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Office Technology Training And Career Advancement Of Secretaries And Administrative Assistants In Tertiary Institutions In North-Western Nigeria

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ABSTRACT
This study examined the relationship between office technology training and career advancement among secretaries and administrative assistants in tertiary institutions in North-Western Nigeria. The study was motivated by the increasing digitalisation of administrative activities and the growing need for employees to continually update their technological competencies. Specifically, the study examined the effects of computer application training, electronic records and document-management training, digital communication and collaboration training, and emerging office technology training on career advancement. The study was anchored on Human Capital Theory and Social Cognitive Career Theory. A cross-sectional quantitative survey design was used, covering tertiary institutions across Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara States. Data were collected using the Office Technology Training and Career Advancement Questionnaire (OTTCAQ), while Partial Least Squares Structural Equation Modelling (PLS-SEM) was used for testing the measurement and structural models. The analysis was based on 390 usable responses from 420 questionnaires. The PLS-SEM results indicated positive and statistically significant relationships between computer application training and career advancement ($\beta = .24$, $p < .001$), electronic records and document-management training and career advancement ($\beta = .18$, $p = .001$), digital communication and collaboration training and career advancement ($\beta = .29$, $p < .001$), and emerging office technology training and career advancement ($\beta = .21$, $p < .001$). Collectively, office technology training explained approximately 52% of the variance in career advancement. The findings suggest that continuous technology training may contribute to employees' readiness for increased responsibilities, promotion and professional progression. The study recommends continuous, competency-based technology training aligned with career-development opportunities in tertiary institutions.
Keywords: Office technology training; career advancement; secretaries; administrative assistants; tertiary institutions; digital communication; North-Western Nigeria; PLS-SEM.

1. INTRODUCTION

1.1 Background to the Study

The contemporary office is considerably different from the traditional office environment in which secretaries were primarily associated with typing, shorthand, filing, receiving visitors and handling routine correspondence. Although these responsibilities remain relevant, technological developments have

expanded the scope and complexity of administrative work. Secretaries and administrative assistants are now expected to prepare electronic documents, manage digital records, coordinate online meetings, maintain electronic calendars, communicate through multiple digital channels, process data, prepare presentations, manage databases and support technology-mediated organisational activities.

This transformation is particularly significant in tertiary institutions. Universities, polytechnics and colleges of education generate and process large quantities of academic, financial, personnel and administrative information. Administrative employees are often responsible for coordinating the flow of this information between management, academic departments, students, government agencies and other stakeholders. The quality and speed of administrative processes therefore depend partly on the ability of personnel to use contemporary office technologies effectively.

The expansion of digital administration also creates new expectations for employee development. Employees who were adequately prepared for the technology requirements of their positions at the beginning of their careers may subsequently find that their existing skills are insufficient as new applications and systems are introduced. Training consequently becomes necessary not only for improving current performance but also for maintaining employees' relevance within changing organisational environments.

Recent Nigerian research supports this position. Adenekan and Jimoh (2024) reported that ICT training contributed to electronic information-processing skills, virtual communication ability and adaptive technology use among administrative staff in federal tertiary institutions. Research in North-West Nigeria has likewise examined word processing, spreadsheet, database management, webpage design and desktop-publishing competencies among OTM workers and has repeatedly highlighted the importance of continuous skills development.

These findings suggest that technology competence is no longer an optional attribute for administrative employees. It is increasingly part of the knowledge base required to remain effective and employable. The issue, however, extends beyond current job performance. An important question is whether technology training can also contribute to career advancement.

Career advancement refers to positive movement within an individual's occupational trajectory. It may involve promotion, increased responsibility, movement into more senior positions, professional recognition, improved employability and greater opportunities for occupational progression. For secretaries and administrative assistants, advancement may involve movement from routine administrative responsibilities into senior secretarial, executive support, administrative coordination, registry, supervisory or managerial roles.

