial performance of commercial banks at 5 percent significance level. However, when agency and electronic banking channels were used together as a multichannel strategy, they had a significant positive effect on bank's financial performance at 5 percent significance level. The study recommended that for positive returns, commercial banks should invest in both agency and electronic banking as a multichannel strategy since these channels are complimentary to each other.

Adewoye (2013) examined the impact of mobile banking on service delivery in the Nigeria commercial banks. The study was carried out in Lagos state with One hundred and forty (140) copies of questionnaires administered and distributed to both senior and junior employees of the selected banks. Thirty five (35) employees each were picked from the four (4) selected banks. One hundred and Twenty five (125) copies of questionnaires were found useful for the purpose of the study representing 83.3% of the total questionnaire distributed. Data collected were analyzed using frequency table, percentage and mean score analysis while the non-parametric statistical test Chi-square was used to test the formulated hypothesis using STATA 10 data analysis package/software. The results of the findings showed that Mobile banking improve banks service delivery in a form of transactional convenience, savings of time, quick transaction alert and save of service cost. The study recommended that banks management should create awareness to inform the public about the benefits derived on the e-banking service products and collaborate among banks. Employees with expertise in hacking should be employed by every bank in other to prevent fraudulent personnel and hackers from manipulating the banks' data and stealing money from the banks accounts.

Moa, Obote and Yoweri (2017) conducted a study to determine the factors that influence consumer adoption of Internet banking service as well as examine the relationship between Internet banking service, customer adoption and customer satisfaction. Major instrument for the data collection was a questionnaire that was designed on a 5-point Likert scale. Descriptive and factor analyses were used before the multiple regression analysis was done. The study established that there was a significantly positive relationship between Internet banking and customer satisfaction. The study recommended that more emphasis and effort be laid on targeting individual clients. In addition, Internet banking service providers ought to look out for indicators of innovative ways of creating awareness about the service through participation in trade organizations, exhibitions as well as adoption of new technologies of Internet banking. Alfred and Dwomoh (2017) investigated customer satisfaction level towards self-service technology (SST) within the Ghanaian banking industry. Specifically, the objectives of the study were to identify customers' attitudes towards Technology Based Self-Service, to measure customers' satisfaction level with Technology based Self-

Service, to establish the SSTQUAL variable that had the most significant impact on the respondents' satisfaction levels towards Technology based Self-Service and finally to establish the challenges customers had with Technology Based Self-Service. This study was a cross sectional research design hence, quantitative methodology was adopted. The study employed simple random sampling to select the study participants. Subsequently, the study used the Krejcie and Morgan (1970) sampling table to determine the sample size for the 7500 population size. Based on the table, the sample size for this study was 365 with a 95% confidence interval and 5% error of margin. The study distributed 365 questionnaires to the undergraduate students of the University of Education-Winneba, Kumasi campus. Data were subsequently analyzed using descriptive statistics such as Mean and Standard deviation. Inferential statistics included Pearson correlation, multiple regression (enter method) were used for the relationship analysis. Findings from the study showed that SSTs that ensured functionality, enjoyment, assurance, design and convenience in its setup or operation had the most significant impact on the respondents' satisfaction levels towards SSTs. It was recommended that banking institutions should try as much as possible to ensure that all its subsequent SSTs that may be introduced to its market segment are able to meet all these requirements in their operations

Akinyele and Olorunleke (2010) conducted a study to establish the relationship between technology and service quality in the banking industry in Nigeria. The research was carried out through a cross sectional survey design and the population of study mainly constituted of customers of Oceanic bank within Lagos metropolis and its environs. The respondents of the study were customers of banks using e-banking services (internet banking, mobile banking and ATM). The sample in this study consisted of 120 respondents who were users of thee-banking services. The data collected were analyzed with the aid of frequency, percentage, means and correlation analysis. It was established that there was a direct relationship between technology and service quality in the banking industry. The findings revealed that secure services were the most important dimension, followed by convenient location of ATM. The study recommended that the banking institutions should use the importance/performance grid as a strategic tool for the development of strategies as it gives a clear pictorial presentation of the factors that are critical for resource allocation.

