

DIGITAL TECHNOLOGIES AS PREDICTORS OF SECRETARIES' PRODUCTIVITY IN PUBLIC TERTIARY INSTITUTIONS IN ANAMBRA STATE

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Abstract

The study investigated selected digital technologies as predictors of secretaries' productivity in public tertiary institutions in Anambra State. Two research questions guided the study and two null hypotheses were tested at 0.05 level of significance. The correlational research design was adopted for the study. The population comprised 386 secretaries in four public tertiary institutions in Anambra State. The entire population was studied because the size was manageable. Out of 386 copies of the questionnaire administered, 332 copies were returned in good condition and used for data analysis. The instruments relevant to the paper were the Digital Technologies Questionnaire (DTQ) and Secretaries Productivity Questionnaire (SPQ). The DTQ clusters on computer applications and electronic document management system contained 10 items each, while the SPQ contained 15 items. The instruments were validated by three experts. A Content Validity Index of 1.00 was obtained. Cronbach Alpha reliability coefficients of 0.86 and 0.89 were obtained for the computer applications and electronic document management system clusters respectively, while 0.87 was obtained for the SPQ. Simple regression was used to analyse the data. Findings revealed that computer applications positively predict secretaries' productivity and account for 41.1% of its variation. Electronic document management system also positively predicts secretaries' productivity and accounts for 46.8% of its variation. The findings further showed that computer applications and electronic document management system significantly predict secretaries' productivity in public tertiary institutions in Anambra State. Based on these findings, the researcher concluded that the productive performance of secretaries improves when relevant office applications and electronic document management systems are available and effectively used. It was recommended that heads of secretarial units should provide functional office productivity applications and that registry departments should strengthen electronic systems for storing, retrieving, tracking and protecting official records.

Keywords: Computer Applications, Electronic Document Management System, Secretaries' Productivity, Digital Technologies

Introduction

Tertiary institutions provide advanced academic, professional and vocational training beyond the secondary level and are expected to produce the skilled workforce required for national growth. In Nigeria, universities, polytechnics and colleges of education operate under regulatory structures that are intended to promote quality teaching, research and service delivery (Federal Republic of Nigeria, 2013; Ogunode et al., 2021). These goals cannot be achieved through academic activities alone. The administrative system must also function efficiently. Records have to be created and preserved, correspondence must move without needless delay, meetings must be coordinated and information must reach the right officers at the right time. Secretaries occupy a central position in carrying out these responsibilities.

Secretaries are important human resources in the administration of tertiary institutions. They access, process, organise, store and disseminate information needed for daily office operations (Tuke, 2020). Their work extends beyond routine typing. Modern secretaries manage schedules, prepare minutes and reports, maintain records, receive visitors, coordinate communication and support institutional officers in the discharge of their duties. Mishra (2020) described secretaries as trained administrative assistants who can perform assigned responsibilities with limited supervision, while Onoja (2020) viewed them as executive assistants who combine office skills with initiative, judgement and responsibility. In the same vein, Igwe and Utebor (2023) observed that secretarial staff serve as important links between management, employees and other stakeholders. The quality of this support is reflected in secretaries' productivity.

Secretaries' productivity concerns how effectively and efficiently secretaries use their knowledge, skills, time and available resources to produce the quantity and quality of work expected of them. Adebayo and Ojo (2020) associated productivity with the effective use of skills and organisational resources to complete tasks that contribute to institutional goals. Ogunyemi (2021) stressed the importance of time management and adaptability, while Ogunbiyi (2024) noted that motivation, job satisfaction and opportunities for professional development can shape secretarial output. In this study, secretaries' productivity refers to the ability of secretaries to complete administrative and clerical duties accurately, promptly and consistently while supporting the smooth running of their institutions.