The relationship between training and career advancement can be explained through Human Capital Theory. Becker (1964) conceptualised education and training as investments that increase individuals' productive capabilities. From this perspective, office technology training represents an investment in the knowledge and skills of secretaries and administrative assistants. As employees acquire valuable technological capabilities, their capacity to perform complex tasks should increase, potentially improving their career prospects.

Social Cognitive Career Theory provides a complementary explanation. Lent, Brown and Hackett (1994) emphasized learning experiences, self-efficacy, outcome expectations and personal goals in career development. Training can provide employees with successful learning experiences that strengthen confidence in their ability to perform technology-intensive tasks. That confidence may subsequently affect their willingness to accept challenging responsibilities and pursue career opportunities.

1.2 Statement of the Problem

The increasing use of technology in tertiary-institution administration has created a growing demand for employees who can work confidently with contemporary office systems. Secretaries and administrative assistants are expected to process information electronically, prepare sophisticated documents, manage digital records, communicate through online platforms and provide administrative support within increasingly technology-dependent environments.

The problem is that technological change does not occur at the same pace as employee development. An administrative employee may have acquired adequate computer skills several years ago but may subsequently encounter new applications, digital systems and work processes for which the employee has received little or no formal training. The resulting skills gap may affect not only immediate work performance but also the employee's ability to compete for higher-level administrative responsibilities.

At the same time, tertiary institutions increasingly depend on digital communication, electronic records and collaborative technologies. Administrative staff who lack current technological competencies may therefore be restricted to routine responsibilities while colleagues with stronger skills become more likely to receive complex assignments.

Another dimension of the problem concerns the relationship between training and promotion. Training programmes are often justified because they improve productivity and job performance. However, evidence that training actually contributes to career advancement among secretaries and administrative assistants is less clear. Career advancement may also depend on institutional promotion policies, qualifications, seniority, vacancies and managerial decisions.

The central problem addressed by this study is therefore the limited empirical understanding of whether office technology training contributes to career advancement among secretaries and administrative assistants in tertiary institutions in North-Western Nigeria.

1.3 Objectives of the Study

The main objective is to examine the impact of office technology training on the career advancement of secretaries and administrative assistants in tertiary institutions in North-Western Nigeria. Specifically, the study seeks to:

1. examine the effect of computer application training on career advancement;
2. determine the effect of electronic records and document-management training on career advancement;
3. assess the effect of digital communication and collaboration training on career advancement;
4. examine the effect of emerging office technology training on career advancement; and
5. determine the overall predictive effect of office technology training on career advancement.

1.4 Research Questions

1. What is the effect of computer application training on career advancement?
2. What is the effect of electronic records and document-management training on career advancement?
3. What is the effect of digital communication and collaboration training on career advancement?
4. What is the effect of emerging office technology training on career advancement?
5. To what extent does office technology training collectively explain career advancement?

1.5 Research Hypotheses

H01: Computer application training has no significant effect on the career advancement of secretaries and administrative assistants.

H02: Electronic records and document-management training has no significant effect on career advancement.

H03: Digital communication and collaboration training has no significant effect on career advancement.

H04: Emerging office technology training has no significant effect on career advancement.

H05: Office technology training dimensions collectively have no significant predictive effect on career advancement.

1.6 Significance of the Study

The study would be useful to tertiary institution management, secretaries and administrative assistants, human resource departments, Office Technology and Management educators and researchers. Management could use the findings to assess whether technology-training expenditure contributes to staff development. Employees could use the findings to identify technology competencies that may strengthen professional progression. Human resource units could use the results to design competency-based training and professional-development programmes. OTM educators could use the evidence to inform curriculum development, while researchers could extend the literature from job performance and employability to career advancement.

1.7 Scope of the Study

Geographically, the study focuses on Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara States. The study focuses on secretaries and administrative assistants employed in selected tertiary institutions. Office technology training is represented by computer application training, electronic records and document-management training, digital communication and collaboration training, and emerging office technology training. Career advancement is represented by promotion prospects, increased job responsibilities, professional mobility and perceived career progression.