Asante-Gyabaah, Danquah and Tetteh-Wayoe (2015) assessed the impact of the ATM technology in delivering service quality in the banking industry. The study focused on customers and employees of GCB Bank Ltd in ten (10) branches in Greater Accra Region. The purposive sampling technique was used in selecting 272 customers and staff from these 10 branches in the Greater Accra Region. The sampling size considered was 272 respondents and this included 50 bank employees and 222 customers. The questionnaire was used as the research instrument for data collection. The data were analyzed using Statistical Package for the Social Science (SPSS) computer application. The results of the study generally indicated that, 30% of respondents used

the ATM services once a week while 26.4 % often use the ATM on alternate days and 22.8% use it once a month. A high percentage of 84.8% of respondents asserting that they watch out for the location of the ATM before going to transact means customers who go to the ATM are becoming more security conscious and banks must consider this factor in locating an ATM. The study recommended that banks should develop new user friendly, competitive systems and applications that would enable customers harness the full benefit of the ATM. Furthermore, banks should play a key role not only in developing the infrastructure which are going to make ATM usage convenient to its customers but also provide an incentive that would be convincing enough to customers to continue using the self-service technology. Yang, Li, Ma and Chen (2018) investigated the performance of Chinese banks following the full adoption of e-banking system, particularly in profitability and cost efficiency performance. The bank performance was measured in terms of return on assets (ROA), return on equity (ROE), operating margin (OM), net interest margin (NIM) and efficiency ratio. This study used documentary secondary data including text data (such as reports to shareholders, notices and public records) and non-text materials (such as voice and video recordings). In this research, secondary data were based on the Bloomberg database and financial reports of sample banks that have been released in their annual reports. The data collected cover the period from 2003 to 2013. The data were analyzed using SPSS and Excel from two aspects: banks' profitability and cost efficiency. The study revealed that e-banking could improve the Chinese bank performance in terms of ROA, ROE, and OM. On the contrary, e-banking has a slight impact on Chinese bank performance with respect to NIM and efficiency ratio. The study recommended that banks should make online trading more convenient, securer and less risky for customers. It also recommended that actively promoting e-banking attract more people to know, understand and accept online banking. Cultural and geographical constraints will prevent some people from using e-banking. Hence, banks enhancing the promotion of e-banking could attract more customers

Monyoncho (2015) sought to determine the relationship between E-Banking technologies and financial performance of commercial banks in Kenya. The specific research objectives were to assess the influence of ATMs on the financial performance of commercial banks in Kenya, to establish the effect of debit and credit cards on the financial performance of commercial banks in Kenya, to determine the effect of mobile banking on the financial performance of commercial banks in Kenya and to assess the effect of internet banking on the financial performance of commercial banks in Kenya. The study population included all 44 commercial banks licensed by Central Bank of Kenya. Secondary data for a five year period were collected from financial statements of commercial banks in line with the specific variables of the study. Descriptive statistics (weighted means, standard deviation) was used to summarize the data using SPSS 21. Pearson moment correlation was conducted to establish the linear relationship between study variables. Regression analysis was conducted to establish the nature of the relationship. The study revealed that recent ATM innovations offer financial institutions

the opportunity to transform the ATM from a cash dispenser to a customer relationship management tool, helping to enhance loyalty among all customers. Credit cards are being adopted by the banks so as to increase income, and to reduce credit and liquidity risks. Mobile banking is likely to have major impacts on the profitability of commercial banks as business operations get smoothen and that internet banking offers the convenience of conducting most of the banking transactions at a time that suits the customer.

