

## **DIGITAL INFRASTRUCTURE AND ORGANIZATIONAL PERFORMANCE OF FIRST BANK PLC, IN RIVERS STATE**

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### **ABSTRACT**

*The study examined the relationship between digital infrastructure and organizational performance of First Bank Plc in Rivers State. The purpose of the study was to examine the extent which dimensions of digital infrastructure such as provision of internet service, bank application and end-users devices relate to organizational performance such profitability, service delivery and reputation. The explanatory cross sectional survey research design was adopted which necessitated the test of hypotheses. The population of the study consisted of 100 managers from First Bank Plc Bank resident in Rivers State while 80 respondents were chosen as sample size using Krejcie and Morgan sample size Determination Table of 1970. Copies of questionnaires were administered by the researcher while 76 copies retrieved. Spearman Rank Order Correlation Coefficient was employed to test hypotheses. Findings revealed that there is a significant relationship between digital infrastructure is a key to enhancing performance among banking institutions as long as digitalization has come to stay as an unavoidable business environment. The study recommended among others that First Bank Plc should ensure 24 hours effective functional internet services to ease banking process; First Bank Plc should improve their banking application to guarantee customer banking at their convenient.*

### **INTRODUCTION**

#### **Background to the Study**

In the light of the rising competitive business environment, digitalization has become a trending position in various types of business activities. Therefore, organizations began searching for digitalized environment to enable them survive and compete. The unique development in digital infrastructure has creates opportunities for the success of organizations. Thus, adoption of digitalization will positively affects organizational performance direct and indirect. The performance of the organization reflects its ability to achieve its objectives in the long. Furthermore, the performance is the final result which is seeking to achieve the organizations through the formulation of the strategy, and the exploitation of resources in an optimal way to get to superior organizational performance.

Digitalization has become paramount as industries and institutions including commercial banks strive to adopt better and more effective methods of service provisions to their clients and day today customers. Digital infrastructures has brought about a boost in the financial sector specifically the support of banking services, risk management and increase in productivity for better customers services, reputation and increase profitability. Though despite the obvious shift to digitalized methods of service provision and delivery, it is pertinent to note that some financial institutions still see the entire process of digitalization as problematic and difficult. A lack of understanding of infrastructure investments can cause problems in multi-business firms because these firms often rely on digital infrastructures to enable the sharing of IT and data across business units. The practice of digitalizing services carried out by financial institutions gives a new

turn to service provision and make for better customer satisfaction as a result of diversity in service provision.

Digitalization can also be describe as a mechanism used by organizations to ensure effective and efficient organizational performance, though an infective digital infrastructure may undermine the business unit's competitive performance in terms of profitability, service delivery and reputation (Naseem, 2017). There is no doubt that presently business organizations such as the banking industry depend highly on modern digital infrastructures in achieving effective and efficient performance, but most time the result has been the case of network failure at the expense of client or customers. There is therefore imperative to ensure functional and reliable digital networking system in an organization such as First Bank Plc, Rivers State and how it can ensure better banking services. For the purpose of this study digital infrastructure is dimensionalized to provision of internet service, bank application and end-users devices.

Internet service as a dimension of digital infrastructure is refers to a world-wide, ever-growing network of interconnected computer systems. The place of the internet in daily life is undisputed. The Internet carries a vast range of information resources and services, such as the interlinked hypertext documents of the World Wide Web (WWW) and the infrastru to support electronic banking system. Internet has been the most useful technology of the modern times which helps us not only in our daily lives, but also our personal and professional lives developments. Banks that are digitalized uses internet service to improve their customer service delivery to enhance organizational performance.

Bank applications as another dimension of digital infrastructure refers to a digital infrastructure that aims at ensuring reliable and digitalized work environment that enhance client or customers perform banking transactions at their convenient even in the remote areas. These can be as simple as asking for an automated teller machine (ATM) card or asking for relevant information regarding the client's account in the bank, e-banking, etc. Bank applications are also used when applying for a loan, although there are factors to consider before such an application can be granted. Banking applications are focused on customer and their expedition. It can ensure the place customer as the king and all services provided to customers should be validated as being valuable.

End-users device as other dimension of digital infrastructure refers to electronic devices comprises soft and hardware or information technology (IT) hardware that are used by employees or simply people in general use during work that enhance organizational performance for better services delivery. These involve desktop and laptop PCs to printers, document scanners, bar code scanners, smart phones, workstation, wearables, consumer-oriented tablet devices etc. It helps in the installing and updating operating systems and application patches, managing user accounts, and maintaining up-to-date security to ensure effective and efficient banking services for better performance and customers satisfaction.

