Management

Impact of e-administration on employee productivity in state-owned tertiary institutions in rivers state

Samuel Amaehule

Department of Marketing, Faculty of Business Studies, Ignatius Ajuru University of Education, Port Harcourt, Nigeria

Correspondence Author: Samuel Amaehule

Received 19 May 2026; Accepted 22 Jun 2026; Published 2 July 2026

Published in Volume 1, Issue 2 (2026), pp. 01–06

Abstract

This study examines the correlation between electronic administration and employee performance in state-owned tertiary institutions in Rivers State, Nigeria, utilizing an explanatory survey research design. The study's sample consisted of 370 respondents from a total population of 5,109 academic and non-academic staff across four institutions: Ignatius Ajuru University of Education, Rivers State University, Kenule Beeson Saro-Wiwa Polytechnic, and Elechi Amadi Polytechnic. Data collection was achieved through structured questionnaires employing a five-point Likert scale. The analysis involved descriptive statistics for univariate data and Spearman Rank Order Correlation Coefficient through SPSS for hypothesis testing. Results indicated a significant positive correlation between electronic administration and employee performance. The study concludes that the integration of electronic administration significantly enhances job performance in these institutions, recommending ongoing upgrades of electronic administrative systems for improved communication efficiency and further performance enhancement.

Keywords: E-administration, Employees, Job performance, Tertiary institution

Introduction

Human resources are crucial assets for organizations, as they develop and optimize other resources such as material, financial, and technological assets. According to Dessler (2015), employees constitute a valuable capital form by bringing essential knowledge, skills, education, and expertise for an organization's success. The effectiveness of human resource utilization directly influences organizational survival, particularly in a rapidly changing environment, as highlighted by Kerning and Jaeger (1990), who associate organizational effectiveness with continuous employee performance enhancement and human potential development.

Employee performance is commonly evaluated through task completion metrics. For example, administrative staff can be assessed based on their capabilities to prepare annual reports, develop filing systems, or procure necessary resources, as stated by Lisa (2016). In contemporary workplaces, the integration of information and communication technology (ICT) significantly enhances performance, a practice known as electronic administration (e-administration). This form of administration promotes operational efficiency in both manufacturing and service sectors, including higher education institutions. Otamiri, Wagbara, and Odu (2016) emphasize that digital technology allows for decentralized education, often reducing the necessity for physical classroom interactions.

State-owned tertiary institutions in Rivers State, such as Ignatius Ajuru University of Education, Kenule Beeson Saro-Wiwa Polytechnic, Rivers State University, and Elechi Amadi Polytechnic, are encouraged to adopt e-administration comprehensively across academic and administrative processes. E-administration pertains to digital systems that support e-governance and enhance communication and service delivery. Although some electronic administration components have been implemented, gaps remain, as noted by Eneh (2015). Increasingly, numerous administrative tasks including transcript verification, fee payments, course registration, and examinations are being conducted online. Moreover, processes like recruitment, appraisal, and staff verification are progressively using digital platforms, and security mechanisms such as CCTV are gradually being introduced (Otamiri *et al*., 2016).

Despite these advancements, challenges continue to exist. A segment of employees may find it difficult to adapt to digital workflows, leading to delays and diminished output quality, as observed by Odu (2018). The low uptake of electronic mail and other digital communication tools further undermines operational efficiency. Although various studies have explored the relationship between e-administration and employee performance, there is a notable lack of empirical research focusing on state-owned tertiary institutions in Rivers State. This study, therefore, aims to investigate the impact of electronic administration on employee performance within these institutions.

Literature review

Theoretical foundation

This study utilizes Rogers' (1962) Diffusion of Innovation Theory to explore the adoption of new technologies and

innovations within organizations, particularly in the context of higher education. The theory suggests that individuals adopt innovations at varying rates, with early adopters generally achieving more successful outcomes than their late-adopting counterparts. Despite having sufficient ICT infrastructure and training programs in place, notable discrepancies in digital literacy and the ability to adapt to e-administration practices persist among employees in tertiary institutions. Those who are quick to adopt digital workflows tend to perform at higher levels, thus highlighting the importance of fostering early adoption among staff to enhance overall institutional performance.

Electronic administration

Information and Communication Technology (ICT) has emerged as a pivotal innovation of the 21st century, facilitating rapid processing, storage, and transmission of information (Liverpool & Jacinta, 2013). E-administration, a facet of ICT, pertains to the application of these technologies in the management, communication, and delivery of administrative services across various departments and stakeholders. Scholarly interpretations of e-administration vary; Ogbonna (2011) and Eden (2006) depict it as electronic information-based services prominent with participatory elements, while Dairo (2014) characterizes it as the online delivery of management information and decision-making capabilities. Radu and Polkowski (2014) emphasize its role in converting paper-based processes into electronic formats, contributing to the establishment of a paperless environment.