Aduda and Kingoo (2012) investigated the relationship between e-banking and performance of Kenya banking system. The secondary data were collected from annual report of target banks and Central Bank of Kenya. The study used both descriptive and inferential statistics in analyzing the data. Descriptive statistics such as mean score, frequencies and percentages for each variable were calculated and tabulated using frequency distribution tables, or pie charts and/or bar charts. In order to test the relationship between the variables, the inferential tests including the Pearson Product-Moment Correlation Coefficient and regression analysis were used. The study revealed that e-banking has strong and significant marginal effects on returns on asset in the Kenyan banking industry. Thus, there exists positive relationship between e-banking and bank performance. The study recommended that banks must be focused in terms of their needs and using the right technology to achieve goals, rather than acquiring technology for internet banking because others are doing so. Government participation in ensuring focused telecommunication industry must be visible to reduce or remove avoidable costs of implementing e-commerce and internet banking. Regulatory authorities like Central Bank of Kenya must stipulate standards for the banks to follow to avoid making Kenya Banking Sector a dumping ground for the outdated technological infrastructures

Mbama (2018) carried a study to determine the impact of digital banking services on customer experience and financial performance. The researcher used mixed methods approach, utilizing bank financial reports, interviews and questionnaires to achieve important results. The research adopted Regression, Structural Equation Modeling and Chi-Square analyses in quantitative research, while using Content Analysis in qualitative research. It found that attributes such as perceived value, convenience, functional quality, service quality and digital banking innovation are important in improving customer experience, satisfaction and loyalty, and banks' financial performance. This study recommended that banks should provide effective mobile banking services to satisfy customer wants.

Okoye, Omarkhanlen, Okoh and Isibor (2018) conducted a study to identify the extent to which technology has impacted customer satisfaction in the Nigerian banking sector. The data used for this study were derived from primary sources through the use of questionnaire and oral interview from 120 customers of three deposit money banks

within Ogun and Lagos States of Nigeria. Model estimation was based on the method of analysis of variance (ANOVA) using SPSS. The result showed significant positive impact of all the above service features on customer satisfaction, an indication that electronic-based banking has enhanced customer satisfaction in Nigeria. It is recommended that more service points and user-friendly customer-oriented financial products be provided to support this initiative. Chaqmakhchi (2018) examined the effect of electronic banking on financial performance of commercial banks in Turkey. Panel data collected from 6 of the 9 Turkish privately owned commercial banks in Turkey using data from the third quarter of 2014 to the second half of 2018. Panel regression model estimation was conducted and results from the study showed that an increase in the number of active customers using internet banks and amount of loans given to bank customers have positive effect on bank performance. This study recommended that bank managers should come up with better liquidity management practices which will help to efficiently allocate funds between alternative projects and assets

Worku (2016) examined the roles of e-banking on financial performance of commercial banks in Ethiopia. The study used secondary data and employed purposive sampling technique to select ten banks for the study commercial banks operating in Ethiopia covering the periods from 2013 to 2015. The data were analyzed using random effect panel least square regression with the aid of E-view 8 application and the result showed that numbers of ATM terminals, number of POS terminals and bank market share have positive and significant role on financial performance of commercial banks measured by return on asset. Furthermore, the study shows that increased number of ATM, POS and market share had a positive role on the financial performance of commercial banks with many banking institutions indicating that increased market share allowed a company to achieve greater scale in its operations which generally improved its profitability. This study recommended that for enhanced return on assets commercial banks should create more awareness about e-banking service and timely support for users will cause an increase in e-banking practice in Ethiopia.

Mukhongo, Maokomba and Musiega (2014) sought to establish the effects of alternative banking channels on profitability of commercial banks in Kenya. The data were sourced from the books of accounts of the Co-operative bank of Kenya and questionnaires distributed to staff, customers and bank agents. A multi-stage sampling technique was used to identify the branches and respondents of the questionnaires. The data were analyzed using SPSS statistical tool. The study found out that banks should try to make sure that ABCs' services are designed in the way that customers can easily use them; they are faster which will lead to high subscription rate for previously unbanked segment. This study recommended that commercial banks in Kenya should invest heavily in alternative banking channels such as mobile banking, ATMs banking, agency banking and internet banking as this will lead to improvement in the financial performance of the commercial and that the Kenyan Government through the Central

Bank should come up with policies that create a conducive environment for commercial banks to operate in.

