



Extent of Ict Usage and the Effect on Employee Performance in Nigerian Civil Service

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ABSTRACT

The performance of the Nigerian civil service in recent times has been adjudged to be unimpressive. This is because of the poor quality and the inadequate delivery of public goods and services such as health care, electricity, education, and road infrastructure. The causal factors of the poor performance of the civil service in Nigeria include the non-availability of information and communication technology (ICT) facilities, the low deployment of ICT, and the low number of ICT skilled staff within the civil service. This study therefore investigated the extent of ICT usage and the effect on employee performance in the Nigerian civil service. The study adopted the cross-sectional survey design. A sample of 1007 federal civil servants selected using total population sampling technique constituted the study participants. A structured questionnaire with a reliability co-efficient estimate of 0.742 was used to generate the quantitative data for the study. The Statistical Package for Social Sciences (SPSS) aided the analysis of data. The study found that there is a significant positive correlation between the extent of ICT usage and the level of employee performance in the Nigerian federal civil service. Based on the findings, it is recommended that the Nigeria government should enhance the ICT base of the civil service in order to improve the institution's performance in terms of public service delivery.

KEYWORDS: Employee Performance, Federal Civil Service, Information and Communication Technology, Public Service Delivery

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I. INTRODUCTION

Technology has revolutionized our world and permeated every aspect of human life; changing the way we socialize, communicate, trade, learn, and work. Technology has aided the modernization of cities and the sustenance of human lives through its application in the various spheres of human endeavour. Technology has been deployed to deliver and enhance agriculture, energy, transport, industrial, and information and communication, to mention a few. This study focused on the use and benefits of information and communication technologies, with particular emphasis on the effects on the work performance of government employees.

Information and communication technology (ICT) is a broad term that describes technologies that provide access to information through telecommunications [1]. ICT refers to technologies that provide the capability to collect, process, store, and exchange data. ICT includes products that convert, duplicate or receive electronic information. Technically, ICT encompasses all the technologies used to handle telecommunication, broadcast media, management information systems, audiovisual processing and transmission systems, and network-based control and monitoring functions [2]. Examples of ICT are: computers, cell phones, internet, modems, wired and wireless networks, photocopies and fax machine.

The benefits of ICT are enormous. ICT, for instance, helps to facilitate transactional and electronic banking services which include online banking, automated teller machines, credit and debit card facilities, airline ticketing and reservations [3]. With the aid of ICT, people can shop and sell online, track the delivery of goods, explore medical, legal and finance knowledge, make reservations and pay for flight and accommodation, etc. The benefits of technology include: aiding advances in engineering; aiding space and air travels; aiding water travel and deep sea exploration. On the other hand, ICT has been used for some negative purposes such as facilitating the destruction of lives and cities using unmanned drones, guided missiles, nuclear and biological weapons.

An important aspect of social life which has been radically transformed by ICT is the world of work. ICT has revolutionized the dynamics of work and the workplace in many respects ranging from innovating work styles and work preferences, to altering production process and creating new jobs. ICT is now considered a critical part of the workplace upon which organizational success or failure depends. Many countries across the globe are leveraging the advances in information and communication technologies (ICT) to enhance the productivity of their private and public sector workers. The performance of private and public sector employees in technologically advanced countries continues to improve - evidenced by the growth of these countries' gross domestic product (GDP) and the high quality of public services such as primary healthcare and public school system - mainly because of access to information for research purposes and decision-making.

Unfortunately, the same cannot be said of many developing countries in Africa like Nigeria, where most public servants are still cut off the opportunities provided by the advances in ICT [4]. Most public offices in Nigeria can only boast of one or two computers, often without internet connections; whereas, ideally, each staff should have at least one computer with internet access. Worse still, in most of the offices, only one or two staff can operate computers. Furthermore, Nigeria is still grappling with the problem of energy supply, a critical ICT infrastructure. These conditions, no doubt, have had adverse effect on the speed, quality, and cost of service delivery. Scholars, for example, Olufemi [5], Owolabi, Aderibigbe and Osunrinade [6], and James [7], have over the years investigated the adoption, availability, usage, and effect of information and communication technologies (ICTs) among civil servants in Nigeria. However, these studies were conducted in state ministries using relatively small samples. This present study differs from previous studies because it investigates the extent of ICT usage and its effect on employee performance in the Nigerian federal civil service.