The advantages of e-administration are multifold, notably enhancing productivity and transparency (Brezoianu & Oprican, 2010) while mitigating individual dependency and streamlining workflows. It encompasses intra- and inter-office communication, facilitating administrative operations with minimal human intervention. In the context of Rivers State tertiary institutions, the integration of e-administration has led to marked reductions in paper usage, with online processes for course registration, results checking, submissions, and examinations significantly simplifying administrative functions. These processes are supported by a foundational ICT infrastructure that includes computers, high-speed Internet, printers, and scanners.

Bellamy (2005) describes how e-administration fosters novel information flows that challenge established norms, while Fountain (2005) observes its potential to diminish bureaucracy and hasten service delivery. Additionally, e-administration has been linked to reduced costs, enhanced transparency, and diminished corruption (Kumar *et al*., 2007). It supports organizational goals by embedding electronic tools into everyday operations (Schuppan, 2008). In contrast, developed nations like the US and Canada boast advanced e-administration systems due to substantial governmental investments; Nigeria's educational sector, however, suffers from low levels of digitalization and restricted budgetary allocation (Ngulube, 2018).

Electronic personnel management systems, integral to e-administration, track essential performance indicators for staff and students, such as absenteeism and productivity metrics. Furthermore, e-administration aids in managing the "4Ms"—men, money, machines, and materials facilitating efficient instructional delivery, office automation, and data-supported decision-making through software tools (Contel, 2011). Rather than supplanting decision-making, these systems equip managers with data-driven options, thereby enhancing operational efficiency.

Electronic administration

Information and Communication Technology (ICT) has fundamentally transformed operations within organizations during the 21st century, greatly enhancing the rapid processing, storage, and transmission of information, as noted by Liverpool & Jacinta (2013). In tertiary institutions, ICT is integral to electronic administration (e-administration), which digitizes administrative functions to bolster efficiency, transparency, and productivity. E-administration not only improves intra-office and inter-office communication but also allows institutions to handle academic and administrative responsibilities with minimal manual interference.

E-administration has been defined by various scholars; for instance, Ogbonna (2011) and Eden (2006) describe it as electronic information services that emphasize participation, while Dairo (2014) refers to it as the online provision of management information and decision-making. Radu and Polkowski (2014) focus on its role in transitioning from paper-based to digital processes, advocating for a paperless environment. Ultimately, e-administration integrates various digital tools to streamline workflows, lessen reliance on persons, and enhance service delivery.

In Rivers State, Nigeria, many tertiary institutions are incorporating e-administration processes. Students are now empowered to register for courses, pay fees, submit assignments, and retrieve results online. Computer-Based Tests (CBTs) are utilized for certain examinations, thereby decreasing manual workloads and increasing efficiency. Administrative staff leverage ICT resources such as computers, high-speed internet, printers, scanners, and email systems, facilitating effective task execution. These technologies foster quicker communication, reduce paperwork, and assist managers in monitoring staff performance, including absenteeism and productivity metrics (Otamiri *et al*., 2016).

Furthermore, e-administration functions as a mechanism to boost governance and accountability. Bellamy (2005) asserts that it introduces new information channels that challenge conventional practices, while Fountain (2005) cites its capacity to diminish bureaucracy and enhance service delivery speed. Kumar *et al*. (2007) suggest that e-administration helps minimize operational costs, augments transparency, and decreases corruption in service delivery. Schuppan (2008) also identifies it as a critical tool for achieving organizational goals through effective digital process management.

Globally, developed nations like the US and Canada showcase advanced e-administration systems fortified by government investments that ensure smooth integration with service delivery. Contrastingly, the Nigerian educational sector

grapples with challenges, notably low levels of digitalization, insufficient ICT infrastructure, and limited financial resources (Ngulube, 2018). However, initiatives such as biometric verification, online salary disbursements, and database-driven personnel management are gradually enhancing administrative capacities and alleviating issues like ghost workers.

In managing the key "4Ms" of administration men, money, machines, and materials e-administration promotes quicker and more efficient communication between managerial hierarchies. Office automation tools, including Decision Support Systems (Contel, 2011), enhance management decision-making by presenting data-driven insights, which in turn bolster transparency and accountability. Collectively, these technological advancements lead to improved task execution, efficient information flow, and ultimately enhance organizational performance.