One of the key concerns that most organizations countenance presently as the need to improve its performance. Organizational performance reflects the interaction between behavior and achievement of the organization, outputs the value offered by the organization on the form of goods and services (Richard, Devinney, Yip, & Johnson, 2009). Organizational performance also involves the recurring activities to establish organizational goals, monitor progress toward the goals, and make adjustments to achieve those goals more effectively and efficiently. One of the very important elements which affect the organizational performance is the technological support. The banking industry as one the major player in opening up to global markets, need more modern

digitalized infrastructure to stay in the market and to provide banking services in various business areas.

### **Statement of Problem**

There seems to be a growing concern about the unpleasant performance of some banks in the banking sector in terms of service delivery as a result of network failure, outdated banking devices and the banking system. The network failure and obsolete banking system operations has resulted to lost of profit, ineffective service delivery and reputation of the banking sector as viewed by client/customers (Agboola, Asokomeh, Akinbode, Peter & Deborah, 2017). It has also been observed that customer has experience cash debit at the ATM point of withdrawer without dispensing cash, irregular charges from mobile banking transactions, dealer in receiving credit or debit alert, limited banking facilities such as Automated Teller Machine (ATM), long bureaucratic process in accessing forex/loan, etc constituted lost of customers confidence on the banking sector service delivery.

The researcher has also observed that many banks has refused to upgrade their banking system and service delivery to reflect the modern and 21<sup>st</sup> century banking practices that will improve their service for better banking performance to bring about customers satisfaction as well attract prospective customers.

However, similar studies have been carried out in other part of the world, but none was carried out on the relationship between digital infrastructure and organizational performance of First Bank Plc, in Rivers State. For instance, Lavanya and Selvakumar (2020) examined the impact of digital infrastructure of commercial Banks in India; investigated how digitalization enhances the performance of commercial banks in Nigeria (Mayowa, Kiitan & Awobajo, 2019); examined the impact of ICT infrastructure support on organizational performance in Nairobi County, Kenya (Walter & George (2017). However, none of them has been able to provide empirical explanation about the relationship between digital infrastructure and organizational performance of First Bank Plc, in Rivers State. There is need therefore, to fill this knowledge gap. Here lies the essence of this study.

### **Purpose of the Study**

The purpose of the study was to examine the relationship between digital infrastructure and organizational performance of First Bank Plc in Rivers State. The specific objectives of the study include:

1. To determine the relationship between internet service and organizational profitability of First Bank Plc, Rivers State.
2. To determine the relationship between bank application and organizational service delivery of First Bank Plc, Rivers State.
3. To determine the relationship between end-users devices and organizational reputation of First Bank Plc, Rivers State.

### **Research Hypotheses**

Base on the research questions, the following null hypotheses were formulated:

Ho<sub>1</sub>. There is no significant relationship between internet service and profitability of First Bank Plc in Rivers State.

Ho<sub>2</sub>: There is no significant relationship between bank application and service of First Bank Plc in Rivers State.

H<sub>03</sub>: There is no significant relationship between end-users devices and reputation of First Bank Plc in Rivers State.

## **Review of Related Literature**

### **Conceptual Review**

#### **Concept of Digital Infrastructure**

Digital infrastructures are important foundations to ensure digital transformation of organization that want to enhance the potential of new digital technologies. According to Zimmermann (2017) a digital infrastructure consists of both technical and organizational components, processes, and networks. It comprises the social environment of users of digital tools and the designers and systems developers connected to the infrastructure. In current research literature, a digital infrastructure is conceptualized as an interconnection of different system collectives, including the software, hardware, standards, the Internet, platforms, and humans, very unlike standalone information systems (Iienfridsson & Bygstad, 2013). Digital infrastructures are becoming indispensable for sustainable operations in both public and private sectors, and their emergence and growth are increasing across different industries (banking, pharmaceutical, health care, manufacturing, energy, marine industry, and governmental institutions).

Digital refers to information technology systems that electronically collect, process, and transmit information. Therefore, digital infrastructures are those where at least a portion contains information technology while Infrastructure refers to a wide array of physical assets. Tilson, Lyytinen and Sorensen (2010) define an organizational digital infrastructure as the basic information technologies and organizational structures, along with the related services and facilities necessary for the enterprise to function. When organizational infrastructures become fully digitalized, new generative dynamics emerge that affect the social and technical aspects of infrastructure convergence.

The process of digitalization in the banking industry is an activity of great importance; however, despite the importance, it is pertinent that hard copies of documents digitized should still be stored and there should be manual processes of carrying out services peradventure the automated means become faulty. Satyendra (2016) opined that the process of digitalization is a sequential procedure that is patterned in line with the activities of archiving, access and management He further outlined some processes of digitalization which include the following:

The process of initiation and the start of the project: this involves the initial plans preceding the digitalization process such as acquisition of the devices to be used, training and hiring of the needed manpower to carry out the digital content creation.

Selection of documents and activities for digitalization: some hard copy documents are then sorted and selected in preparation for the digitalization. This step also involves setting time frames for achievements of certain task relating to the digitalization process. In a situation where manual methods have never been used, there would be no need for changing the physical formats of the documents.