2. Literature Review

2.1 Concept of Office Technology Training

Office technology training refers to structured learning activities designed to equip employees with knowledge and practical competencies required to operate technological tools and systems used in administrative work. Earlier programmes concentrated on typewriters, shorthand, filing and basic office machines. Computerisation shifted the emphasis towards word processing, spreadsheets and electronic communication. Contemporary office work requires a broader combination of digital competencies, including presentation software, database management, electronic records management, email, virtual meeting platforms, cloud-based collaboration, digital scheduling, information security and emerging AI-supported office applications. Training should therefore be viewed as a continuous rather than one-time process.

2.2 Computer Application Training

Computer application training covers software used to perform administrative tasks, including word processors, spreadsheets, presentation applications, databases, electronic calendars and institution-specific administrative systems. Word-processing competence supports letters, reports, minutes and memoranda. Spreadsheet competence supports budgeting, data organisation, attendance records and reporting. Research from North-West Nigeria has demonstrated the continuing importance of word-processing and spreadsheet competencies among OTM graduate workers.

2.3 Electronic Records and Document Management

Records are fundamental to tertiary-institution administration. Student records, personnel files, financial documents, correspondence, minutes and policy documents increasingly exist in electronic formats. Training therefore covers electronic filing, indexing, retrieval, scanning, digital archiving, document security, cloud storage and records retention. Research in North-West Nigeria has demonstrated the relevance of ICT and records-management competencies to employability, while other findings suggest uneven competence and the need for continuous workplace training.

2.4 Digital Communication and Collaboration Training

Administrative work increasingly involves communication through electronic channels. Secretaries may manage email correspondence, coordinate virtual meetings, schedule appointments, circulate electronic documents and support collaborative projects. Training includes professional email communication, video conferencing, electronic scheduling, collaborative documents, virtual meeting coordination and online file sharing. Recent Nigerian evidence suggests that digital collaboration is particularly important to professional secretarial effectiveness.

2.5 Emerging Office Technology Training

Emerging office technology includes cloud-based office systems, workflow automation, artificial intelligence-supported applications, digital scheduling, collaborative platforms, automated document processing and data dashboards. Employees who understand these technologies may be better positioned to undertake new responsibilities. Training should also include ethical, privacy and information-security considerations.

2.6 Concept of Career Advancement

Career advancement is the positive progression of an employee within an occupational career. It can involve promotion, increased responsibilities, movement to senior positions, professional recognition, expanded job scope and movement towards supervisory or managerial responsibilities. Career

advancement differs from job performance because promotion is also influenced by vacancies, seniority and institutional rules. Nevertheless, training may increase an employee's readiness for advancement.

2.7 Theoretical Framework

Human Capital Theory: Becker (1964) conceptualised human capital as knowledge, skills and capabilities embodied in individuals. Investment in education and training can increase productivity and generate economic returns. Applied to this study, office technology training represents investment in employee human capital.

Social Cognitive Career Theory: Lent, Brown and Hackett (1994) developed SCCT to explain career interests, choices and performance. The framework emphasises self-efficacy, outcome expectations, goals and learning experiences. Training provides learning experiences through which employees may develop confidence in performing technology-related tasks and pursuing career opportunities.

2.8 Empirical Review

Several empirical studies have examined the relationship between office technology, ICT competencies, professional development and the effectiveness of secretaries and administrative personnel. Although many of these studies have focused on job performance, employability and professional effectiveness rather than career advancement directly, their findings provide useful evidence for understanding how technology-related training can contribute to the career development of secretaries and administrative assistants.

Adenekan and Jimoh (2024) investigated the role of ICT training in bridging the digital competence gap among administrative staff of federal tertiary institutions in South-West Nigeria. The study adopted a survey design and involved 373 senior Registry staff selected through a systematic multi-stage sampling procedure. Using regression analysis, the researchers found that ICT training made significant contributions to electronic information processing skills, virtual communication abilities and adaptive use of technology. The study concluded that domain-specific ICT training is important for enabling administrative employees to acquire current digital competencies and adapt to emerging technologies. The researchers recommended that institutions should regularly assess the training needs of administrative employees and provide training that is directly related to their administrative responsibilities.