Ocharo and Muturi (2016) conducted a study to establish the relationship between alternative banking methods on the profitability of the banks within Kisii County in Kenya. The specific objective of the study was to establish the extent to which ATM, mobile banking, agency banking and internet banking contribute to the financial performance of banks. The study employed a descriptive research design. The questionnaire was used for data collection and data were analyzed using both qualitative and quantitative methods. The findings revealed that there was significant correlation of 0.81 between alternative banking and the financial performance of the banking industry. The study recommended that for effective ATM usage, the banking industry should continue to safeguard and improve the security features of the customers' information to avoid fraud. Ogutu and Fatoki (2019) examined the effect of electronic banking on financial performance of listed commercial banks in Kenya. The study employed quantitative research design using panel data analysis. The targeted population of the study was the 11 listed commercial banks in Kenya. Secondary data were extracted from Central Bank of Kenya banking supervisory reports and published annual reports of banks. Both descriptive and inferential statistics were used. The study found that there was strong positive relationship between mobile banking, agency banking, ATM banking and online banking and financial performance of listed commercial banks in Kenya. The study recommended that commercial banks should expand their electronic services in a planned and well-structured manner and in a long run, will increase clients' satisfaction and also increase institution profit

Njoroge and Mugambi (2018) investigated the effect of electronic-banking on financial performance in Kenya commercial banks using a case study of Equity Bank Limited in its Nairobi Central Business District branches. The study used primary data, which were collected by a semi-structured questionnaire. A sample size of 100 respondents (employees) of Equity Bank Limited branches in Nairobi central district was selected. Data were analyzed using descriptive statistics and regression analysis. The study used Statistical Package for Social Sciences Version 21.0 to aid in data analysis. The paired t-test, a non-parametric test of differences was used in this study as a test of significance. A regression analysis was applied to establish the effect of electronic-banking on the financial performance of Equity Bank Limited in Nairobi Central Business District. The study found that mobile banking make basic financial services more accessible, reduces the bank's own overheads and transaction- related costs and presents an opportunity for financial institutions to extend banking services to new customers, thereby increasing their market. The study recommended that the banking industry should adjust to full and effective deployment of information technology due to its sophistication since the technology is irreversible with relative perceived advantage

Mapharing and Basuhi (2002) investigated the relationship between e-banking and commercial bank performance in Botswana. A 10-year aggregate quarterly commercial bank data as provided by Bank of Botswana Financial Statistics Reports was used in the study. A multiple regression procedure was used to determine the significance of the relationship between the independent variables (electronic banking indicators) and the profitability measures of return on assets (ROA) and return on equity (ROE) as the dependent variables. The findings were that only CHQ was statistically significant at 0.05% level under both ROA and ROE models with p-values of 0.0002 and 0.0000 respectively. However, the predictive power of ROE was found to be higher than ROA using adjusted r-square and d-statistic. The study recommended that managers should improve on information and communication technology in order to cater for optimal use of electronic banking service in Botswana. Jegede (2014) investigated the effects of ATM on the performance of Nigerian banks. Copies of questionnaire were used to collect data from a convenience sample of 125 employees of five selected banks in Lagos State with interswitch network. Data collected through the questionnaire were analyzed using the Software Package for Social Science (SPSS Version 20.0) and chi-square technique. The result indicated that the deployment of ATMs have averagely improved the performance of Nigerian banks. The study recommended that banks should strive to increase their security layers to subvert the tricks of web scammers, limit the amount which customers may be allowed to withdraw at a time and provide electronic alerts to customers' phone for all transactions carried out on their banks accounts through ATMs

Alzaidi (2018) explored the adaption of artificial intelligence in banking sector of Middle East. The primary data were collected from 200 bank employees across a few selected banks in the region. The data collected were quantitatively analyzed using SPSS21.0 software and descriptive analysis was used to present the demographic profiling of the respondents that were involved in the survey. They concluded that the use of Artificial intelligence in banking sector can significantly impact upon the performance of bank and have positive impact on overall productivity of the system. The study recommended that the use of Artificial intelligence in banking sector can significantly impact upon the performance of bank and have positive impact on overall productivity of the system.