Conversion Process: this is the actual process of transforming the documents into machine readable format and putting in place all the gadgets needed for activities of digitalization.

Editing, Access and Maintenance: this involves checking through the already digitized documents to avoid errors, making the access point's user friendly and putting in place proper procedure and

plans for regular maintenance. It is important to note that maintenance is paramount when digitalization activities are put in place, to avoid sudden loss of data or total crash of the entire system.

The digitalization change has been around for a considerable length of time; but in recent times, its effect and the speed of change appear to be exceptional. Digitalization has changed the financial sector and its working condition. Albeit, it is important to say that financial services have been automated for quite a long time, but a more extreme change could be said to be delayed as a result of most financial organization trying to maintain their traditional financial mode of services (IFC, 2017).

## **Dimensions of Digital Infrastructure**

### **Internet Service**

The internet (portmanteau of interconnected network) is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link devices worldwide. It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies (Ness, 2016). The internet carries a vast range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and the origins of the Internet date back to research commissioned by the federal government of the United States in the 1960s to build robust, fault-tolerant communication with computer networks (Bill, 2008). The primary precursor network, the ARPANET, initially served as a backbone for interconnection of regional academic and military networks in the 1980s. The finding of the National Science Foundation Network as a new backbone in the 1980s, as well as private funding for other commercial extensions, led to worldwide participation in the development of new networking technologies, and the merger of many networks (Bill, 2008). The linking of commercial networks and enterprises by the early 1990s marked the beginning of the transition to the modern internet (Ian, 2014), and generated a sustained exponential growth as generations of institutional, personal, and mobile computers were connected to the network. Although the Internet was widely used by academia since the 1980s, commercialization incorporated its services and technologies into virtually every aspect of modern life which can enable banking industry effectively perform their task. The internet has transformed every work and organizational process. The contemporary information and communication technology-driven office environment requires the bank and its customers to make extensive use of internet perform transaction (Michelle & Lori, 2013). It also expedient that banks become proficient service provider that enhances their performr.ir.je Internet communication tools basically refer to electronic and social media forum? applications used for inputting, processing and sending of information from one another to achieve a certain goal (Eric, 2013). Internet communication tools include and publishing software, webpage authoring tools, e-mail and online discussion forums etc (Michelle and Lori, 2013).

### **Bank Application**

Bank application is a mobile app where can be used to access the details of once bank account and complete transactions directly from once phone, tablet, or mobile device, automated teller machines (ATMs), Interactive voice response (IVR) systems, point-of-sale (POS). According to the World Bank (2009) the emergence of mobile technology and its increasing usage for banking purposes has herald new opportunities for the banking sector. Bank application mobile-based technology makes it convenient for consumers to use financial services anywhere, provided mobile

communication is available. Vaidya (2011) defined bank application as a service or software provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a smartphone or tablet through use of internet connecting services.

Khajeh (2011) describe bank application as one of the latest technologies that customers use on the go. For example mobile banking service offered to customers by retail and commercial firms, money lenders and service providers for transacting by using a handheld device such smartphone, tablet, cellular phone and personal organizers (Shaikh & Karjaluto, 2015 I; utilized to access bank account, balance inquiry, bill payments, deposits and transfers.

Internet connection (which can either be Wi-Fi, mobile data or fibre optic cable) or network by sending an SMS or calling. It made it possible to avoid physically going a bank branch to make transactions. The account information can be accessed from virtually anywhere in the world and transactions achieved as well. In a large sense is part and parcel of e-commerce.

The format of the banking application itself is fresh and easy to use, and can be used to link other ally accounts like a CD or IRA for a more straightforward review. As a bonus perk, it car. read up on stock market news directly from the app. Also, Ally uses Zelle, which allows transfer of money within once ally accounts or between once ally and non-ally accounts Shaikh & Karjaluto, 2015). The banking application is designed to work in a similar way to any transaction one complete at the bank that does not involve cash. This is to ensure access to once account and get once financial needs serviced easier and more quickly than going into a bank to transact.

### **End-Users Devices**

An end user device is a technical term referring to information technology (IT) hardware that are used by employees or simply people in general use during work. McLean, Kappelman and Thompson (2010) define end-user device as a combination hardware and software component used to performance task. These involve desktop and laptop PCs to printers, document scanners, bar code scanners, smart phones, workstations, wearables, consumer-oriented tablet devices etc. It helps in the installing and updating operating systems and application patches, managing user accounts, and maintaining up-to-date security to enable organizational excel (Oladejo & Akanbi, 2012).

The use or electronic devices in providing banking service is the product of different generations of electronic transactions. The current web-based internet or e-banking is the latest of several generations of system: Automated Teller Machine (ATMs), phone banking, PC or House Banking. Automated Teller Machines (ATMs) were the first well-known machines to provide electronic access to customers where as in phone banking, users call their bank's computer system on their ordinary phone and use the phone keypad to perform banking transactions (Jennex, 2013). It provides current information, 24-hours-a-day access to banking services.