Productivity among secretaries in public tertiary institutions has, however, remained a source of concern. Delays in handling correspondence, incomplete reports, difficulty in retrieving records and avoidable backlogs in student and personnel documentation can slow down the entire administrative process. Onwubuya and Agbo (2025) reported that

secretaries in public universities in Anambra State encounter difficulties in managing digital records and responding promptly to administrative demands. Oguejiofor and Okem (2021) similarly linked weaknesses in secretarial information processing and communication to limited access to modern office technologies and inadequate practical competence. These problems suggest that productivity is not determined by personal effort alone. The tools through which work is performed also matter.

Computer applications constitute one group of tools that can shape secretaries' productivity. They include word-processing, spreadsheet, presentation, database and related office programs used to create documents, organise data, prepare reports and present information. Digital technologies permit information to be generated, processed, stored and transmitted in forms that are easier to edit, duplicate and retrieve (Tulinayo et al., 2018; Vuorikari et al., 2018). For secretaries, applications such as Microsoft Word, Excel, PowerPoint, Outlook, Google Docs and related platforms reduce dependence on repetitive manual processes. A memo can be corrected without retyping the entire document; figures can be calculated and displayed in tables; schedules can be updated quickly; and reports can be arranged in a professional format. When these applications are functional and secretaries possess the competence to use them, routine tasks are likely to be completed with greater speed, accuracy and consistency.

Electronic document management system is another digital resource that may influence productivity. It is an organised electronic system for creating, capturing, classifying, storing, tracking, retrieving and protecting institutional documents. Balogun et al. (2019) explained that electronic document management reduces paper dependence, improves workflow and makes information more accessible. Malekani and Alphonse (2022) added that such systems simplify document organisation, retrieval, security and collaboration. In a tertiary institution, an effective electronic document management system can support the management of letters, minutes, academic records, personnel files and policy documents. It can also reduce the time spent searching through physical files, minimise the risk of misplaced records and make the movement of documents across offices easier to monitor. Bakare-Fatungase and Oseni (2024) consequently linked electronic records management with improved administrative staff performance.

Although earlier studies have examined office automation, computer use, electronic records management and secretarial job performance, many of them were conducted outside Anambra State or treated the variables mainly as correlates of performance. Evidence is still needed on the extent to which computer applications and electronic document management system independently predict secretaries' productivity in public tertiary institutions in Anambra State. Establishing their predictive values is important because institutional managers need more than a general claim that technology is useful; they need evidence

showing the proportion of variation in productivity that can be associated with each technology. It is this gap that the present paper addressed by examining selected digital technologies as predictors of secretaries' productivity in public tertiary institutions in Anambra State.

Statement of the Problem

Secretaries are expected to ensure that correspondence, records, schedules, reports and other administrative documents are prepared and managed promptly. Yet, delays in document processing, difficulty in locating files, unfinished reports and errors in routine office work are still observed in some public tertiary institutions in Anambra State. Such weaknesses can disrupt communication, delay decisions and reduce the efficiency of academic and administrative units. Computer applications and electronic document management systems have the capacity to reduce manual effort, speed up document preparation and improve the storage and retrieval of institutional records. Nevertheless, the extent to which these technologies predict the productivity of secretaries in the public tertiary institutions in Anambra State had not been sufficiently established. Most available studies focused broadly on office automation, technology use or job performance, rather than determining the separate predictive values of computer applications and electronic document management system. The problem of this study, therefore, was to determine whether computer applications and electronic document management system predict secretaries' productivity in public tertiary institutions in Anambra State.

Purpose of the Study

The main purpose of the study was to investigate selected digital technologies as predictors of secretaries' productivity in public tertiary institutions in Anambra State. Specifically, the study sought to:

1. determine the predictive value of computer applications on secretaries' productivity in public tertiary institutions in Anambra State.
2. determine the predictive value of electronic document management system on secretaries' productivity in public tertiary institutions in Anambra State.

Research Questions

The following research questions guided the study:

1. What is the predictive value of computer applications on secretaries' productivity in public tertiary institutions in Anambra State?
2. What is the predictive value of electronic document management system on secretaries' productivity in public tertiary institutions in Anambra State?