In summary, e-administration emerges as a transformative asset for tertiary institutions, facilitating enhanced operational efficiency, superior resource management, and improved employee performance. To fully leverage its advantages, however, it is imperative to establish robust ICT infrastructure, provide comprehensive training, and drive cultural adaptation among staff.

Advantages of electronic administration in tertiary institutions

Electronic administration (e-administration) significantly benefits tertiary institutions by improving accessibility, inclusivity, and flexibility in service delivery. According to Ssweanyana and Busier (2007), institutions that invest in information and communication technology (ICT) experience increased efficiency, cost savings, enhanced service delivery, and overall improved performance. Danda (2004) also highlights that e-administration enables institutions to streamline processes, reduce operational costs, and enhance both formal and routine services.

Administrators are critical in planning and managing institutional policies and decisions, requiring electronic literacy to effectively utilize computers, access the internet, and manage information systems. E-administration provides quick data access, minimizes storage needs, supports simultaneous multi-user access, and enhances security measures. Additionally, it allows for centralized data sharing across departments such as employee, financial, and inventory records improving planning, decision-making, and interdepartmental collaboration. By reducing manpower requirements and ensuring data integrity through minimized manual handling, e-administration also reduces the potential for errors within institutional processes.

Concept of employee performance

Performance is characterized as the achievement of tasks evaluated against established criteria for accuracy, completeness, cost, and speed (Cole, 2012). It can be reflected in various forms such as increased productivity, adaptability to new technologies, and enhanced motivation among employees. Effective human resource management practices like training, team development, and skill specialization are consistently associated with improved employee performance.

According to Decenzo and Robbins (2010), performance represents the entirety of an employee's output. Those who underperform typically face restricted opportunities for career advancements. Organizations aiming to cultivate employee commitment may adopt strategies that involve competitive salaries, retention contracts, and strategic human resource planning (Robbins, 2013). Research, including the Hawthorne studies, shows a positive relationship between job satisfaction and enhanced performance, motivation, and job retention (Landy, 2005).

Employee performance is central to the ability of individuals to achieve organizational objectives effectively (Hellriegel, Jackson & Slocum, 2010; Ilgen & Pulakos, 2014). A critical aspect, task performance, comprises cognitive capabilities, technical skills, and work habits that empower employees to perform their roles successfully (Conway, 2009). In contemporary digital landscapes, employees with strong information and communication technology (ICT) skills tend to perform better, particularly in higher education sectors, underscoring the significance of promoting digital literacy to elevate overall performance.

Dimensions of employee job performance

a) **Timely completion of tasks:** Timely task performance is defined as the capability of employees to fulfill their assigned responsibilities within predetermined deadlines. This concept applies distinctly to various roles within an organization. For lecturers, it specifically involves adhering to the schedule for covering the curriculum effectively. In contrast, administrative staff are expected to complete their assignments punctually. According to Otamiri *et al*. (2016), employees who consistently meet these deadlines are categorized as high performers. This consistent performance plays a critical role in evaluating overall employee effectiveness and contributes to organizational success.

b) **Work quality:** Work quality assesses the value and accuracy of outputs, interactions, and deliverables (Simplicable, 2017). Timely completion is insufficient if tasks are substandard; therefore, employees are encouraged to prioritize quality to meet organizational standards and client expectations.

c) **Customer satisfaction:** Customer satisfaction measures how well products and services meet or exceed expectations (My Accounting Course, 2017). In the educational context, customers include students, organizations, and the general public. High satisfaction reflects quality service and contributes to organizational reputation and performance.

d) **Employee output:** Employee output is defined as the quantity of goods or services produced within a specific timeframe. Workers who meet or exceed production targets are deemed productive, whereas those who fall short are considered to be underperforming. An increase in output yields a positive impact on organizational efficiency and profitability.

e) **Concurrent performance:** Concurrent performance involves handling multiple tasks simultaneously, including responsibilities outside formal job descriptions (Ferdinand, 2018). Employees willing to assist colleagues and contribute beyond assigned duties demonstrate higher engagement and overall performance, reflecting adaptability and commitment.

Relationship between e-administration and employee performance

Fountain (2005) argues that implementing e-administration alongside a redesign of organizational processes is effective in reducing bureaucratic impediments and enhancing service delivery within tertiary institutions. The integration of e-administration leads to more timely task completion and overall efficiency. For example, institutions equipped with modern ICT infrastructure including high-speed computers, internet access, scanners, printers, and fax machines allow students, lecturers, and administrative staff to address queries promptly. Secretarial staff, notably, operate with minimal physical paperwork, executing most tasks electronically, which boosts the speed and accuracy of administrative functions.