### **Concept of Organizational Performance**

In general, the concept of organizational performance is based upon the idea that an organization is the voluntary association or productive assets, including human, physical, and capital resources, for the purpose of achieving a shared purpose (Alchian & Demsetz, 2012). Those providing the assets will only commit them to the organization so long as they are satisfied with the value they receive in exchange, relative to alternative uses of the assets. As a consequence, the essence of performance is the creation of value. So long as the value created by the use of the contributed

assets is equal to or greater than the value expected by those contributing the assets, the assets will continue to be made available to the organization and the organization will continue to exist.

In the 50s organizational performance was defined as the extent to which organizations, viewed as a social system fulfilled their objectives (Geogopoulos & Tannenbaum, 1957 in Gavrea, Ilies and Stegeran, 2011). Performance evaluation during this time was focused on work, people and organizational structure. Later in the 60s` the 50s organizational performance was defined as the extent to which organizations, viewed as a social system fulfilled their objectives (Geogopoulos & Tannenbaum, 1957 in Gavrea, Ilies and Stegeran, 2011). Performance evaluation during this time was focused on work, people and organizational structure. Later in the 60s` the 50s organizational performance was defined as the extent to which organizations, viewed as a social system fulfilled their objectives (Geogopoulos & Tannenbaum, 1957 in Gavrea, Ilies and Stegeran, 2011). Performance evaluation during this time was focused on work, people and organizational structure. Later in the 60s` the 50s organizational performance was defined as the extent to which organizations, viewed as a social system fulfilled their objectives (Geogopoulos & Tannenbaum, 1957 in Gavrea, Ilies and Stegeran, 2011). Performance evaluation during this time was focused on work, people and organizational structure. Later in the 60s` and 70s, organizations have begun to explore new ways to evaluate their performance, so performance was defined as an organization's ability to exploit its environment for accessing and using the limited resources (Yuchtman & Seashore, 1967 in Gavrea, Ilies and Stegerean, 2011). Organizational performance can also be defined as a set of financial and non financial indicators which offer information on the degree of achievement of objectives and results.

## **Measures of Organizational Performance**

### **Profitability**

Profitability has been given considerable importance in the finance and accounting literatures. Hifza (2011) describe profitability as one of the most important objectives of financial management since one goal of financial management is to maximize the owners' wealth and profitability is very important determinant of performance. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business entity is to earn profit in order to make sure the sustainability of the business in prevailing market conditions. Pandey (2014) defined profitability as the ability of a business, whereas it interprets the term profit in relation to other elements. It is necessary to examine the determinants of profitability to understand how companies finance their operations. A financial benefit is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity. Profitability analysis classifies measures and assesses the performance of the company in terms of the profits it earns either in relation to the share holders investment or capital employed in the business or in relation to sales, profit, (or loss). Dong and Jhy-tay (2010) opines that profitability is the organizations' ability to generate income and its inability to generate income is a loss.

### **Service Delivery**

Service delivery is a set of activities that take place to perform a service. Performance involves the coordinated actions of both the provider and user (customer) of the service. In industrial settings, there may be many types of users, and the number of performer's increases (iglobal.com). It is a measure of how well services rendered by an organization conforms to the

client's expectations in terms of promptness and meeting the needs of the end-user. Service delivery refers to the actual delivery of a service and products to the customer or clients (Lovelock & Wright, 2012). It is therefore concerned with the where, when and how a service product is delivered to the customer and whether this is fair or unfair in nature. The service concept defines the "how" and the "what" of service design, and helps mediate between customer needs and an organization's strategic intent (Goldstein, Johnston, Duffy & Rao, 2013). Finally, delivering services of high quality is an important pursuit for service providers that seek to create and provide value to their customers (Gronroos & Ravald, 2011).

### **Reputation**

There are lots of different of what reputation is, however, the fact remain that organizational reputation has to be earned (Neville, Bell, & Menguc, 2015). Obviously, every discussed discipline brings a meaningful input into seeking integrative approach to corporate reputation: form explaining its role and potential in the market, up to researching the processes of establishment and analyzing a company's abilities to shape its reputation. Organizational reputation is a concept with exceptional multidisciplinary richness. Organizational reputation directly affects the strategic behaviour patterns of a firm and the observable characteristics of the manner in which an organization performs decision-making and planning function with regard to issues that are of strategic importance to its survival, growth and profitability (Oghojafor, 2021). Organizational reputation is directly related to the corporate identity of company and it is interpreted as an organization's ethos, goals and values that create a sense of belonging among company's stakeholders (George, Owoyemi & Onakala, 2012).

