

UTILIZATION OF ARTIFICIAL INTELLIGENCE (AI) TECHNOLOGIES BY SECRETARIES IN PUBLIC ORGANIZATIONS FOR EFFECTIVE JOB PERFORMANCE IN EBONYI STATE

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Abstract

This study examined the use of Artificial Intelligence (AI) technologies, specifically transcription tools, by secretaries in public organizations in Ebonyi State to support effective job performance. The study aimed to determine the extent to which secretaries employ transcription tools in performing their duties. One research question and one null hypothesis guided the study. A descriptive survey design was adopted, involving the entire population of 527 secretaries across the 32 Ministries in Ebonyi State. A census sampling method was used. A structured questionnaire (QUAIOTEJPPS), face-validated by three experts in education, was used as the data-collection instrument. The instrument's reliability was established through a pilot test, yielding a Cronbach's alpha of .76, and data were analyzed using mean, standard deviation, and two-way ANOVA at the 0.05 significance level. Findings revealed that secretaries rarely utilized transcription tools, with a cluster mean of 1.63, indicating low adoption despite their potential to improve efficiency in tasks such as minutes, memos, and reports. Utilization significantly varied by gender and years of job experience, with male and less experienced professional secretaries exhibiting higher utilization levels, reflecting differences in technological confidence and ICT exposure. The study concluded that the utilization of transcription tools by professional secretaries in public organizations in Ebonyi State is generally low. It was recommended, among others, that administrators of the OTM programme in Nigerian tertiary institutions should introduce training on digital transcription tools to enable students to acquire relevant digital skills needed to utilize AI transcription tools for effective job performance in public organizations.

Keywords: Artificial Intelligence (AI), Office Automation, Secretarial Functions, Public Organizations, Job Performance.

Introduction

Lately, the incorporation of Artificial Intelligence (AI) office technologies across organizations has become increasingly embraced in simplifying administrative tasks, improving service delivery, and optimizing job performance. Within office settings, AI is operationalized through narrow AI applications such as speech recognition, natural language processing, and document automation rather than general intelligence (Gartner, 2019). Secretaries, as

indispensable administrative personnel, play vital roles in ensuring the seamless operation of daily activities in organizations. Relevant AI tools secretaries need for effective job performance include speech-to-text engines, automated meeting summarizers, and translation algorithms. These tools function as a subset of office automation, exclusively designed to reduce manual cognitive load and modernize repetitive tasks (Mafikuyomi, 2022).

Office automation has evolved from basic word processors and spreadsheets to intelligent automation systems that learn from data and improve output. Transcription tools exemplify this shift. While conventional devices like tape recorders merely capture audio, AI-powered tools such as Otter.ai and Trint automatically convert speech to editable text, identify speakers, and generate summaries. Thus, AI represents the intelligence layer of modern office automation, directly targeting the high-volume documentation tasks that secretaries routinely perform (Mafikuyomi, 2022). Adjei, (2020) opined that AI-powered office automation enhances secretarial functions and improves job performance. For instance, using Fireflies.ai to auto-transcribe a two-hour meeting in minutes with high accuracy reduces turnaround time and improves record integrity, reflecting effective job performance. Conversely, non-utilization of AI-powered office automation by secretaries may sustain reliance on manual note-taking, leading to delays, fatigue, and errors.

Secretaries are administrative professionals responsible for providing organizational support, coordinating office activities, and ensuring seamless communication and smooth operations. They are variously referred to as office managers, confidential secretaries, administrative assistants, executive assistants, personal assistants, and office coordinators. Eleni (2022) described secretaries as professionals who perform routine administrative functions such as drafting correspondence, preparing documents, scheduling appointments, and taking minutes of meetings. Historically, secretaries handled basic administrative tasks such as typing and filing (Collins English Dictionary, 2024). However, technological advancement and the emergence of AI have expanded their responsibilities (Sharma, 2020). Lewis (2024), Conley (2024), and Lpcentre (2024) remarked that secretaries perform three principal functions, which include: information management (minutes, memos, reports, and filing); facilitation (correspondence, meeting coordination, and translation); and records administration (documentation, retrieval, and confidentiality). These functions are time-intensive and error-prone when executed manually. AI transcription tools map directly onto the first two functions by automating meeting documentation and converting spoken Ibo/English exchanges into written records, thereby reducing workload, minimizing omissions, and improving job performance. As AI technologies become increasingly pervasive, professional secretaries are expected to concentrate more on value-added tasks that cannot be easily automated (Leonardo, 2024).