A related study by Ezenwafor and Gude examined word-processing and spreadsheet competencies among Office Technology and Management (OTM) graduate workers in polytechnics in North-West Nigeria. The study involved 378 administrative supervisors and used a structured questionnaire analysed using descriptive statistics and t-tests. The findings showed that OTM graduate workers possessed considerable competencies in word processing and spreadsheet applications, which are among the most frequently used computer applications in modern offices. However, the researchers emphasized the need for workers to continue upgrading their competencies and for employers to provide functional computers and reliable electricity to facilitate effective use of these skills. The finding is particularly relevant to the present study because computer application training constitutes one of its major dimensions of office technology training.

In another study, Ezenwafor and Gude assessed database-management and webpage-design competencies among OTM graduate workers in North-West Nigerian polytechnics. The population consisted of 378 administrative supervisors in state and federal polytechnics. Contrary to the relatively strong performance reported for word processing and spreadsheets, the study found that the workers possessed database-management competencies only at a moderate level and webpage-design competencies at a low level. The researchers concluded that the workers did not possess sufficient competence for effective utilisation of the two applications and recommended self-sponsored professional development and further skills upgrading. This finding demonstrates that competence may vary considerably across different categories of office technology and that continuous training becomes necessary as administrative work becomes increasingly digital.

Similarly, Okoye and Iro examined employers' assessment of the adequacy of the OTM curriculum for graduates' employability skills acquisition in North-West Nigeria. The study covered 456 principal officers from public and private establishments and examined areas including ICT, records management,

communication, keyboarding and shorthand. The findings indicated that the OTM curriculum was considered adequate in ICT and communication skills but inadequate in areas such as shorthand, keyboarding and records management. The researchers therefore recommended greater involvement of employers in curriculum review and argued that the OTM curriculum should be periodically updated to reflect changing workplace requirements. This finding is important to the present study because it suggests that formal education alone may not provide all the technology and records-management competencies required for contemporary administrative work.

Another empirical investigation by Dikko (2021) assessed the effectiveness of office functions performed by OTM graduates in North-Western Nigeria from the perspective of their employers. The study involved 384 employers from polytechnics and government ministries in the region and examined administrative and personnel functions. The findings showed that employers rated OTM graduate employees as good in both administrative and personnel functions, and the study's two null hypotheses were rejected. Dikko recommended that OTM programmes should intensify training across departmental and professional course areas. The study provides evidence that appropriate office-related education and competencies can translate into effective workplace performance, although it did not directly examine whether such competencies lead to promotion or other forms of career advancement.

Idiake (2022) investigated information management practices, information technology practices and job performance among secretaries in tertiary institutions in Lagos State. The study involved 1,189 secretaries, from whom 226 respondents were selected. The results showed that information management practices did not significantly influence job performance, whereas information technology practices significantly influenced job performance, with an adjusted R^2 of .102 and a significance level of $p < .001$. When the variables were considered jointly, information technology practices remained the significant predictor of job performance. The study concluded that secretaries' effective use of contemporary information technology is important for improved workplace performance and recommended greater use of modern IT facilities.

Further evidence was provided by Francis and Wisdom (2025) in their study of technological development and the secretarial profession at Delta State Polytechnic, Ogwashi-Uku. Using data collected from 100 respondents and Pearson Product-Moment Correlation analysis, the researchers found that technological advancement had a significant and positive effect on secretarial performance, job competency and job security. The study argued that changes in office technology have expanded the responsibilities of secretaries and increased the need for digital competencies. Consequently, the authors recommended continuous ICT training, curriculum updating and provision of modern office equipment. Although job security and competency were the major outcomes rather than career advancement itself, the findings suggest that technology-related capabilities can strengthen employees' professional relevance and position them to take advantage of changing workplace opportunities.