II. OBJECTIVES OF THE STUDY

The main objective of this study is to investigate the effects of the Nigerian government's information and communication technology (ICT) policy on the civil service. The specific objectives of this study are as follows:

1. To investigate the extent of ICT usage in the federal civil service, Imo State, Nigeria
2. To examine the effect of the extent of ICT usage on employee performance in the federal civil service, Imo State, Nigeria

III. RESEARCH HYPOTHESIS

The following research hypothesis has been formulated to guide the study.

H1- There is a significant positive relationship between the extent of ICT usage and the level of employee performance in the federal civil service, Imo State, Nigeria.

IV. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

4.1 Information and Communication Technology Policy in Nigeria

Prior to the year 1999, public sector organizations in Nigeria were relying completely on old-fashioned methods (for example, manual filing, handwritten memos, etc.), and analogue technologies (such as typewriter, telephone, stencil etc.) to carry out their operations. This scenario contributed immensely to the frustrating slow pace of service delivery and lethargic policy and program implementation which in turn hampered the development of the nation. In response, the Obasanjo-led Administration in the year 2000 initiated its information technology (IT) policy known as the Nigerian National Information Technology Policy (NNITP) which was eventually approved by the Federal Executive Council in March 2001 [8]. The intent for formulating NNITP is to launch Nigeria into the Information Age. In terms of governance, the NNITP was designed to be the major driving force to re-engineer and rapidly transform government to interface with the needs of the citizenry by establishing transparent Government Wide Information System (GWIS) at national, state and local government level [9]. The plan is that the policy would help to reduce bureaucracy, increase efficiency, maximize productivity and reduce the cost of service delivery.

The main strategy adopted to accomplish the Obasanjo-led Administration's IT policy was to establish the National Information Technology Development Agency (NITDA). The Agency was charged with the responsibility of implementing, regulating, monitoring, evaluating and verifying the progress of the IT policy [9]. The specific objectives of the NITDA include: to ensure that information technology resources are readily available to promote efficient national development; to improve accessibility to public administration for all citizens; to enhance planning mechanisms and forecasting for the development of local infrastructure; and, to re-engineer and improve urban and rural development schemes [8]. The other strategy adopted to realize the IT policy was the establishment of a National Information Technology Development Fund (NITDEF) to be managed by the NITDA under the supervision of the Federal Ministry of Science and Technology [9].

4.2 Benefits of ICT in the Public Sector

The advances in information and communication technology (ICT) in last two decades have helped to transform the system of Public Administration [10]. According to Nam [11], ICT driven processes increase the efficiency of government administration. ICT is now considered a means for achieving good governance and enhancing the quality of service delivery. Countries across the globe, particularly the developed ones, are leveraging information technology (IT) for economic growth and national development. No doubt, informational technology is essential for national survival and sustainable development in a rapidly changing global environment [9].

ICT encourages transformation from the traditional bureaucratic paradigm that emphasizes standardization, departmentalization, and operational cost efficiency to the e-government paradigm that emphasizes coordinated network building, external collaboration, and efficient customer service [12]. ICT has for instance, enabled improvements to government services such as voter registration, renewal of driver's licenses, and online voting [13]. The benefits of ICT include facilitating interaction among government agencies and, between governments and other governance stakeholders namely citizens, business owners, and government employees. These interactions help to enhance efficiency, performance, and output [12], and to engender transparency, accountability, citizens' participation, collaboration, and collective aspiration.

4.3 Empirical Review

Longe, Boateng, Longe and Olatubosun [14] investigated factors affecting adult acceptance of ICT applications in Southwestern Nigeria. Their study was based on the Perceived Ease of Use (PEU) and Perceived Usefulness (PU) constructs. Their study sample consisted of 400 respondents selected from among civil servants in Ministries, private sector workers, self employed citizen, undergraduate and postgraduate students. The collected data were analyzed using descriptive statistics and chi-square (X^2) to test for differences between groups. Their findings suggest that the fear of using ICT is subsumed by the benefits accruable from usage.

Olufemi [5] studied the impact of computer use on the efficiency of civil servants in Ekiti State, Nigeria. The sample consisted of 58 civil servants who were randomly selected. A 20-item structured questionnaire was used for data collection. The T-test statistical analysis was used to analyze the collected data. The findings showed, among others, that there was no significant difference in the impact of computer on the efficiency of junior and senior civil servants. The findings also revealed there is no significant difference between the computer operators and non-computer operators in the use of computer in service delivery.

