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Effect of digitalization on the performance of commercial banks in Nigeria

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Abstract. This study investigates how digitalization enhances the performance of commercial banks adopting the purposive method and simple random sampling selecting 370 non-managerial employees from a commercial bank. 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 ($r = 0.114^*$; $p < .05$). Also, there is a positive significant relationship between product innovation and performance of commercial banks in Nigeria ($r = 0.186$; $p < 0.001$). The study recommends that digitalization processes if adequately and correctly implemented, will have a significant positive relationship on the performance of commercial banks in Nigeria *ceteris paribus*.

Keywords: Digitalization; Technological Change; Performance; Commercial Banks

1. Introduction

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 to day customers. 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 (Carbo-Valverde, 2017). Abbasi and Weigand (2017) observed that information and communication technologies has brought about a boost in the financial sector specifically the support of banking services, risk management and increase in productivity and these factors have encouraged financial institutions to increase investments in the process of digitalization. A study carried out by Gareth et al. (2006) as quoted by Abbasi and Weigand (2017) revealed that 'banks in North America, Europe, Asia- Pacific and Latin America spent a total of \$241 billion on information technologies in the year 2016 and an overall increase of almost 4% when compared with the year 2015.' They also reiterated that 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.

Technology has changed businesses and within-business connections. This has empowered reconfiguration of design, marketing, production, delivery and services through supply chains, independent structure, outsourced manufacturing and contract warehousing and delivery. The advent of technology has prompted advanced digital transformation, which is not simply restricted to tech-savvy businesses, also high-tech major established organizations have embarked on digital transformation venture too (Idiegbeyan-Ose, Ilo and Isiakpona, 2015; Weill and Woerner, 2018; Agboola, Asokomeh, Akinbode, Peter, and Deborah, 2017)



Digitalization represents a change in perspective that unavoidably influences the most traditional organizations and even effects the general society (Gimpel and Röglinger, 2015; Sambamurthy et al., 2003). It is important to state that digitalization has overturned large industries, retail businesses, media, transport etc. and this is currently sweeping across commercial banks in Nigeria.

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).

As a result of the technological advances and digitalization, the collaboration between commercial banks and customers has likewise been improved and this has made better approaches for transactions. This quick change can be found in the banking sector, where digitalization has given the banks more innovative ways for reaching out to potential clients and in the meantime, this has helped them to enhance their services. Digitalization in the banking sector has brought about Internet banking and mobile banking, which has turned into the single greatest channel right now for reaching customers and for customers to be able to deal with their banking errands themselves (Deutsche Bank, 2016).

The impacts of digitalization on Nigerian's financial institutions can undoubtedly be associated to the measure of individuals utilizing the internet banking and mobile banking services to pay their bills, which is the dominating factor on an average person's banking errands. The breakthrough techniques for reaching customers are becoming less expensive and less demanding than the traditional methods (Coiera, 2000) (Magatef & Tomalieh, 2015) (Wright, 2017).

The effect of digitalization on the Nigerian financial sector and its services actually goes past retail and client applications and services, it also incorporates all components of the Nigerian financial sector's services and production processes. It also expands the need for promptness and customized services and products, which also put the Nigerian financial sector under the demand of meeting customers' requests with minimal effort, convenient approaches to transfer cash, investment and borrowings.

Digitalization of the Nigerian commercial bank has brought about new models in businesses, that is new ideas with regards to development and improvement in various areas, from mobile banking to financial transactions and internet banking. This has continued to grow and supplant the conventional banking services to the customers through innovative technologies to meet the developing complex necessities and challenges of globalization. The Nigerian banking and financial sector have experienced radical changes and improvement over the last few years and is in a consistent state of development (Gabor and Brooks, 2016; Abbasi and Weigand, 2017).