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

1. Computer applications do not significantly predict secretaries' productivity in public tertiary institutions in Anambra State.
2. Electronic document management system does not significantly predict secretaries' productivity in public tertiary institutions in Anambra State.

Methods

The study adopted the correlational research design. The study was carried out in Anambra State, Nigeria. The population comprised 386 secretaries in four public tertiary institutions: Nnamdi Azikiwe University, Awka; Chukwuemeka Odumegwu Ojukwu University, Igbariam; Federal College of Education (Technical), Umuze; and Nwafor Orizu College of Education, Nsugbe. The entire population was studied because the size was manageable. Thus, census sampling was adopted.

The instruments used in this study were the Digital Technologies Questionnaire (DTQ) and Secretaries Productivity Questionnaire (SPQ), developed by the researcher from the reviewed literature and the research questions. The DTQ contained 20 items in two clusters. Data for this paper were drawn from Cluster B1, which contained 10 items on computer applications, and Cluster B2, which contained 10 items on electronic document management system. The SPQ contained 15 items on secretaries' productivity. The instruments were structured on a four-point rating scale of Strongly Agree, Agree, Disagree and Strongly Disagree. Three experts, two from the Department of Vocational Education and one from Measurement and Evaluation in the Faculty of Education, Chukwuemeka Odumegwu Ojukwu University, validated the instruments. Their corrections were incorporated into the final copies. A Content Validity Index of 1.00, representing complete agreement among the experts, was obtained.

A trial test was conducted with 20 secretaries in public tertiary institutions in Enugu State who were not part of the study. Cronbach Alpha yielded reliability coefficients of 0.86 for the computer applications cluster, 0.89 for the electronic document management system cluster and 0.87 for the SPQ. The researcher, assisted by four trained research assistants, administered 386 copies of the questionnaires through direct delivery and retrieval. A total of 332 properly completed copies were retrieved, representing 86% return rate, and were used for the analysis. Simple regression was used to answer the research questions and test the null hypotheses. The coefficient of determination showed the proportion of variation in secretaries' productivity explained by each predictor. A null hypothesis was rejected where the p-value was less than or equal to 0.05. On the other hand was accepted when the p-value is greater than 0.05. The

analysis was carried out using the Statistical Package for Social Sciences, version 26.

Results

Research Question 1: What is the predictive value of computer applications on secretaries' productivity in public tertiary institutions in Anambra State?

Table 1: Summary of Simple Regression Analysis on the Predictive Value of Computer Applications on Secretaries' Productivity in Public Tertiary Institutions in Anambra State

Variable	Unstandardized B	Std. Error	Standardized Beta
Constant	24.318	2.186	
Computer Applications	0.632	0.042	0.641
R	0.641		
R ²	0.411		
Adj. R ²	0.409		

The summary of the simple regression analysis as shown in Table 1 indicated that computer applications strongly predict secretaries' productivity in public tertiary institutions in Anambra State, as shown by the regression coefficient ($R = 0.641$). The coefficient of determination ($R^2 = 0.411$) showed that the explanatory power of the variable was strong. This implies that 41.1% of the variation in secretaries' productivity was accounted for by computer applications. The adjusted R^2 value of 0.409 supported the explanatory strength of the model, indicating that 40.9% of the variation in the dependent variable was explained after adjustment for sample size. The standardized beta weight ($\beta = 0.641$) showed that computer applications is a positive predictor of secretaries' productivity in public tertiary institutions in Anambra State.

Research Question 2: What is the predictive value of electronic document management system on secretaries' productivity in public tertiary institutions in Anambra State?