Owolabi, Aderibigbe and Osunrinade [6] investigated the adoption, usage and availability of information and communication technologies (ICTs) among civil servants in South Western Nigeria. The study adopted the Diffusion of Innovation theory (DOI). The study was carried out over a period of five months between May and September 2013. The sample size comprised 648 respondents randomly selected from the six ministries namely: Ministry of Agriculture, Ministry of Education, Ministry of Health, Ministry of Information, Ministry of Finance, and Ministry of Commerce, who duly filled and returned copies of the research questionnaire. Their findings include, that ICTs have proved to be tools in increasing work productivities in government ministries, and that ICTs have helped the reduction in time wastage and reduction in cost.

James [7] investigated the effect of information and communication technology on the Public Sector Secretaries in Bayelsa State, Nigeria. The primary data for the study were collected through a 35-item structured questionnaire. The analysis of data was based on ninety-five copies of the questionnaire. Econometric models of multiple regression and diagnostic test were used to analyze the primary data. The study found that the usage of computers, telecommunication and video techniques positively and significantly related to the productivity of Public Sector Secretaries in Bayelsa State, Nigeria.

Palvalin, Lonnqvist, and Vuolle [15] analyzed the impacts of ICT on knowledge work productivity. They examined how information and communication technology (ICT) can be utilized to improve productivity in the context knowledge-intensive services. A case study approach was adopted to examine the actual productivity impacts produced by a new ICT service. The results show that ICT can be used to eliminate non-value-adding tasks or make them more efficient, thus giving time for knowledge workers' most important tasks. The result of study suggests ICT can also result in improving employee welfare through transforming the content of work by deleting unimportant activities. The researchers concluded that none of the potential ICT-based productivity benefits are automatic, but instead, depend on how the ICT service in question is implemented and utilised in the given context.

4.4 Theoretical framework

This study is anchored on the Perceived Organizational Support (POS) theory, an offshoot of organizational support theory (OST). According to OST, employees view their organization as having a disposition to view them favourably or unfavourably as reflected in the treatment it provides them [16]. Eisenberger et al. [16] claim that employees [over time] develop a general perception concerning the extent to

which the organization values their contributions and care about their well-being [17]. This conception led to the birth of perceived organization support theory.

Perceived organizational support (POS) affects both employees' intrinsic and extrinsic motivation ([18]. Intrinsic motivators, such as, feeling of job security, recognition and appreciation by co-workers and the organization, and opportunities for career growth, contribute to employees' social, emotional, and psychological well-being and job satisfaction. Extrinsic motivators, which include good and fair salary, fringe benefits (for example, free medicals and housing) and the availability of work tools such as, computers, internet, and telephone, impact employees' performance. In the words of Mulder [18], the right facilities, good and up-to-date tools are vital components of working conditions that increase perceived organizational support. Birtch, Chiang, and Van Esch [19] suggest that when employees believe that an employer has fulfilled its obligations in the employment exchange, such as the provision of appropriate job resources, feelings of psychological contract fulfillment are engendered, which in turn promote positive outcomes, such as job satisfaction and organizational commitment.

Perceived organizational support theory is rooted in social exchange theory (SET) in that it explains employee-organization relationship as an economic (market) transaction involving the exchange of effort and reward, tangible or intangible. According to SET, the primary goals for each agent in the exchange are to maximize benefits and to minimize cost. Social exchange theory extends "beyond market transactions to exchanges of symbolic and other [non-tangible] resources such as social approval, security and love" [20], which are vital to an employee's socio-psychological well-being and commitment to the organization.

In line with the Social exchange perspective, perceived organizational support (POS) theory holds that employees' commitment to the organization is strongly influenced by their perception of the organization's commitment to them. According to Eisenberger, Huntington, Hutchison & Sowa [16], POS is assumed to increase the employee's affective attachment to the organization, and his or her expectancy that the greater effort toward meeting organizational goals will be rewarded [16]. Eisenberger, Fasolo, and Davis-LaMastro's [21] studies suggest a positive relationship between perceived organizational support and effective attachment, performance outcome expectancies, and the constructiveness of anonymous suggestions for helping the organization. Mulder [18] claims that a high POS leads to positive behavioural outcomes such as positive active and loyal work attitude, high degree of employee commitment, greater involvement, and improve performance.

