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Information Technology Management (ITM) and Organizational Productivity in Nigeria: A Case of Listed Commercial Banks

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Abstract*: In contemporary organizational settings, management of information technology occupies a major place in influencing organizational productivity; however, whether information technology management will positively or negatively affects organizational productivity (particularly service delivery time to customers and efficiency in output) of commercial banks has been under-researched. In view of the above, this study examined the link between information technology management and productivity of commercial banks in South-East, Nigeria. Survey design was used and four hundred (400) questionnaires were administered to employees of four (4) commercial banks in South-East, Nigeria. Data obtained were analyzed via descriptive and inferential statistics. In specific, the multiple regression result indicated a positive and significant link between information technology management and organizational productivity (service delivery time to customers and efficiency in output). On the basis of the findings, it was recommended that management of banks should further increase investments on information technology so as to make them improve service delivery time to customers and efficiency in output. Furthermore, banks should have self-enabled services, automate all critical processes of their operations in order to realize increased efficiency.*

Keywords: Information technology management; Organizational productivity; Service delivery time; Efficiency in output

1. INTRODUCTION

Organizational productivity has always been a topical issue in the management literature covering various aspects like efficiency, competitiveness, relevance and financial viability. Adat and Noel (2023); Ally (2019); and Loveman (2022) contended that organizational productivity depicts the way in which organizations strive to reach their goals and how they manage to reach the goals. Over the years, commercial banks in Nigeria have witnessed dramatic changes in their operations due to several bank reforms coupled with the tremendous growth in the number of information technology(IT) devices used by bank employees and customers (Adiele, Grend & Chinedu, 2022)

The management of IT by commercial banks became necessary to reduce the duration in processing critical tasks, elimination of repetitive tasks, increasing service and product qualities as well as harnessing efficiency in their output (Ahmed, 2021). Researchers have empirically shown that investments in ICT would enhance organizational productivity, management capabilities and comparative advantage. Aiyesehinde and Aigbavboa (2021) found that the use and management of IT results to increased organizational productivity, however there are other studies (Alpar & Kims, 2021; Gagnon, 2021; Blili & Raymond, 2023) indicating that IT management leads to enhanced organizational productivity.

Given the plethora of empirical studies on the research theme, empirical studies on IT management as determinant of organizational productivity using commercial banks in the South-East, Nigeria in a single is unobtainable in the literature; thus there is literature gap on the relationship between IT management and organizational productivity in South-East States, Nigeria. Hence, there is a need to find out if IT management positively and significantly affects organizational productivity (using two productivity measures service delivery time and efficiency in output).

2. REVIEW OF LITERATURE

2.1. Information Technology Management

Information technology (IT) refers to anything linked with computing technology like the internet, networking, hardware, software or the people that work with these technologies. According to Bird and Lehrman (2023) IT is the hardware, software, telecommunications, database management and other information-processing technologies used in storing, processing and delivering information. IT is predominantly employed to assist managers with direct control over business functions and other resources (see Galliers, Merali & Spearing, 2020). Thus, IT is one of the key innovations that are frequently implemented to assist in this process (Heinz, 2022).

Herweijer, Combes, Jackson, Johnson, McGargow and Bhardwaj (2020) asserted that IT management is believed to facilitate communication and improve integration, which then enhance productivity (service delivery time and operational efficiency).

Organizations have traditionally contributed significantly to a country's future, however, to continue this work effectively, they need not only the technology but the skills to use, gain value from applications and the management of the technologies (Herweijer, et al, 2020).

In Nigeria, commercial banks have been ahead in adopting IT and have been relatively slow to efficiently engage in IT management. According to Hughes, Dwivedi, Misra, Rana, Raghavan and Akella (2019), most organizations adopt the conventional (manual) method rather than engaging in the use and application of modern technologies. There are those factors which influence IT management, such as not having suitable IT managers or personnel that can help organizations engage in efficient IT management (Hughes, et al, 2019)

Commercial banks for instance perceive ICT as a vital tool for optimizing operations. Heinz (2022) notes that IT management provides powerful strategic tools when properly used could bring great advantage in strengthening operational efficiency, productivity, customers' base, competitiveness, among others. Thus, it implies that IT management can facilitate communication and exchange of information and/or facilitating knowledge sharing between various departments/units in an organization, hence leading to increased organizational productivity.