2.3.1 Cutting-edge Studies Linking bank liquidity and bank profitability

As Marozva (2015) clearly pointed out, there have been several studies conducted and still on-going debates to investigate the relationship between bank liquidity and bank profitability. He posited that the findings of these studies resulted in varying conclusions; whereas some researchers conclude that there is a negative relationship between these variables, other researchers concluded otherwise. Surprisingly, Marozva (2015) points to other studies that observed parallel relationship between these

variables. Below are some findings by a number of researchers that support a positive relationship between bank liquidity and performance (profitability). A study by Bordeleau and Graham (2010) of Canadian and USA banks for the period 1997 to 2009, as cited in Tamunosiki (2017) sought to determine the bearing of banks holding liquid assets using econometric analysis. Their result concluded that even though banks holding liquid assets have positive impact on profitability, however, increased profitability was dependent on the quantum of liquid asset over a certain period of time. The result suggests that, banks' profitability could be increased by holding a certain amount of liquid assets over a specified time. However, the research also suggested that holding such assets beyond the optimal time diminishes the banks' profitability. Further evidence also suggests that the link between the two variables is dependent on the bank's framework and the economy in general. In a work by Andrew and Osuji (2013) to examine the efficiency of liquidity management and bank profitability using a survey design, their findings also indicated a positive relationship between effective liquidity management and bank profitability. Again, their findings also revealed efficient liquidity management is very critical to ensuring the security of banks. Also, a study by Abubakar (2015), whose work examined the traditional measures of bank liquidity like cash reserve requirement and liquidity ratios, nature of liquidity management and financial ratio analysis. His findings concluded that the quantum of a bank's liquid assets coupled with proper management measures had a positive relationship to the bank's performance. However, this finding to some extent is refuted by Anthony, (2016). The basis of their argument was the fact that his study only focused on the banking sector hence was not a good yardstick for generalization. Also, an attempt was made to ascertain the determinants of Greek's banks performance at the time of financial integration by the European Union in the periods of (1990-2002) by Kosmidou (2008). It was found that banks' liquid assets have a positive relationship with return on asset (ROA). Another work by Kosmidou (2005) also found out that there is a positive relationship between banks' ROA and the ratio of liquid assets to customer and short funding obligations.

Kosmidou (2008) findings are in agreement with Bourke's findings of positive relationship between liquidity risk and bank profitability. Olangunji (2012) in their study found that there is a significant positive relationship between bank liquidity and its performance. In their study, they argued that there is a two-way relationship, especially for commercial banks, where banks' accelerating performance and profitability is significantly influenced by high levels of liquidity and vice-versa. On the other hand, there are other research findings that point to a negative relationship between bank liquidity and performance. Their argument is based on the premise that