### **Theoretical Review**

This work is anchored on socio-technical theory. The socio-technical theory was attributable to Eric Trist, Ken Bamforth and Fred Emery, during the World War II era, based on their work with workers in English coal mines at the Tavistock Institute in London ([https://en.wikipedia.org/wiki/Socio-technical\\_system](https://en.wikipedia.org/wiki/Socio-technical_system), 2017). The theory is made up of two main constructs joined together: socio has to do with people and society while 'technical' has to do with machines and technology (Walker, Spear, Gould, and Lee, 2016). The term "socio-technical" refers to the interrelatedness of social and technical aspects of an organization. The socio-technical theory is founded on two cardinal assumptions:

- i. "The interaction of social and technical factors creates the conditions for successful system performance" (Walker, 2016). These interactions are comprised partly of linear 'cause and effect', complex, even unpredictable relationships, which are those that are often unexpected.
- ii. The second major principle of socio-technical theory is that "optimization of either socio, or far more commonly the technical, tends to increase not only the quantity of unpredictable, 'un-designed', non-linear relationships, but those relationships that are actually injurious to the system's performance" (Walker, 2016). Thus, second principle of socio-technical theory hinges on joint optimization. The second principle holds that improving only one aspect of the organization (e.g. the Managers and other bankers) and abandoning the other element (digital infrastructures) will be detrimental to the organization or firm. Both the Managers and other bankers and digital infrastructures of an organization must be optimized simultaneously for expected results to be achieved.

### **Implication for the Theory to the Study**

The justification of the socio-technical theory as the theoretical foundation of this study is based on the fact that the theory explains and predicts how digitalized workplace infrastructure in conjunction with the skilled bank manager and other bankers will enhance organizational performance.

### **Empirical Review**

Mayowa, Kiitan and Awobajo (2019) investigated how digitalization enhances the performance of commercial banks in Nigeria. The purpose of the study was to investigate the relationship between digitalization and performance of commercial banks. The population of the study was 370 non-managerial employees from a commercial bank. A quantitative research design and a survey strategy were used. A self-structured questionnaire was used as the major instrument for data collection and was analysed using SPSS version 25. From the result, it was discovered that there was a mild significant and positive relationship between the digitalization process and commercial bank performance. Also, there is a positive significant relationship between product innovation and performance of commercial banks in Nigeria.

Walter and George (2017) examined the impact of ICT infrastructure support on organizational performance in Nairobi County, Kenya. The purpose of the study was to examine the relationship between ICT infrastructure and organizational performance. The population of the study was 250 employees. A quantitative research design and a survey strategy were used. Data was collected using simple structured questionnaires and analyzed using descriptive and regression analysis. The findings showed that a robust ICT infrastructure in procurement improves communication, enhances efficiency, enhances monitoring and control work easier as well as improving service delivery. ICT infrastructure also plays an importance role in improving the level of coordination between members of the supply chain network. It facilitates the flow of information between members of the supply chain ensuring the timely delivery of goods and services between supply chain partners. By improving coordination among supply chain partners, ICT infrastructure eliminates high transaction costs associated with the flow of goods from one supply chain partner to another.

Lavanya & Selvakumar (2020) examined digital Infrastructure of commercial Banks in India. The purpose of the study was to examine the relationship between digital Infrastructure and commercial Banks. The population of the study was 50 employees. The descriptive research design was adopted for the study while simple percentage analysis and chi-square test have been used in this study. Chi-square test has been adopted based on the formulated hypothesis. Findings of the study show that majority of the customers are utilizing the online facility for 2 to 5 times per month, most of the respondents are using internet or smart phones for the-purpose of payment of bills and for checking their statement of account, majority of the respondents felt convenient with Laptop or computer instead of smart phone for banking their transactions.

### **Knowledge Gap**

Digital infrastructure is a concept that has been study and examined in difference dimensions. Some of these works are focused on different dependent variables, as well done in different geographic scope and organizations as well different statistical tool for the test of hypothesis, even the work on digital infrastructure commercial banks in selected commercial banks in India (Lavanya & Selvakumar, 2020). Thus, there has been no categorical empirical study on digital infrastructure and organizational performance of First Bank Plc, Rivers State. Therefore, employees and employer are yet to comprehend how total digitalization of infrastructure enhances organizational performance in First Bank Plc, Rivers State. Hence, this work seeks to fill this gap

by empirically examining digitalization of infrastructure with dimensions such as provision internet service, bank application and end-users devices and organizational performance with measures like profitability, service delivery and reputation.

## METHODOLOGY

### Research Design

The explanatory cross sectional survey research design was adopted for this study. That the researcher deemed it fit to generate data as pertain to answer research question, and explain the relationship between the independent and dependent variables under study.