Table 2: Summary of Simple Regression Analysis on the Predictive Value of Electronic Document Management System on Secretaries' Productivity in Public Tertiary Institutions in Anambra State

Variable	Unstandardized B	Std. Error	Standardized Beta
Constant	20.746	1.964	
Electronic Document Management System	0.718	0.042	0.684
R	0.684		
R ²	0.468		
Adj. R ²	0.466		

The summary of the simple regression analysis as shown in Table 2 indicated that electronic document management system strongly predicts secretaries' productivity in public tertiary institutions in Anambra State, as shown by the regression coefficient ($R = 0.684$). The coefficient of determination ($R^2 = 0.468$) showed that the explanatory power of the variable was strong. This means that 46.8% of the variation in secretaries' productivity was accounted for by electronic document management system. The adjusted R^2 value of 0.466 supported the explanatory strength of the model, indicating that 46.6% of the variation in the dependent variable was explained after adjustment for sample size. The standardized beta weight ($\beta = 0.684$) showed that electronic document management system is a positive predictor of secretaries' productivity in public tertiary institutions in Anambra State.

Hypothesis One: Computer applications do not significantly predict secretaries' productivity in public tertiary institutions in Anambra State.

Table 3: Test of Significance of Simple Regression Analysis on the Predictive Value of Computer Applications on Secretaries' Productivity in Public Tertiary Institutions in Anambra State

Variable	Unstd. B	Std. Error	Beta	t-value	p-value
Constant	24.318	2.186		11.124	< .001
Computer Applications	0.632	0.042	0.641	15.171	< .001
R	0.641				
R^2	0.411				
Adj. R^2	0.409				
F	230.158				< .001

The summary of the test of significance of simple regression analysis as shown in Table 3 revealed that the simple regression coefficient (R) was 0.641, while R^2 was 0.411 and adjusted R^2 was 0.409. The F-ratio associated with the regression was 230.158, the t-value for computer applications was 15.171 and the p-value was less than 0.001. Since the p-value was lower than the specified 0.05 level of significance, the predictive effect of computer applications on secretaries' productivity was statistically significant. Thus, computer applications significantly predict secretaries' productivity in public tertiary institutions in Anambra State. The null hypothesis was therefore rejected.

Hypothesis Two: Electronic document management system does not significantly predict secretaries’ productivity in public tertiary institutions in Anambra State.

Table 4: Test of Significance of Simple Regression Analysis on the Predictive Value of Electronic Document Management System on Secretaries’ Productivity in Public Tertiary Institutions in Anambra State

Variable	Unstd. B	Std. Error	Beta	t-value	p-value
Constant	20.746	1.964		10.563	< .001
Electronic Document Management System	0.718	0.042	0.684	17.033	< .001
R	0.684				
R ²	0.468				
Adj. R ²	0.466				
F	290.133				< .001

The summary of the test of significance of simple regression analysis as shown in Table 4 revealed that the simple regression coefficient (R) was 0.684, while R² was 0.468 and adjusted R² was 0.466. The F-ratio associated with the regression was 290.133, the t-value for electronic document management system was 17.033 and the p-value was less than 0.001. Since the p-value was lower than the specified 0.05 level of significance, the predictive effect of electronic document management system on secretaries’ productivity was statistically significant. Thus, electronic document management system significantly predicts secretaries’ productivity in public tertiary institutions in Anambra State. The null hypothesis was therefore rejected.

Discussion of the Findings

The finding of the study revealed that computer applications is a strong positive predictor of secretaries’ productivity in public tertiary institutions in Anambra State. This result may be attributed to the practical role computer applications play in everyday secretarial work. Secretaries use them to prepare official correspondence, compile figures, manage schedules, develop reports, organise information and update institutional records. These applications reduce the amount of repetitive manual work involved in completing such tasks. They also make correction easier and improve the appearance and accuracy of documents. In a tertiary institution, where the same secretary may handle letters, minutes, student records, examination documents and reports within a limited period, the ability to work with appropriate applications naturally creates room for faster and more orderly output. The finding agrees with Echomgbe and Amadi (2023), who reported a significant relationship between the use of computers and the job productivity of secretaries in Rivers State universities. It is also consistent with Wogboroma and Nwaeke (2024), whose study showed a high positive relationship between modern office automation facilities and

secretarial staff job performance. Omolade and Tunmibi (2024) similarly found that the availability of technological equipment was positively associated with the effective delivery of secretarial responsibilities in public tertiary institutions. Although these earlier studies used different designs and were conducted in other states, their results point in the same direction. Secretaries are more productive when computer-based tools are available and when they can use those tools confidently.