banks hold liquid assets only as a mandatory requirement as opposed to the belief that it yields positive consequences to the banks' fortune (Molyneux & Thornton, 1992). Tobin (1958) made a simplified deduction of Keynes' liquidity preference theory (1936) by arguing that liquidity by banks is for the purposes of operational transactions and reinvestments. Tobin's assertion is in support of Keynes' theory that presupposes that liquid assets held by banks constitute cost rather than profit. This assertion stems from the fact that, liquid assets are held as reserves and used to cater for contingencies. Legal imposition is the sole reason for banks holding certain levels of liquid assets (Molyneux & Thornton 1992). Marozva (2015) argues that the authors may have missed the argument as to why banks hold liquid assets. He acknowledged that, the reason for banks maintaining substantial liquidity cut across much functionality of the banks' operations. A study by Raheman and Nasr (2007) revealed an inverse relationship between bank liquidity and bank profitability. Again, they adopted net operating profit as the dependent variable and inventory turnovers, average collection and payment periods, cash conversion cycle, fiscal asset, size of firm, current ratio and financial asset to total asset ratio as the independent variables. They came up with a highly negative relationship between debts used by the firms and its profitability. On the contrary to this, some findings also conclude parallel relationship. For instance Shen (2010) posit that liquidity risk is positively related to interest margins in market based financial system. This implies that banks with lower level of illiquid asset are faced with lower interest income and vice-versa. Contrary to the above, their earlier findings in relation to interest margin concluded that unlike the earlier position, liquidity risk is negatively related to return on asset (ROA) and inversely related to return on equity (ROE). In this context, they posited that banks with higher illiquid asset incur higher funding cost as extra funds to bridge the funding gap must be recouped from the market. Again, a work by Shen (2010) came to the conclusion that there is no relationship between bank liquidity and its performance. Their argument is based on the premise that because banks play a constant and key role in financial system, they are therefore not affected by liquidity risk. Also, Naceur and Kandil (2009) concluded that banks' asset or equity are not determined by the banks' liquid assets based on their analysis of cost of intermediation in the post capital regulation regimes. Abdullah and Johan (2014) examined the impact of liquidity on commercial bank in Bangladesh. The study sampled five commercial bank using panel data over a five year period where return on assets and return on equity were used to measure bank profitability and loan deposit ratio, deposit asset ratio and cash deposit ratio. The results of the study showed that there is no significant relationship between liquidity and profitability of listed commercial banks in Bangladesh. Ibe (2013) examined the impact of liquidity

management on profitability of commercial banks in Nigeria. The study randomly selected three commercial banks to represent the Nigerian banking industry using proxies such as cash and short term fund, bank balances and treasury bills and certificates, while profit after tax was the proxy for profitability. The result of this study has shown that liquidity management is indeed a crucial problem in the Nigerian banking industry. The study therefore recommends that banks should engage competent and qualified personnel in order to ensure that right decisions are adopted especially with the optimal level of liquidity and still maximize profit. Khan and Ali (2016) examined the impact of liquidity of profitability of commercial banks in Pakistan. The study used secondary data extracted from the financial statement of some selected banks over a five year period from 2008 to 2014. Using correlation and regression analysis, the results of the study revealed that a positive and significant relationship between liquidity and profitability of commercial banks. The study however cautioned that the small sample size meant that the results cannot be generalized for the entire banking sector in Pakistan. In the Ghanaian context, Lartey (2013) examined the effect of liquidity on the profitability of listed banks in Ghana. The study sampled the entire seven listed bank on the Ghana Stock Exchange at the time over a 6 year period from 2005 to 2010. The study revealed that the liquidity and profitability position of listed banks in Ghana declined over the study period. The regression and correlation analysis revealed that there was a weak positive and statistically insignificant relationship between liquidity and profitability of listed banks in Ghana. Warrad (2016) examined the impact of liquidity on profitability of commercial banks in Jordan. The study sampled 15 commercial banks in Jordan over a seven year period from 2005 to 2011. The results of the study showed that a significant impact of liquidity on profitability of listed commercial banks in Jordan. The study however used quick ratio as a means of bank liquidity contrary to the bank liquidity measures used in literature.