It is an obvious fact that the performance of an organisation is measured by how well customers are satisfied with products or services that are being offered as a result of their persistent patronage (Khadka and Maharjan, 2017). In the above premise, how can one justify the challenges that customers still face with banks in carrying out regular banking transactions? The Nigerian commercial banks may have digitalized their processes, but there are still several limitations being experienced by customers. Customers are still limited a great deal as they process their daily banking transactions such as still filling physical forms to sort out issues that ought to be have been attended to via a digital process. Due to this, one will still find lots of queues within the halls of commercial banks waiting to be attended to. With the effect of the cashless policy in 2017 by the Central Bank of Nigeria (CBN) and other similar policies to encourage digitalization, one will still wonder why this limitation is still lingering as most commercial banks have either adopted or adapted digitalizing their processes making the enormous investments on the required IT infrastructure and digital technologies to be in vain (Nigeria Today, 2017).

The main objective of this study is to investigate digitalization process and performance of commercial banks in Nigeria. More specifically, the study explores the extent to which digitalization process of banking services relate to the performance of commercial banks in Nigeria and investigates the relationship between product innovation and the performance of commercial banks in Nigeria.

2. Review of relevant literature

The process of digitalization in commercial banks 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 activity of digitalization.

Editing, Access and Maintenance: this involves checking through the already digitized documents to avoid errors, making the access points 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.

There is no doubt that the digitalization of services offered by commercial banks has brought about a lot of positive influence on their respective clients or customers even the performance of the banks. Some of these influences include the following:

The process of inculcation of digital technologies into service provision in commercial banks has brought about a drastic reduction in the level of poverty (Mukherjee, 2017) (Naseem, 2017) (Maxima & Kim, 2018). Bank accounts can be opened without the prospective customer being physically in the bank simply because the process of digitalization has allowed for mobile communication in the financial system (Nyangosi, Nyangau, Nyariki, and Nyangau, 2014; Happiest Mind, 2014; Piirainen, 2016; Ortstad and Sonono, 2017). Customers are encouraged to open bank accounts because they are aware that with the click of a mouse or the use of mobile devices, they can carry out bank transactions; rather than having to go through the time consuming and stressful experiences at the banks and other financial institutions. In a survey conducted by Harigaya (2016), it was revealed that *“approximately 30% of time was saved during financial deposits and approximately 70% of time was saved during withdrawal as a result of the digital transformation in financial institutions.”* The ease of access to commercial banks as a result of digitalization has in turn increased the amount of savings made and in the long run reduced the level of poverty (Gonzalez-Paramo, 2017). This point was further corroborated by Abbasi and Weigand (2017), noting that there was a gargantuan hike (700 million) in the number of people having accounts between the years 2011 and 2014.

The digitalization process of commercial banks has also led to better provision of banking services. With the utilization of information and communication technologies, the level of banking services offered to clients are more efficient and effective. Customers' details and transactions are easily created, stored and retrieved stored on a database. This helps to control the level of paper work that commercial banks have to handle. The process of opening accounts for new customers, prospective customers' evaluation process for new accounts and loan process has been made very easy, effective and efficient as a result of the digital transformation (Gonzalez-Paramo, 2017).

The level of comfort and convenience in the process of financial transactions derived as a result of digitalization is incontestable. The commercial banks tend to perform better with the process of digitalization. They make use of ICT devices and gadgets which offers better comfort and convenience to them without jeopardizing the quality of service offered (Harigaya, 2016). For instance, the use of computer systems to confirm payer and payee details (name, passport photograph,

etc.) when transactions are made helps performance, reduces errors and in the long run heightens efficiency. Digitalization has also brought about innovative services such as online banking, online purchase, provision of Automated Teller Machine services, internet transfers, mobile banking, etc. (Forest and Rose, 2015) and evidently seen in (Akinbode, Adegbuyi, Kehinde, Agboola, & Olokundun, 2019). On the part of the customer, they obviously take advantage of the privilege of carrying out transactions from the comfort of their homes, offices and even in transit using mobile banking and internet banking. Harigaya (2016) also averred that the utilization of digital technologies has provided a stable platform for cheap and speedy purchase of goods and services thereby gradually transforming positively the payment landscape globally.