Furthermore, the finding showed that computer applications significantly predict secretaries' productivity in public tertiary institutions in Anambra State. The significant result suggests that the contribution of computer applications to productivity is not accidental. Word-processing, spreadsheet, presentation and database applications have become basic instruments of office work. A secretary who cannot use them effectively is likely to spend more time on routine tasks and may produce work with avoidable errors. The finding is in agreement with Onoja (2020), who found that office automation equipment had a positive and significant effect on secretarial productivity in Rivers State University. It also supports Asogwa and Agusiobo (2022), who reported that modern technologies enhance the job performance of office secretaries in private universities in Enugu State. Taken together, these findings reinforce the view that computer applications are an important foundation for productive secretarial practice.

The study also revealed that electronic document management system is a strong positive predictor of secretaries' productivity in public tertiary institutions in Anambra State. This finding may have resulted from the document-centred nature of secretarial duties. Secretaries routinely handle letters, memos, minutes, academic records, personnel files, reports and other official materials. When these documents are stored and managed electronically, the time devoted to sorting, filing and searching for information is reduced. Records can be indexed, tracked and retrieved with greater ease. Electronic management also limits the disruption caused by misplaced files and makes it possible for authorised officers to obtain needed documents without depending entirely on a single physical cabinet or file clerk. This finding is supported by Bakare-Fatungase and Oseni (2024), who found that electronic records management systems improved administrative staff performance by strengthening record retrieval and office workflow. Olatunde (2022) also identified word-processing, database management and computer-assisted retrieval skills as essential for effective secretarial performance in public universities in Southwest Nigeria. These studies are relevant because the benefit of an electronic document system depends not only on the software itself but also on the ability of staff to capture, classify and retrieve records correctly. Malekani and Alphonse (2022) further explained that electronic document management systems improve document storage, organisation, security and collaboration. The consistency among these findings shows why electronic document

management recorded an even higher predictive value than computer applications in the present study.

Furthermore, electronic document management system significantly predicts secretaries' productivity in public tertiary institutions in Anambra State. The significant relationship may be explained by the way such systems support continuity in administrative work. A document can move from one stage of processing to another without disappearing into an untraceable paper file. Secretaries can verify the status of correspondence, retrieve previous versions and respond to requests more promptly. The finding agrees with Agu et al. (2022), who reported positive and significant relationships between records keeping, document handling and employee effectiveness. It also aligns with Balogun et al. (2019), who observed that electronic document management reduces paper use and improves workflow. The result therefore suggests that public tertiary institutions can obtain meaningful gains in secretarial productivity when electronic records are managed through organised, secure and user-friendly systems rather than through fragmented personal folders or mainly manual filing practices.

Conclusion

The researcher concludes, based on the findings of the study, that computer applications and electronic document management system positively predict secretaries' productivity in public tertiary institutions in Anambra State. Their predictive effects were also statistically significant. Computer applications enable secretaries to prepare, organise and present office information with greater speed and accuracy, while electronic document management system improves the storage, tracking, security and retrieval of institutional records. Electronic document management system recorded the stronger predictive value of the two variables, indicating that productive secretarial practice in tertiary institutions depends heavily on how effectively official documents are managed. Public tertiary institutions should therefore treat these technologies as essential working resources rather than optional additions to the secretarial office.

Recommendations

Based on the findings of this study, the researcher proffers the following recommendations:

1. Heads of secretarial units in public tertiary institutions in Anambra State should ensure that secretaries have access to functional word-processing, spreadsheet, presentation and database applications. Regular practical training should also be organised so that secretaries can use the applications to complete tasks more quickly, accurately and professionally.
2. Registry departments and records officers should strengthen the use of electronic document management systems for creating, storing, retrieving, tracking and protecting official records. Clear

procedures for file naming, access control, backup and document movement should be established to reduce dependence on manual filing and prevent the loss of important institutional information.

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