The review shows that there is little study that examines the impact of liquidity on profitability of commercial banks. The few studies used liquidity as one of the factors that influence profitability of commercial banks. The only study that appears to have examined liquidity and profitability of commercial banks in Ghana is the work by Lartey (2013). The study apart from using a small sample size of 7 also focused on only listed commercial banks in Ghana. This means that the results of the study cannot be generalized on all commercial banks in Ghana hence the need for this study. The review of theories explaining bank liquidity and how it impacts on the profitability of banks as well as the empirical review shows some conflicting results. On the empirical results, some studies reported a positive significant relationship between liquidity and profitability of commercial banks (Khan & Ali, 2016; Anthony, 2016; Abubakar,

2015;Warrad, 2015; Osuji, 2013; Olangunji., 2011; Kosmidou, 2008; Kosmidou, 2005; Bourke, 1989), other studies have reported a negative significant relationship between liquidity and profitability of commercial banks (Marozva, 2015; Islam, 2008; Raheman & Nasr, 2007) while other studies reported no significant impact of liquidity on profitability of commercial banks (Abdullah & Johan, 2014; Lartey , 2013, Shen, 2010).

2. 4 Research Gap in Business Transformation Conceptualization link with Performance Heuristics of Service Organization in Africa

Transformation takes place when there are fundamental and comprehensive changes in structure, processes and behavior that have dramatic effect on the ways in which the organization functions (Armstrong, 2012). Despite the advancement of technological transformation in the commercial banking sector, there still remain questions on whether this advancement has helped improve the bank's performance in term of return on equity, return on investment, return on asset and non- interest income. Some studies conducted in Ethiopia and in Nigeria showed that electronic banking has no significant effect on performance of commercial banks (Girma, 2016; Okonkwo, Obinozie & Echekeba, 2015; Oko, 2019) while some other studies established that e-banking significantly impacted on the financial performance of banks(Hassan, Mamman & Farouk, 2013;Abaenewe, Ogbolu & Ndugbe, 2013;Vekya, 2017, Rashid, 2018, Ilo, Ani & Chioke).

There is still significant gap between the top five banks and the bottom five banks across all key performance variables despite the potential benefits of e-banking. No study, to the best of the researcher's knowledge, has looked at whether these technological transformations can significantly improve the financial performance of the bottom five commercial banks in Nigeria. Therefore, this study complements and adds to the effort of researchers on the subject matter in Nigerian commercial banks. Based on the identified gap, this study is set to close the gaps by using ten variables, a sample size of ten (top five and bottom five banks in Nigeria) and will compare the performance of top five and bottom five commercial banks in Nigeria to throw more light on the relationship between business transformation and performance of commercial banks in Nigeria.

2.5 Practical and Theoretical Implications of the Study

This conceptual study contributes to ongoing debate on the impact of business transformation on performance of commercial banks in Sub-Sahara Africa. The result

will be of immense benefit to all customers, branch managers, bank employees, shareholders, regulators, researchers and students in the following ways:

First, the findings of this study will enable branch managers to focus more on the electronic banking channels that significantly contribute to their bottom line and to identify those that are not contributing and try to improve on them. This will be a reference material for the bank employees especially those in Information Technology (IT) and electronic channels (e-channel) units. More so, this will provide insight to shareholders on the progress made so far in the ongoing technological transformation in Nigerian banks. In addition, the outcome of this study will enable Central Bank of Nigeria understand the current issues on e-banking in Nigeria and assist them in identifying strategies in promoting e-banking and cashless/ cash lite policies in Nigeria. Materials from this study would add to existing literature for researchers and students of management sciences that want to conduct a study related to business transformation and bank performance.

2.6 Limitations of the Study

The study as a matter of fact should have captured all banks in Nigeria but this is not possible within the allowed time and budget for study of this magnitude. However, there are twenty-seven (27) commercial banks in Nigeria and this study was limited to ten (10) to have manageable data.

2.7 Conclusion

Finally, the conceptual findings this study will assist banking industry to achieve its cashless policy by addressing the gaps in electronic banking adoption in Nigeria.

2.8 Recommendations

Based on the conceptual findings, the study recommends that future studies should focus on primary and secondary empirical data-driven modeling of the mechanism linking business transformation to performance in banking sector organization in Nigeria.

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