Customers and clients are seen as the core of the establishment of commercial banks and therefore the manner in which the provided financial services are communicated to customers cannot be taken with levity. The process of digitalization has brought about better level of efficiency in the customer relationship aspect of commercial banks in Nigeria and in the long run this boosts the level of sales and revenue of the banks. This was reiterated by Carletti (2017) whose research revealed that *“the institutions that adopted an effective digitalization strategy were able to increase their sales and revenue by 4% to 16% through the instrumentation of enhanced customer relationship.”* Therefore, banks can now have better, faster, cheaper and more effective means of communicating with their clients. Some of these communication channels include using text messages, e-mails, phone calls and social media chats.

The digitalization process carried out by commercial banks also enhance the process of record keeping. Records are better organised and stored on computer systems and can easily be retrieved when needed. Records as old as possible can easily be retrieved with the click of a mouse unlike when activities in the banks were not digitized.

It is however important to note that despite the positive influence digitalization has on the performance of commercial banks some drawbacks are still being experienced. A common challenge is the increase in the level of cyber frauds and cybercrimes carried out in the commercial banks. Some individuals who are technology savvy sometime use mobile devices and online platforms to carry out theft and fraud. Some employees in commercial banks also take advantage of their access to information contained in the database of the banks and easily do some manipulations of the computer systems to carry put frauds which may not be detected.

Another effect the digitalization process of commercial banks has on performance is the negative effect of data protection and data loss. Most gathered data on transactions, customers' records, loan records and so on are stored mostly on computer systems or other digital storage devices which are prone to virus or harmful attacks and in the long run may lead to data loss if not solved quickly to remedy it (Gonzalez-Paramo, 2017). This is a negative effect that could affect performance of commercial banks

3. Methodology

The study adopted the purposive method and simple random sampling was used to select 370 non-managerial employees from a commercial bank in Nigeria. A self-structured questionnaire was used as the major instrument for data collection. Out of 370 copies of the questionnaire administered 344 copies were found useful. The data collected for this study was subjected to descriptive statistical analysis using frequency count, inferential statistics. Pearson correlation was used to test the hypotheses. The data was analysed using Statistical Package for Social Science (SPSS) version 25. In a similar study conducted by Mueni (2017), he used SPSS to analyse how digitalization influence Kenyan commercial banks.

4. Analysis and discussion

Research Question 1: What is the extent to which digitalization process of banking services relate to the performance of commercial banks in Nigeria?

Table 1 showed a highest proportion of the respondents with mean and standard deviation score $\bar{x}=3.95$; $SD=0.735$ indicated that Nigerian commercial banks' staff actively use their expertise in big data, for instance when developing new products or business models, As parts of digitalization process, majority ($\bar{x}=3.85$; $SD=0.790$) of the respondents also indicated that commercial banks in

Nigeria integrated digital channels or technologies such as mobile and social media, to communicate products and services to their users. A large proportion of the respondents $\bar{x}=3.75$; $SD=0.764$ agreed that that commercial bank extensively deployed the most recent digital options in order to automate their routine processes. This finding is in line with the report of Kamra (2015) who stated that digitalization of commercial bank is far beyond mere moving from old banking system to a digital system. It is a fundamental transformation of how commercial banks relate with and meet client's needs. An effective digitalization starts with recognizing digital patron behaviour, dislikes, likes, desires, choice, favourites, spoken and unspoken needs, etc.

Table 1: Frequency Distribution of Digitalization process of banking services of commercial banks in Nigeria

DIGITILIZATION PROCESS	SA		A		U		D		SD		N	Mean	Std. Dev.	Rank
	N	%	N	%	N	%	N	%	N	%				
Item 6	68	19.8	209	60.8	50	14.5	17	4.9	0	00.0	34	3.95	.735	1 st
Item 4	85	24.7	122	35.5	137	39.8	0	00.0	0	00.0	34	3.85	.790	2 nd
Item 5	34	9.9	225	65.4	51	14.8	34	9.9	0	00.0	34	3.75	.764	3 rd

Source: Researchers' Field Survey

Research Question 2: What is the level of relationship between product innovation and the performance of commercial banks in Nigeria?