Additionally, e-administration improves work quality by minimizing errors, redundancies, and unnecessary manual interventions, ensuring compliance with organizational standards and regulatory frameworks. In Nigerian tertiary institutions, particularly those in Rivers State, higher quality outputs from administrative personnel are observed when e-administration is fully implemented. This assertion is supported by empirical research, including a study by Osakede *et al*. (2017), which demonstrates that e-administration significantly enhances service delivery quality at Adekunle Ajasin University, revealing a positive correlation between e-administration and improved work quality.

Moreover, e-administration has a favorable impact on employee productivity and concurrent performance. Administrative staff and lecturers can manage a higher workload and engage in multiple tasks simultaneously, a scenario that is often impractical in traditional administrative frameworks. The utilization of electronic systems diminishes job-related stress, allowing employees to undertake additional responsibilities beyond their primary roles, thus contributing more effectively to the institutions' goals.

Methodology

The study employed an explanatory survey research design, focusing on four state-owned tertiary institutions in Rivers State: Ignatius Ajuru University of Education, Rivers State University, Kenule Beeson Saro-Wiwa Polytechnic, and Elechi Amadi Polytechnic. The total population comprised 5,109 academic and non-academic staff members, from which a sample of 370 respondents was determined using Taro Yamane's formula. Data collection involved a structured questionnaire based on a five-point Likert scale, ranging from Very High Extent (VHE = 5) to No Extent (NE = 1). The reliability of the questionnaire was confirmed through Cronbach's alpha, yielding a minimum coefficient of 0.72, which indicates high reliability. For data analysis, univariate analysis was performed using tables, means, and standard deviations. Furthermore, the relationship between e-administration and employee performance was assessed utilizing the Spearman Rank Order Correlation Coefficient, analyzed with the Statistical Package for Social Sciences (SPSS).

Table 1: Population distribution of the study

S/No	Selected Tertiary Institutions	Population per Institution
1	Ignatius Ajuru University	1,650
2	Rivers State University	2,150
3	Kenule Beeson Saro-Wiwa Polytechnic	702
4	Elechi Polytechnics	607
Total	-	5,109

Source: Personnel departments of the selected Tertiary Institutions in 2019.

Data analysis and results

Out of the 370 copies of questionnaire administered, 342 were retrieved, 28 copies were not filled and returned. Therefore, the analysis in this section is done based on 342 useable copies of the instrument.

Table 2: Items and scores on e-administration

S/N	*E-Admin istration*	VHE	HE	ME	LE	NE	TOTA
		5	4	3	2	1	
1.	Computer systems are used to process, store, share, and print official documents in all administrative offices in tertiary institutions	150	110	50	20	12	342
2.	Most of the institutions around us adopt online administration and registration	162	90	46	24	20	342
3.	Results computation is generally done using spreadsheet and electronic result management system	178	80	40	29	15	342
4.	Most of the offices do not have printers, photocopy machines, and external storage devices to store data/information	143	94	50	30	25	342
5.	Students' data are stored and accessed from database management system	151	95	45	31	20	342

Source: Fieldwork, 2020.

Table 4.1 showed the response frequency for each of the response options. For instance, on measurement item 3, the respondents were required to indicate their view on the extent to which spreadsheet and electronic result management systems are used in the computation of students' results in their institutions. Majority (178) of the respondents indicated to a very high extent; 80 of the respondents indicated to a high extent; 40 of the respondents indicated to a moderate extent; 29 of the respondents indicated to a low extent; while 15 of them indicated to no extent. Furthermore, a general look at the response frequencies shows that the responses are generally clustered around very high extent and high extent. Therefore, the overriding view is that tertiary institutions in Rivers State run electronic administration (e-administration) to a very high extent. The responses are summarized in the SPSS table shown overleaf.

Discussion of findings

The analysis of the research hypothesis revealed a Spearman correlation coefficient (r) of 0.713 at a significance level of 0.00, indicating a strong positive relationship between e-administration and employee job performance in tertiary institutions in Rivers State, Nigeria. This suggests that the adoption of electronic administration significantly enhances job performance for employees in these institutions.

Substantial progress has been made in computerizing administrative systems within these institutions, resulting in most offices being equipped with functional ICT infrastructure that facilitates efficient administrative operations. Findings indicate that the use of computer resources in institutional administrative activities enhances employees' ability to effectively perform their assigned tasks. This finding aligns with a previous study by Bede, Termit, Fong, and Onwuagboke (2014), which noted similar positive impacts of internet usage on the job performance of academic staff in Colleges of Education in South-Eastern Nigeria.