### Research Population

Population refers to all conceivable elements, traits, events, and people subjects relating to a particular phenomenon of interest to the researcher (Wikipedia, 2018). The population of the study consisted of 100 Managers (General Manager, Personnel Manager, Operational Manager and Customer Relations Manager) of First Bank Plc in Rivers State. The branches and number of workers are underlisted below:

**Table 3.1: Showing the Population of each branch of First Bank Plc, Rivers State**

S/N	Name	No of Managers
1.	First Bank Plc, Obio Akpor LGA council, Rumuokoro	4
2.	First Bank Plc , NO 9 Old Trans Amadi Slaughter Road	4
3.	First Bank Plc , 127, Abuloma Road	4
4.	First Bank Plc , 76, Plot No. 247, Ikwerre Road, Agip Round About	4
5.	First Bank Plc , 258, Aba Road, Artillery, Rumuogba	
6.	First Bank Plc , 206, Uniport Road, Choba	4
7.	First Bank Plc, No 16 Church Iiill Town, Borikiri	4
8.	First Bank Plc , 33, Ikwerre Road, Diobu	4
9.	First Bank Plc , 1, Peace Avenue, Off East West Avenue Road, Eligbolo	4
10.	First Bank Plc , 1, Agudama Aveneue, D Line	4
11.	First Bank Plc , 1 Harbour road, town	4
12.	First Bank Plc, 22/24 Aba Road	4
13.	First Bank Plc , 107 Olu Obasanjo Road	4
14.	First Bank Plc , 4, East - West Road, Rumuokoro	4
15.	First Bank Plc ,315, Aba Road, Opposite Oil Mill Market,	4
16.	First Bank Plc , 77, Rumuola Road, Rumuola	4
17.	First Bank Plc , No. 1 Old Ph/Aba Road, Rumuomasi By Airforce Junction,	4
18.	First Bank Plc , Shell Industrial Area	4
19.	First Bank Plc , 63 Stadium Road, Beside Charlies Total Fitness Rumuomasi	4
20.	First Bank Plc , 6A, Station Road, By High Court	4
21.	First Bank Plc , Plot No. 745, Trans Amadi Industrial Estate,	4
22.	First Bank Plc , 52 Iwofe Road Off Ada-George Road	4
23.	First Bank Plc , 65, Woji Estate Road	4
24.	First Bank Plc , No 8 Omoku Road, Ahoada	4

25.	First Bank Pic , School Road, Omoku	4
	<b>Total</b>	100

**Source:** firstcontact@firstbanknigeria.com, <http://www.firstbanknigeria.com>.

However, in terms of sample size determination, the study adopted the Krejcie and Morgan Sample Size Determination Table of 1970. Thus, sample size for this study was eighty (80).

### Sample Size/Sampling Technique <sup>^</sup>

The sample size was 80. Based on the sample, A purposive sampling technique was used to administer the instrument for data collection. In terms of respondents, managers such as General Manager, Personnel Manager, Operational Manager and Customer Relations Manager were purposively selected across the twenty five (25) branches of First Bank in Rivers State.

### Sources of Data

This study used both primary and secondary data. The internet, print journal article- textbooks was used as secondary sources of data while structured questionnaire will be used as the main instrument for the collection of primary data.

### Method of Data Analysis

Mean and standard deviation was used to analyze the research questions while Spearman Rank Correlation Coefficient (r) was used for the test of hypotheses. The mean and standard deviation was used to ascertain the level of extent the sub-variables are present in the study. While the Spearman Rank Correlation Coefficient (r) was adopted for the test of hypotheses because it indicates the level of significance the independent sub-variable and dependent sub-variable related for better business operations.

**Decision Rule:** Using a level of significance 0.05 (confidence interval of 95%), when a calculated significant value is less than 0.05 the null hypothesis will be rejected, if otherwise, null hypothesis will be accepted.

### Test of Hypotheses

H<sub>01</sub>: There is no significant relationship between internet service and profitability Bank Plc, in Rivers State.

**Table1: There is no significant relationship between internet service and profitability**

S/N	X	Y	R1	R2	D	D2	Cal. r Value	Crit. R Value	Level of Sign
1.	29	11	1	8	-7	49			
2.	16	20	7	2.5	4.5	20.25			
3.	1	1	12.5	12	.5	0.25			
4.	5	2	9	11	-2	4			
5.	20	22	4	1	3	9			
6.	19	19	5	4	1	1			
7.	0	0	14.3	13.2	1.1	1.21			
8.	1	4	12.5	9	3.5	12.25	0.8145	0.429	0.05
9.	28	12	2.5	6.5	-4	16			
10.	11	12	8	6.5	1.5	2.25			
11.	0	0	14.3	13.2	1.1	1.21			

12.	2	0	10.5	13.2	-2.7	7.29
13.	28	20	2.5	2.5	0	0
14.	17	15	6	5	1	1
15.	0	0	14.3	13.2	1.1	1.21
16.	2	3	10.5	10	.5	0.25
	$\Sigma X=179$	$\Sigma Y=141$	$\Sigma 134$	$\Sigma 131$	$\Sigma 34$	$\Sigma D2=126.17$

**Source: Data Survey, 2022**

Since the calculated r value 0.8145 is greater than the critical r value 0.429, the null hypothesis is rejected while the alternate was accepted. This implies that there is a significant relationship between internet service and profitability of First Bank Plc, Rivers State.