According to Kurtessis, Eisenberger, Ford, Buffardi, Stewart and Adis [17],

employees' perception of organisational support is influenced by their attributions about the organisation's intent behind their receipt of favourable [or unfavourable] treatment. In turn, POS initiates a social exchange process wherein employees feel obligated [or not] to help the organization achieve its goal. (p.2)

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V. METHODOLOGY

This cross-sectional survey investigated the extent of ICT usage and the effect on employee performance in the federal civil service Imo state, Nigeria. A total survey of the entire study population of 1086 federal civil servants in 32 Federal establishments, however, only 1007 federal civil servants responded to the research instrument. Therefore, primary data were generated from 1007 respondents, representing 92.7% of the study population. A structured questionnaire with a reliability coefficient estimate of 0.742 was used to collect primary (quantitative) data for the study. The statistical package for social sciences (SPSS) aided the analysis of survey data and the test of research hypothesis with Pearson's *r* correlation coefficient statistic. The data analysis contained measurement and correlation test of key variables of study. The independent variable, *extent of ICT usage*, was measured in terms of the availability, deployment and use of basic ICT facilities, and the dependent variable, *employee performance*, was measured in terms of work outcomes (such as, meeting work deadline, quantity and quality of work output), using descriptive statistic.

VI. DATA PRESENTATION

Questionnaire items were framed and analyzed to determine the extent of ICT usage and the effect on employee performance in the federal civil service (FCS), Imo State. The data analysis revealed that the majority (36.5%) of the respondents indicated that federal civil servants have ICT facilities to perform their duties. However, a majority (42.2%) of the respondents stated that the ICT facilities were inadequate. When respondents were asked to describe the extent of ICT facilities usage in the Federal Civil Service in Imo State, 29.1% replied to a great extent, 11.9% indicated to a considerable extent, 28.2% said to a moderate extent, while 30.8% answered to a slight extent. In terms of the effect of ICT inadequacy, 50.9% indicated failure to meet deadline, 36.6% indicated low work output, 9% indicated poor quality of job, 2.4% indicated poor work accountability, while 1% indicated other effects.

VII. TEST OF HYPOTHESIS

H1- There is a significant positive relationship between the extent of ICT usage and the level of employee performance in Federal Civil Service, Imo State.

Table 1: Pearson's r Correlation Coefficient Test of Hypothesis One

		Extent of ICT usage	Employee performance
Extent of ICT usage	Pearson Correlation	1	.101**
	Sig. (2-tailed)		.001
	N	1007	1007
Employee performance	Pearson Correlation	.101**	1
	Sig. (2-tailed)	.001	
	N	1007	1007
**. Correlation is significant at the 0.05 level (2-tailed).			

Dependent variable: Employee Performance

Table 1 contains a correlation test of hypothesis four which states that, there is a significant positive relationship between the extent of ICT usage and the level of employee performance in the Federal Civil Service, Imo State. The correlation test result shows that there is a significant positive relationship (P -value = .001, $r = .101$) between extent of ICT usage and employee performance. Since the P -value is less than 0.05, the research hypothesis is accepted.

VIII. DISCUSSION OF FINDINGS

The specific objectives of the study were to investigate the extent of information and communication technology (ICT) usage, and to investigate the effect of the extent of ICT usage on employee performance in the Federal Civil Service, Imo State. The study found that the ICT facilities in the Federal Civil Service, Imo State are inadequate and slightly used. The study also found that the main effects of the inadequacy of ICT facilities are failure to meet deadline and low work output. The test of the research hypothesis which states that there is a significant ($p < 0.05$) positive relationship between the extent of ICT usage and the level of employee performance in the Federal Civil Service, Imo State, showed that the extent of ICT usage registered a significant positive correlation with employee performance ($r = .101$, $p = .001$). This result empirically substantiates the result of the study of James (2013) with regard to the association between the usage of ICT and the productivity (performance) of Public Sector Secretaries in Bayelsa State, Nigeria. These findings suggest that the extent of ICT usage is a determinant of the level of employee performance in the Nigerian Public Sector. This is in line with the postulations of POS theory that the provision of organizational support plays a major role in the performance of employees. In other words, the lack of essential work tools such as ICT facilities hinders employee morale, commitment and performance.

IX. CONCLUSION

The conclusion that can be drawn from this study is that the federal civil service lacks adequate information and communication technology (ICT) facilities. Yet, the available ICT facilities are slightly used. The inadequacy of ICT facilities has led to employee low work output and failure to meet work deadlines. Hence, it is pertinent that the federal government of Nigeria invests more in the provision of ICT infrastructure and training for its civil service in order to enhance the institution's performance. The provision and improved usage of ICT facilities would invariably lead to the improvement of employee performance in the federal civil service, and in turn, enhance the delivery of efficient public services to the citizens. Adequate and continuous investments in civil service ICT infrastructure (physical and human) would help to enhance the operational efficiency and agility of the federal civil service, a major prerequisite for the growth of the Nigerian economy.

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