Table 2 sought to the level of product innovation in commercial bank surveyed. The findings revealed that employees of commercial bank surveyed regularly contribute ideas for digital products ($\bar{x}=4.05$; $SD=0.690$), majority indicated that the institution have expanded her products and services with digital services ($\bar{x}=4.04$; $SD=0.741$) while $\bar{x}=3.99$; $SD=0.773$ indicated actively inclusion of customers in the development of new ideas for digital products as parts of innovative method adopted. The finding of the study shows that some commercial banks in Nigeria are already embracing product innovation. This corroborates Marous (2019) who opined that today commercial banks are strategically positioning themselves for the future by changing their cultures and embracing technological innovations in order to deliver new innovative products and services which are considered as their top priority. Kamra (2015) parts of product innovation are meeting bank customers' needs on the move, anytime anywhere. This has become a mean of survival among commercial banks in this competitive marketplace place.

Table 2: Frequency Distribution of Product Innovation in the Nigerian Commercial Banks

PRODUCT INNOVATION	SA		A		U		D		SD		N	Mean	Std. Dev.	Rank
	N	%	N	%	N	%	N	%	N	%				
Item 2	86	25.0	188	54.6	70	20.3	0	00.0	0	00.0	34	4.05	.690	1 st
Item 1	102	29.7	155	45.1	87	25.3	0	00.0	0	00.0	34	4.04	.741	2 nd
Item 3	84	24.4	190	55.2	53	15.4	17	4.9	0	00.0	34	3.99	.773	3 rd

Source: Researchers' Field Survey

Test of hypotheses

H_1 : Digitalization process of banking services does not relate to the performance of commercial banks in Nigeria.

Table 3: Correlation Matrix between Digitalization Process and the Performance of Commercial Banks in Nigeria

Variable	Mean	Std. Dev.	N	R	P	Remark
Digitalization Process	3.8517	0.57958	344	.114*	.034	Sig. (2-tailed)
Commercial bank Performance	4.4874	0.42658				

*. Correlation is significant at the 0.05 level (2-tailed).

Results in Table 3 revealed that there was mild significant and positive relationship between digitalization process and commercial bank performance ($r = 0.114^*$; $p < .05$). This implies that effective digitalization process of commercial bank activities led to improved performance of commercial banks in Nigeria.

H₂: There is no relationship between product innovation and the performance of commercial banks in Nigeria.

The hypothesis sought to determine the significant relationship between product innovation and the performance of commercial banks in Nigeria. The findings revealed that there is a small positive significant relationship between product innovation and performance of commercial banks in Nigeria at $r = 0.186$; $p < 0.001$. This implies that the more commercial banks innovate their products the more the level of excellence performance as shown in Table 4.

Table 4: Correlation Matrix between Product innovation and the Performance of Commercial Banks in Nigeria

Variable	Mean	Std. Dev.	N	R	P	Remark
Digitalization Process	3.8517	0.57958	344	.186**	.001	Sig. (2-tailed)
Product Innovation	4.0271	0.62237				

** . Correlation is significant at the 0.01 level (2-tailed).

5. Conclusion and recommendation

Based on the findings of this study, it is therefore concluded that digitalization has a long way in affecting the performance of commercial banks in Nigeria. Even though the relationship is small, yet it is very significant indicating that commercial banks in Nigeria need to pay more attention on the digitalization processes of banking services to suit the demands of customers. If the digitalization processes of banking services are perfected, the issue of customers still visiting the banking halls and waiting on long queues to solve small issues will be a thing of the past. The essence of digitalizing the processes of banking services is to reduce waiting time, break bottlenecks and make transactions faster. If this is adequately and correctly implemented, then digitalization process should have a larger significant positive relationship with performance of commercial banks in Nigeria *ceteris paribus*.

Finally, still on the findings of this study, it is concluding to state that product innovation affects the performance of commercial banks in Nigeria. Though the result showed a small positive relationship between product innovation and performance of commercial banks, the management of Nigerian commercial banks can devote more to the enhancement of their various products and services. This is not to say that there are not enough banking products and services, but the very current ones should be worked upon and improved to meet the needs and demands of customers so as to avoid them to consistent visit to commercial banks and waiting in queues to be attended to.

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