Ho<sub>2</sub>: There is no significant relationship between bank application and service of First Bank Plc, in Rivers State.

**Table 2: There is no significant relationship between bank application and service delivery**

S/N	X	Y	R1	R2	D	D2	Crit. Level		
							Cal. r Value	R Value	of Sign
1	33	13	1	7	-6	36	0.8344	0.429	0.05
2	15	20	8	2.5	5.5	30.25			
3	1	0	13.5	12.2	1.3	1.69			
4	2	1	10.5	9.5	1	1			
5	24	27	4	1	3	9			
6	16	16	6.5	4.5	2	4			
7	0	0	14.2	12.2	2	4			
8	1	1	13.5	9.5	4	16			
9	31	17	2	3	-1	1			
10	18	16	5	4.5	0.5	0.25			
11	0	0	14.2	12.2	2	4			
12	2	1	10.5	9.5	1	1			
13	25	20	3	2.5	0.5	0.25			
14	16	14	6.5	6	0.5	0.25			
15	2	0	10.5	12.2	-1.7	2.89			
16	3	5	9	8	1	1			
	$\Sigma X=189$	$\Sigma Y=152$	$\Sigma R=132$	$\Sigma R=116$	$\Sigma =33$	$\Sigma d2=112.5$			

**Source: Data Survey, 2022**

Since the calculated r value 0.8344 is greater than the critical r value 0.429, the null hypothesis was rejected while the alternate was accepted. This implies that there is a significant relationship between bank application and service delivery of First Bank Plc, in Rivers State.

Ho<sub>3</sub>: There is no significant relationship between end-users devices and reputation of First Bank Plc, in Rivers State.

**Table 3: There is no significant relationship between end-users devices and reputation**

S/N	X	Y	R1	R2	D	D2	Crit. Level		
							Cal. r Value	R Value	of Sign
1	40	10	2	6.5	-4.5	20.25			
2	16	17	8	1	7	49			
3	0	0	13.3	13.2	0.01	0.01			
4	2	0	9.5	13.2	0.01	0.01			
5	35	11	4	5	-1	1			
6	26	10	5	6.5	-1.5	2.25			
7	0	0	13.3	13.2	0.1	0.01			
8	2	1	9.5	11.5	-2	4	0.8543	0.429	0.05
9	38	13	3	2	1	1			
10	18	12	6.5	3.5	3	9			
11	0	0	13.3	13.2	0.1	0.01			
12	2	2	9.5	9.5	0	0			
13	41	12	1	3.5	-2.5	6.25			
14	18	9	6.5	8	-1.5	2.25			
15	1	1	11.5	11.5	0	0			
16	1	2	11.5	9.5	2	4			
	$\Sigma X$	$\Sigma Y =$	$\Sigma R =$	$\Sigma R = 1$	$\Sigma = 2$	$\Sigma d^2 = 9$			
	=24	100	127.	31	6.4	9.04			
	0		4						

### Source: Data Survey, 2022

Since the calculated  $r$  value 0.8543 is greater than the critical  $r$  value 0.429, the null hypothesis rejected while the alternate was accepted. This implies that there is no significant relationship between end-users devices and reputation of First Bank Plc, in Rivers State.

### Summary of Findings

The analysis of data revealed that:

1. There is a significant relationship between internet service and profitability of First Bank Plc, in Rivers State.
2. There is a significant relationship between bank application and service delivering of First Bank Plc, in Rivers State.
3. There is a significant relationship between end-users devices and reputation of First Bank Plc, in Rivers State.

### CONCLUSION

Based on the analyses of data and discussion of findings, the study concluded that digital infrastructure is a key to enhancing performance among banking institutions as long as digitalization has come to stay as an unavoidable business environment. It is evident that internet service significantly enhances banks profitability. The study also concluded that bank application enhances banks service delivery. Finally the study concluded that end-users devices influence banks reputation in First Bank Plc, Rivers State. Thus, the absence or ineffectiveness of these

digital infrastructures will limit organizational performance in terms of profitability, service delivery and reputation of First Bank Plc, in Rivers State.

## **RECOMMENDATIONS**

Based on the findings of the study, the following recommendations were made:

1. First Bank Plc should ensure 24 hours effective functional internet services to ease banking process.
2. First Bank Plc should improve their banking application to guarantee customer banking a their convenient.
3. First Bank Plc should endeavour to always maintain the use of quality and necessary banking 'devices to maintain organizational reputation.