Fountain (2005) highlighted that e-administration, particularly when paired with the redesign of organizational processes, diminishes bureaucratic red tape and accelerates service delivery. In the context of tertiary education, this leads to timely task completion and efficient handling of administrative queries. Consequently, offices equipped with laptops, smart PCs, printers, scanners, and internet connectivity allow staff to execute their tasks more conveniently and effectively.

Moreover, e-administration contributes to improved quality of work output by reducing reliance on paper, minimizing human errors, and preventing task repetitions. Administrative tasks are thus executed with greater accuracy and adherence to organizational standards, ensuring service delivery aligns with both regulatory requirements and customer expectations. Evidence from Osakede *et al*. (2017) corroborates this, illustrating a significant positive influence of e-administration on service quality at Adekunle Ajasin University. Overall, the findings affirm that e-administration serves as a crucial tool for enhancing employee performance in tertiary institutions.

Conclusion and recommendation

Based on the study findings, electronic administration has a significant positive impact on employee job performance in tertiary institutions located in Rivers State, Nigeria. Employees from institutions that have implemented e-administration exhibit improvements in efficiency, work quality, and an enhanced ability to multitask. To capitalize on these findings, it is crucial that the management of these institutions continuously updates and maintains their electronic administrative systems. This proactive approach will facilitate better communication, streamline administrative processes, and promote sustained improvements in employee performance. Additionally, regular training programs are essential to equip staff with the necessary skills to fully leverage the advantages of e-administration.

References

1. Bede BCO, Termit KRS, Fong SF, Onwuagboke JN. Internet use among faculty members of college of Education in South-Eastern Nigeria. Eur Sci J. 2014;10(31):88–102.
2. Bellamy C. Information and communication age. Buckingham: Open University Press, 2005.
3. Brezoianu D, Oprican M. The development of electronic administration. London: Mark Press, 2010.
4. Cole GA. Personnel and human resource management. 5th ed. London: York Publishers, 2012.
5. Dairo R. Impact of technology on workplace productivity. The Punch Newspaper. 2014 Apr 16;(34):37.
6. Dessler G. Human resources management. 14th ed. New Jersey: Pearson Education Inc, 2015.
7. Eden DA. Introduction to educational administration in Nigeria. Ibadan: A Spectrum Book Ltd, 2006.
8. Ferdinand H. What is concurrent performance? [Internet]. 2018 [cited 2019 Dec 12]. Available from: https://concurent.com/what-is-concurrent-performance
9. Fountain JE. Better public service for growth and jobs: Analysis of the public employees' perceptions in South Korea. Int J Public Adm. 2005;31(14):1548–1568.
10. Hellriegel D, Jackson SE, Slocum JW. Management. 8th ed. Cincinnati, Ohio: South-Western College, 2010.
11. Ilgen DR, Pulakos ED. Employee performance in today's organizations. Int J Sel Assess. 2014;4(2):21–55.
12. Kerning J, Jaeger R. Management in developing countries. New York: Routledge, 1990.
13. Kumar V, Mukerji B, Irfan B, Ajax P. Factors for successful e-government adoption: A conceptual framework. Electron J E-Government. 2007;5(1):63–77.
14. Lisa O. Practice of office and information management. Lagos: GTI Prints, 2016.
15. Liverpool EO, Jacinta AO. Information and communication technology (ICT): A panacea to achieving effective goals in institution administration. Middle Task J Sci Res. 2013;15(2):200–207.
16. Odu S. Technostress and effectiveness of office and information managers in tertiary institutions in Rivers

State. Unpublished M.Sc. dissertation. Port Harcourt: Ignatius Ajuru University of Education, 2018.
17. Ogbonna B. E-government: The challenges of modern ICT in developing nation. Enugu: Garricks' Press, 2011.
18. Osakede KO, Ijimakinwa SO, Arijeniwa W, Adesanya T, Ojo B. The impact of e-administration on service delivery in Adekunle Ajasin University Akungba-Akoko (AAUA) Ondo State, Nigeria. J Manag Stud Econ Syst. 2017;3(3):173–182.
19. Otamiri S, Wagbara SO, Odu S. Digital work system and business educators' performance in post oil boom: A study of selected tertiary institution in Rivers State. Paper presented to the Association of Technical Education of Nigeria, 2016.
20. Radu A, Polkowski Z. Theoretical, technical and practical aspects of e-administration. J Digit Admin. 2014;1(7):187–210.
21. Simplicable. 16 types of work quality [Internet], 2017 [cited 2019 Dec 12]. Available from: https://simplicable.com/new/work-quality
22. Ssweanyana J, Busier M. Adoption and usage of ICT in developing countries: Case of Ugandan Firms. Int J Educ Dev Using ICT. 2007;3(3):49–59.