2.2 Organizational Productivity

Organizational productivity is a fundamental measure in the management literature. While major success stories exist, so do equally impressive failures (Bhattacherjee & Hirschheim, 2017). The lack of accurate quantitative measures for the output and value created by IT has made information systems manager's job of evaluating organizational productivity cumbersome. Organizational productivity according to Bhattacherjee and Hirschheim (2017) is the capability of organizations to effectively and efficiently use all available resources to become productive. In the same vein, Harris and Katz (2021) saw organizational productivity as not only linked with outcomes but relates with employees' behaviour, and activities that organizations use to realize their goals in the most efficient way.

Remarkably, organizational productivity is a vital facet in strategic management as it aids organizations in planning their processes in order to make them understand their goals, what needs to be done, why and how it should be done (Adusei & Tweneboah-Koduah, 2019). In the literature, several measures of organizational productivity have emerged; however, this study used two of the measures: service delivery time and efficiency in output. More recently, researchers began to find positive and significant relationships between IT management and various organizational productivity measures. For instance, Diewert and Smith (2022); Gagnon (2021); Galliers, Merali and Spearing (2021) found that IT management significantly and positively affects organizational productivity.

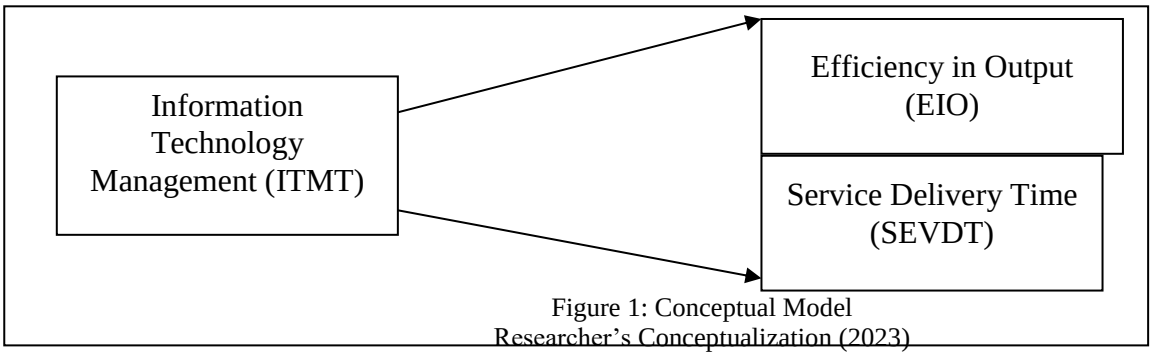

Figure 1: Conceptual Model
Researcher's Conceptualization (2023)

Figure 1 shows the conceptual model of the relationship between information technology management (ITM) and organizational productivity (measured using efficiency in output and service delivery time).

3. MATERIALS AND METHODS

The survey design was employed in obtaining the respondents' perception on information technology management (ITM) and organizational productivity among commercial banks in South-East, Nigeria. The population of study comprised employees of twenty-four(24) commercial banks, out of which one hundred (100) employees each were sampled from four (4) commercial banks, totalling four hundred (400) respondents.

Questionnaire was the major instrument of data collection and was designed on a scale of strongly agree, agree, strongly disagree and disagree. The designed questionnaire was administered on respondents and test-retest method was done on forty (40) employees

of commercial banks in South-East who are not part of the research. Data obtained were correlated via Cronbach alpha. Table 1 showed the Cronbach alpha reliability result:

Table 1: Result of Cronbach Alpha Coefficient

Paremeter(s)	Coefficients	Outcome(s)
Information Technology Management	0.80	Very Reliable
Efficiency in Output	0.73	Very Reliable
Service Delivery Time	0.76	Very Reliable

Source: Researcher's Computation (2023)

The results presented in Table 1 showed that the items were reliable since they beat the 0.05 benchmark as recommended by Cronbach (Egberi & Okpako-Uyeh, 2011; Egberi & Osio, 2019; and Egberi & Ighoroje, 2021). The independent variable is information technology management while the dependent variable is organizational productivity (which was measured using efficiency in output and service delivery). In line with the above, the following multiple regressions were estimated:

$$ORGPROD = f(ITMT) \quad - \quad \text{eq. 1}$$

$$ORGPROD_i = a_0 + \delta_1 ITMT_i + \varepsilon_i \quad - \quad \text{eq. 2}$$

Where: ORGPROD is a multi-dimensional variable consisting efficiency in output and service delivery time; ITMT is information technology management, δ_1 is regression coefficient; ε is error term while i is individual respondents of the selected commercial banks companies. Data gathered were analyzed via descriptive statistics (mean, standard deviation, minimum and maximum values, Pearson correlation) and inferential statistics (multiple regressions).