## **REFERENCES**

- Agboola, M. G. Asokomeh, B., Akinbode, M. Peter, F. & Deborah, M. (2017).technology acceptance and usage: a catalyst for better performance of the 21st century SMEs. *Advanced Science Letters*, 23 (9), 9329-9333.
- Alchian, A. &Demsetz, H. (2012).Production, information costs, and economic organization .*American Economic Review*, 10 (62), 777-795.
- Bill, E. D. (2008). Determining the need for office automation: Methods and results .*Journal of Office Information Systems*, 21(4), 72-100.
- Brown, T. J., Dacin, P.A., Pratt, M.G., &Whetten, D.A. (2009). Identity, intended image, construed image, and reputation: An interdisciplinary framework and suggested terminology. *Journal of the Academy of Marketing Science*, 34 (2), 99-106.
- Dong, II. & Jhy-tay, S. (2010).The relationship between working capital management and profitability. *International Research Journal of Finance and Economics*, 2 (6), 49.
- Eric, J. S. (2013). Social network analysis: A powerful strategy, also for the information sciences. *Journal of Information Science*, 8 (6), 441-453.
- George, O. J., Owoyemi, O. & Onakala, U. (2012). Theorizing the concept of organizational artefacts: How it enhances the development of corporate/organizational Identity *International Journal of Business Administration*, 3, (4), 204-222.
- Goldstein, Y. E., Johnston, O. & Duffy, W. Q. & Rao, K. (2013).The systems dynamics of executive education. *Executive Development*, 8 (4), 9-14.
- Gronroos, J. & Ravald, D. E. (2011).*Human resource management*. New York: Prentice Hall
- Henfridsson, O. & Bygstad, B. (2013).The generative mechanisms of digital infrastructure evolution *Management Information System Quarterly*, 37(3), 907-931, 285-300.

- Ian, D. (2014). *Origins and concepts of digital literacy*. In C. Lankshear (Ed.), *digital literacies: Concepts, policies and practices*. Lang.
- Khadka, K. & Maharjan, S. (2017). *Customer satisfaction and customer loyalty*. Jakobstad: Centria University of Applied Sciences.
- Lavanya, B. & Selvakumar, D. S. (2020), Digital infrastructure of commercial banks with special reference to vellore district. *International Journal of Recent Technology and Engineering (IJRTE)*, 8 (6), 65-72.
- Lebans, M., Euske, K. (2006). *A conceptual and operational delineation of performance, business performance measurement*, Cambridge University Press.
- Lovelock, D. A. & Wright, O. (2012). *Types of management*.  
<https://courses.lumenlearning.com/boundless-business/chapter/types-of-management/>.
- Mayowa, G. A., Kiitan, A. Awobajo, S. O. (2019). Effect of digitalization on the performance of commercial banks. *International Conference on Energy and Sustainable Environment*, 6 (3), 56-69.
- Michelle, J. E. & Lori, L. (2013). *Tools for learning: technology and teaching Strategies*. Retrieved from <http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1413&context=asdpapers>.
- Naseem, K. (2017). *Why digital banking services are vital to reduce poverty in the developing world*. Retrieved from Medium: [https://medium.com/@IFC\\_org/why-digital-banking-services-are-vital-to-reduce-poverty-in-the-developing-world-35ac35758f04](https://medium.com/@IFC_org/why-digital-banking-services-are-vital-to-reduce-poverty-in-the-developing-world-35ac35758f04)
- Ness, D. (2016). *Office automation project: Managerial overview*. Department of Decision Sciences Working Paper No. 76-07-04, The Wharton School, University of Pennsylvania.
- Neville, B. A., Bell, S.J. & Menguc, B. (2015). Corporate reputation, stakeholder and the social performance relationship. *European Journal of Marketing*, 8 (39), 1184-1198.
- Oghojafor, B. E. A. (2012). *Understanding strategic management*. Lagos: Mukugamu and Business Enterprises.
- Oladejo, M. & Akanbi, T. (2012). Banker's perceptions of electronic banking in Nigeria: A review of post consolidation experience. *Research Journal of Finance and Accounting*, 2 (3), 1-11.
- Pandey, I. M. (2014). Concept of earning power. *Accounting Journal*, 4 (3), 30-36.
- Shaikh, A. A., & Karjaluo, H. (2015). Making the most of information technology and systems usage: A literature review, framework and future research agenda. *Computers in Behaviour*, 12 (40), 541-566.
- Shaikh, A. A., & Karjaluo, II. (2015). Mobile banking adoption: A literature review, *Telematics and Informatics*, 11 (32), 129-142.

Vaidya, M. (2011). *Emerging trends on functional utilization of mobile banking in developed Markets*. New York: Guilford Press.

Walter, H. & George, L. (2017). *The impact of ICT infrastructure support on organizational performance*. Nairobi County, Kenya.

Zimmermann, O. (2017). Micro services tenets. *Computer Science-research and Development*, 32 (3/4), 301-310.