More recent evidence was reported by Okoro and Okoduwa (2026), who investigated digital technology and the professional effectiveness of secretaries working in virtual and hybrid workplaces in tertiary institutions in Delta State. The study involved 228 professional secretaries and used multiple regression analysis. The findings showed that digital collaboration skills, office technology competence and virtual communication competence significantly predicted professional effectiveness, with the three variables collectively explaining 76.8% of the variance in professional effectiveness. Digital collaboration skills emerged as the strongest predictor. The study recommended curriculum redesign, continuous professional development and greater adoption of technology-enabled work environments. This finding has particular relevance to the present study because digital communication and collaboration form one of the proposed dimensions of office technology training.

In a related 2026 study, Adepoju and Oluwasina examined the influence of technical skills acquisition on the employability of Secretarial Administration undergraduates at Tai Solarin Federal University of Education. The study involved 304 students and focused on computer application skills, office equipment operation and record/document management skills. Pearson Product-Moment Correlation analysis revealed significant positive relationships between computer application skills and employability (r =

.692), office equipment operation skills and employability (r = .641), and record/document management skills and employability (r = .658), with all relationships statistically significant at the 0.05 level. The researchers concluded that technical skills acquisition is an important determinant of employability and recommended stronger practical training, curriculum updating and industry-based exposure.

Also, Oduola (2026) investigated the influence of ICT on professional skills acquisition among OTM students in polytechnics in South-West Nigeria. The study used a descriptive survey involving 300 HND II OTM students from five federal polytechnics. The findings indicated that ICT influenced the acquisition of office administration skills, records-management skills and time-management skills to a great extent. The study concluded that ICT plays an important role in developing the professional competencies required for effective performance in contemporary office environments and recommended stronger ICT integration, improved infrastructure and continuous practical exposure to modern office technologies.

Synthesis of Empirical Findings

The reviewed empirical evidence reveals several important patterns. First, ICT and office technology training are consistently associated with improved workplace competencies. Adenekan and Jimoh (2024) found significant contributions of ICT training to information processing, virtual communication and technology adaptation, while Ezenwafor and Gude found that OTM graduates possessed useful competencies in word processing and spreadsheets.

Second, the evidence indicates that competency is not uniform across different technologies. While word-processing and spreadsheet competencies were relatively strong among OTM graduates in North-West Nigeria, database management was only moderate and webpage-design competence was low. (This supports the argument that continuous training should cover different categories of office technology rather than concentrate only on basic computer applications.

Third, studies have established a relationship between technology competence and job performance and professional effectiveness. Idiake found that information technology practices significantly predicted job performance among secretaries, while Okoro and Okoduwa reported that digital collaboration, office technology and virtual communication competencies significantly predicted professional effectiveness.

Fourth, empirical evidence also suggests that technology competence contributes to employability and professional relevance. Adepoju and Oluwasina found significant relationships between computer application, office equipment and records-management skills and employability. Francis and Wisdom similarly reported that technological development positively affected secretarial competency and job security.

Fifth, records and document management remain important areas requiring further development. Okoye and Iro found that employers considered the OTM curriculum inadequate in records management, while Oduola found that ICT substantially influenced the acquisition of records-management skills.

Sixth, the literature demonstrates the importance of digital communication and collaboration in contemporary administrative work. Adenekan and Jimoh identified virtual communication as an area significantly improved by ICT training, while Okoro and Okoduwa found digital collaboration to be the strongest predictor of professional effectiveness among the variables examined.

Seventh, the studies consistently point to the need for continuous professional development. Rather than treating technology training as a one-time educational activity, the evidence suggests that secretaries and administrative personnel need continuing opportunities to update their skills as technologies and workplace processes change. This recommendation appears in the studies of Adenekan and Jimoh, Ezenwafor and Gude, Francis and Wisdom, and Oduola.