4. EMPIRICAL RESULTS

Table 2: Descriptive Statistics Result for Information Technology Management (ITMT) and Organizational Productivity (Efficiency in Output – EIO; and Service Delivery Time –SEVDT)

Variables	Mean	Std. Dev.	Min. Val.	Max. Val.
Efficiency in Output	2.0040	.0233	1	4
Service Delivery Time	2.0122	.0349	1	4
Information Technology Management	2.1094	.0477	1	4

Source: Researcher's Computation (2023)

Table 2 showed the descriptive statistics result on information technology management (ITMT) and organizational productivity dimensions (EIO and SEVDT) of the selected commercial banks in South-East, Nigeria. The results revealed that EIO and SEVDT and ITMT scored above 2.0 cut-off of mean, indicating that the items on ITMT are vital metrics for assessing productivity (SEVDT and EIO) among the commercial banks. The descriptive results are clear indications that to an extent ITMT affects the productivity of commercial banks in Nigeria.

Table 3: Pearson Correlation Result for Information Technology Management (ITMT) and Organizational Productivity (Efficiency in Output – EIO; and Service Delivery Time –SEVDT)

Variables	EMJOBSAT	GENDNEP	ETHNNEP
ITMT	1.0000		
EIO	.0242	1.0000	
SEVDT	.0219	.0490	1.0000

Source: Researcher's Computation (2023)

Table 3 showed the correlation result for ITMT, EIO and SEVDT among the commercial banks; the result revealed that the correlation coefficients are 0.242 (EIO), and 0.219) SEVDT). An indication that that there is positive relationship between ITMT, EIO and SEVDT; impliedly, information communication technology management positively affect the productivity of commercial banks. In the views of Okoro(2016); Okoro and Ekwueme (2021), correlation coefficients above 0.5 suggests absence of multicolinearity problem; owing to the above assertion, the multiple regression results were presented (see Table 4)

Table 4: Multiple Regressions Result for Information Technology Management (ITMT) and Organizational Productivity (Efficiency in Output – EIO; and Service Delivery Time –SEVDT)

Estimator	Predictors	t-values
R-Squared	.8169	

R-Squared Adj.	.800	POB = 9.11
F-Value	17.40	t-Prob. 0.000
Prob. F	0.000	

Source: Researcher's Computation (2023)

Table 4 showed the multiple regression result for ITMT and organizational productivity dimensions (Efficiency in Output – EIO; and Service Delivery Time –SEVDT) among the selected commercial banks in South-East, Nigeria. In Table 4, the R^2 is .8169, indicating that ITMT explained 82% of the systematic variation in EIO and SEVDT of the selected commercial banks. Thus, the model of ITMT and ORGPROD (EIO and SEVDT) offers a good fit to the study's dataset.

Besides, the f-value is 17.40; the result revealed that ITMT significantly affects EIO and SEVDT. The implication of the result is that information technology management plays a fundamental role in influencing organizational productivity (both efficiency in output and service delivery time). In addition, the t-value indicates that ITMT positively affects EIO and SEVDT among the commercial banks in South-East, Nigeria. Findings of the study corroborates with the results of Diewert and Smith (2022); Gagnon (2021); and Galliers, Merali and Spearing (2021) who revealed that information management significantly and positively affects organizational productivity.

5. CONCLUSION AND RECOMMENDATIONS

In modern organizational settings (commercial banks inclusive), the management of information and communication technology (ICT) occupies a major place in influencing organizational productivity; however, whether information technology management will positively or negatively affect organizational productivity (particularly service delivery time and efficiency in output) of listed commercial banks in South-East, has been under-researched in the literature.

Given the identified literature gap, this study was carried out with the view to assessing the relationship between information technology management and the productivity of commercial banks in Nigeria using a sample of four hundred (400) employees of four (4) commercial banks in South-East, Nigeria. Data obtained were analyzed using descriptive and inferential statistical tools.

Findings showed that there is a significant and positive relationship between information technology management and organizational productivity. In line with the findings of the study, it was recommended that management of commercial banks should further increase investments on information technology so as to make them improve service delivery time to customers and efficiency in output. Also, commercial banks should have self-enabled services, automate all critical processes of their operations in order to realize increased efficiency.

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