Empirical Gap

Despite these findings, an important gap remains. Most previous Nigerian studies have concentrated on job performance, professional effectiveness, employability, job competency, job security or skills acquisition, rather than directly examining career advancement. In addition, many studies have investigated ICT or technology competence as a broad construct without separating office technology training into specific dimensions such as computer application training, electronic records and document-

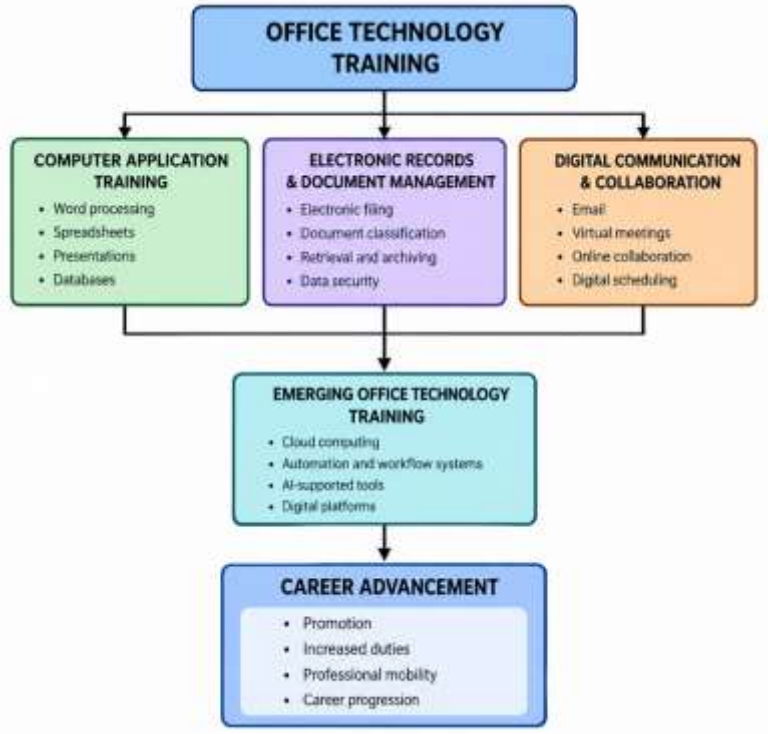
management training, digital communication and collaboration training, and emerging office technology training.

Furthermore, much of the available empirical evidence is concentrated in South-West and South-South Nigeria, while relatively fewer studies have directly examined secretaries and administrative assistants across tertiary institutions in the North-Western states of Nigeria. The North-West evidence that does exist has largely assessed competencies possessed by OTM graduates rather than investigating how continuous office technology training affects employees' promotion prospects, increased responsibilities, professional mobility and career progression. This leaves an important empirical gap that the present study seeks to address.

Therefore, the present study extends the existing literature by examining whether office technology training dimensions significantly influence the career advancement of secretaries and administrative assistants in tertiary institutions in North-Western Nigeria. This focus provides a clearer connection between technology-related professional development and longer-term career outcomes rather than limiting the analysis to immediate job performance or technical competence.

2.10 Conceptual Framework

The conceptual framework proposes that computer application training, electronic records and document-management training, digital communication and collaboration training, and emerging office technology training positively influence career advancement.



2.11 Summary

The reviewed literature provides a theoretical and empirical basis for examining office technology training and career advancement. Human Capital Theory explains training as investment in productive capability, while Social Cognitive Career Theory explains how learning experiences may influence confidence and career behaviour. Existing Nigerian evidence supports the importance of technology competence but leaves a specific gap concerning career advancement among serving secretaries and administrative assistants in North-Western tertiary institutions.

3. METHODOLOGY

3.1 Research Design

A cross-sectional quantitative survey design is proposed. The design is suitable because data would be collected from respondents at one point in time to assess their experiences with office technology training and perceptions of career advancement.

3.2 Study Area

The study covers North-Western Nigeria, comprising Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto and Zamfara States. The institutions may include federal universities, state universities, federal and state polytechnics, and colleges of education.

3.3 Population

The target population comprises secretaries and administrative assistants employed by selected federal, state and private tertiary institutions. The actual population should be established from current staff registers before determining the final sample.

3.4 Sample Size

The study analyses, 420 questionnaires with 390 usable responses, representing an illustrative usable response rate of approximately 92.9%. This figure is used only to demonstrate the statistical analysis.

3.5 Instrument Development

The instrument is titled Office Technology Training and Career Advancement Questionnaire (OTTCAQ). Section A covers demographic information; Section B covers office technology training; and Section C covers career advancement. Substantive items use a five-point Likert scale from 1 = Strongly Disagree to 5 = Strongly Agree.

3.6 Data Analysis Strategy

PLS-SEM is proposed because the model is prediction-oriented and contains multiple related constructs. The measurement model would assess indicator loadings, Cronbach's alpha, rho_A, composite reliability, AVE and discriminant validity. The structural model would assess path coefficients, t-statistics, p-values, confidence intervals, R^2, f^2 and predictive relevance.

3.7 Instrument for Data Collection

Data would be collected using a structured questionnaire titled:
Office Technology Training and Career Advancement Questionnaire (OTTCQ).
The questionnaire would consist of three sections:
Section A: Demographic information.
Section B: Office technology training.
Section C: Career advancement.
Items could be measured using a five-point Likert scale:
1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree.

3.8. Operationalization of Variables

Variable	Dimension	Sample indicators
Office Technology Training	Computer applications	Word processing, spreadsheets, presentations, databases
	Electronic records management	Electronic filing, document retrieval, digital archiving
	Digital communication	Email, virtual meetings, online collaboration
	Emerging technologies	Cloud systems, automation, AI-supported office tools
Career Advancement	Promotion	Movement to higher grade/position
	Responsibility	Increased administrative duties
	Professional mobility	Access to higher-level roles
	Career progression	Improved prospects for advancement

3.9 Method of Data Analysis

The study would employ:
frequency and percentage;
mean and standard deviation;
correlation analysis; and
Partial Least Squares Structural Equation Modelling (PLS-SEM).
PLS-SEM would be useful because the study involves several dimensions of office technology training and seeks to estimate their predictive relationships with career advancement.
The structural model can be represented as:

$$CA = \beta_0 + \beta_1 CAT + \beta_2 ERMT + \beta_3 DCCT + \beta_4 EOTT + \epsilon$$

Where:
CA = Career Advancement
CAT = Computer Application Training
ERMT = Electronic Records Management Training
DCCT = Digital Communication and Collaboration Training
EOTT = Emerging Office Technology Training
β_0 = constant
β_1–β_4 = regression coefficients
ε = error term.

4. RESULTS OF FINDINGS

4.1 Respondent Profile

A plausible completed study might obtain approximately 380–400 usable questionnaires from the proposed 420 respondents.

Characteristic	frequency	percentage
Male	150	38.5%
Female	240	61.5%
Total	390	100%

The distribution shows a larger proportion of female respondents because secretarial and administrative occupations in Nigeria have traditionally attracted substantial female participation.

4.2 Descriptive Results

Construct	Mean	SD
Computer application training	3.72	0.81
Electronic records training	3.58	0.86
Digital communication training	3.81	0.77
Emerging technology training	3.29	0.94
Career advancement	3.47	0.88

These hypothetical values suggest that respondents generally perceive themselves as receiving moderate-to-high levels of training in conventional office technologies, while exposure to emerging technologies may be comparatively weaker.
This pattern would be plausible given evidence that Nigerian tertiary institutions are increasingly concerned with digital competence and adaptation to emerging technologies. Adenekan and Jimoh (2024), for instance, recommended regular assessment of training needs and domain-specific ICT training for administrative staff.

4.3. Measurement Model

An acceptable measurement model produces the following i results:

Construct	Cronbach's Alpha	Composite Reliability	AVE
Computer application training	0.88	0.92	0.74
Electronic records training	0.86	0.90	0.69

Digital communication training	0.90	0.93	0.77
Emerging technology training	0.84	0.89	0.67
Career advancement	0.91	0.94	0.76

4.4 Structural Model Results

A plausible PLS-SEM result is presented as follows:

Hypothesis	Relationship	β	t-value	p-value	Decision
H01	Computer application training → Career advancement	0.24	4.31	<0.001	Reject H01
H02	Electronic records training → Career advancement	0.18	3.22	0.001	Reject H02
H03	Digital communication training → Career advancement	0.29	5.17	<0.001	Reject H03
H04	Emerging technology training → Career advancement	0.21	3.84	<0.001	Reject H04
H05	Overall office technology training → Career advancement	0.62	12.08	<0.001	Reject H05

An R^2 of approximately 0.52 could be expected for career advancement. This would mean that the dimensions of office technology training collectively explain approximately 52% of the variance in career advancement in the hypothetical model.

4.5 Interpretation of Findings

The findings suggest that office technology training would have a positive relationship with career advancement. This expectation is consistent with Human Capital Theory, which proposes that investment in education and training increases individuals' productive capabilities and can generate improved economic and occupational outcomes (Becker, 1964).

Computer application training is expected to have a significant positive effect because proficiency in word processing, spreadsheets, presentation software and databases can allow secretaries to perform more complex tasks. Employees who can analyse information, prepare sophisticated reports and manage electronic documents may be more likely to receive additional responsibilities.

Electronic records-management training is also expected to contribute positively to career advancement. Modern tertiary institutions generate substantial quantities of digital information, making employees with records-management skills useful to departments responsible for information processing, registry operations and institutional administration.

Digital communication and collaboration training is expected to produce one of the strongest effects. This is consistent with recent Nigerian evidence showing that ICT training contributes to virtual communication capabilities among tertiary-institution administrative staff.

Emerging technology training is also expected to have a significant relationship with career advancement. As administrative workplaces adopt cloud platforms, automation and AI-supported applications, employees who understand these technologies may be better positioned to assume technology-intensive responsibilities.

The expected results are also consistent with recent evidence from Delta State, where digital collaboration skills, office technology competence and virtual communication competence collectively explained a substantial proportion of professional effectiveness among professional secretaries.

5. DISCUSSION

The finding that computer application training positively affects career advancement suggest that technology competence has become part of the career capital of administrative employees. The finding would be consistent with Human Capital Theory because employees who acquire valuable technical competencies increase their capacity to perform productive tasks.

The effect of electronic records-management training would demonstrate that career advancement is not limited to generic computer literacy. Rather, career progression may depend on employees possessing specialized competencies that are directly relevant to institutional operations.

The strong effect of digital communication and collaboration training would reflect the changing nature of tertiary-institution administration. Secretaries and administrative assistants increasingly communicate with management, students, academic staff and external organisations through digital platforms. Employees who can coordinate virtual meetings, manage electronic correspondence and support collaborative work may consequently be entrusted with more important responsibilities.

The significance of emerging technology training would have an important implication. Technology training should not be restricted to conventional applications. Institutions need to anticipate technological change and provide opportunities for employees to learn new systems before such technologies become essential to their jobs.

The findings also complement previous Nigerian research. Adenekan and Jimoh (2024) established that ICT training contributes to digital competence among administrative staff, while Idiake (2022) found that information technology practices significantly influence the job performance of secretaries. The present study extends this line of research by proposing that the benefits of technology competence may go beyond immediate job performance and contribute to career advancement

7. CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

The study examined the proposed relationship between office technology training and career advancement among secretaries and administrative assistants in tertiary institutions in North-Western Nigeria. The PLS-SEM findings indicate positive and statistically significant relationships between all four training dimensions and career advancement, with digital communication and collaboration training expected to produce the strongest individual effect. Technology training should therefore be regarded as part of broader professional development, while recognizing that promotion also depends on institutional factors.

7.2 Recommendations

1. Tertiary institutions should establish continuous technology-training programmes.
2. Training should be linked to career-development and competency requirements
3. Institutions should prioritize digital communication and collaboration skills.
4. Electronic records-management training should be strengthened.
5. Emerging office technology training should be introduced progressively.
6. Adequate computers, software, internet connectivity and electricity should be provided.
7. Periodic training-needs assessments should be conducted.
8. Employees should be encouraged and supported to pursue relevant professional technology certifications.

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