AI technologies are digital systems designed with human-like intelligence that assist secretaries in carrying out routine office functions such as handling correspondence, scheduling appointments, taking dictation, and organizing records in a more efficient and stress-free manner. AI technologies help to automate tasks, increase speed and accuracy, improve data management, and boost productivity (Singh, 2022; Leonardo, 2024). AI technologies can be referred to in this study as software and digital systems capable of modernizing secretarial job performance through automation, improved efficiency, and enhanced accuracy in public organizations in Ebonyi State. Among the AI technologies relevant to secretarial duties are AI-powered transcription tools. AI-powered transcription tools can help secretaries in public organizations automate tasks such as meeting minutes, interviews, and dictations, improving efficiency, accuracy, and overall job performance. Key tools include Murf (text-to-speech), Otter.ai (real-

time transcription and searchable summaries), Trint (automated transcription and minutes productivity), Google Translate (document translation), and Fireflies.ai (meeting transcription and task tracking) (Pavitra, 2024; Conley, 2024; Gartner, 2019; Office Dynamics, 2024; Harvard Business Review, 2018; Bajaj, 2024). These tools reduce manual effort, minimize errors, streamline workflows, and enable secretaries to focus on higher-level responsibilities, thereby enhancing effective job performance in public organizations.

When effectively utilized, these technologies have the potential to improve speed, accuracy, efficiency, and overall job performance of professional secretaries. Utilization refers to the process of employing tools or resources to achieve specific goals. Nwachukwu (2022) defined utilization as the use of technologies and services to support efficient and successful job performance. Although global adoption of AI is increasing, Gartner (2019) reported that utilization of AI in public organizations remains relatively low. Mikalef, Fjørtoft, and Torvatn (2019) disclosed low utilization of AI office technologies within public sector institutions. Mafikuyomi (2022) reported low adoption of office transcription tools by professional secretaries in enhancing office performance. Adjei (2020) noted that adoption and use of transcription tools faced challenges related to technological infrastructure, training, and resistance to change. Kim (2022) disclosed challenges such as technical issues, lack of training, and resistance to change hinder secretaries from highly utilizing transcription tools. Haniff, Meng, Pongkemmanun, Sia, Newport, Ooi, and Jani (2025) found that utilization of transcription tools for job performance was low.

Job performance for secretaries is assessed through speed, accuracy, completeness, and timeliness of administrative outputs. Effective job performance by secretaries is vital to the success of public organizations in Nigeria because they play a vital role in administrative operations, and their performance is influenced by factors such as professional development, technological proficiency, organizational support, and performance evaluation (Ojo, 2018; Adebayo, 2020; and Eze, 2020). Gender differences in AI utilization for job performance have been reported globally. Madgavkar (2021) noted that although the utilization of AI technologies is increasing, gender disparities persist. Spiceworks (2020) reported higher AI tools usage among males than females. In Nigeria, Aguboshim, Obiokafor and Nwokedi (2022) observed that fewer women use ICT compared to men due to digital literacy gaps and cybersecurity concerns. Years of work experience may also influence technology utilization. While Okolocha and Ihionkhan (2015) categorized experience levels, studies by Ezenwafor and Nwaokwa (2017) and Emeasoba (2014) revealed that years of experience did not significantly influence ICT utilization among lecturers. Since these findings do not specifically address secretaries, investigating years of experience remains necessary. Against this backdrop, this study focused on the extent of utilization of AI technologies by professional secretaries for effective job performance in public organizations in Ebonyi State

Public organizations include government ministries, parastatals, agencies, institutions, and other entities funded by government through taxes paid by citizens and are therefore accountable to both government and the public. According to the World Bank (2020), public organizations in Nigeria play a vital role in promoting economic growth and social development, as they account for approximately 30 percent of the country's Gross Domestic Product (GDP). Unfortunately, many public organizations in Nigeria are characterized by numerous challenges such as obsolete systems, inadequate infrastructure, inefficient processes, manual data management, limited digital literacy, outdated software, security threats, lack of technological advancement, corruption, and lack of transparency (Adeyemi, 2020). Other constraints include

inefficiencies in task automation, poor data management and communication, and skills gaps among employees, including professional secretaries (Transparency International, 2020). These challenges significantly hinder effective job performance and productivity within public organizations. Although AI transcription tools offer a direct solution, the extent to which secretaries utilize them for effective job performance remains unclear.

Statement of the Problem

Over time, the secretarial profession has evolved from routine clerical duties to more complex responsibilities that require the utilization of digital technologies. In modern office environments, professional secretaries are increasingly expected to utilize advanced AI technologies to manage growing workloads and enhance job performance (Bamidele, 2020; Lewis, 2024; and Leonardo, 2024). Public organizations in Ebonyi State, like many others in Nigeria, continue to experience administrative inefficiencies such as delays in documentation, poor information flow, heavy workload, and errors in record-keeping due to the unavailability of modern technologies coupled with poor funding, poor power supply, poor internet connectivity, and inadequate training, knowledge, and skills of different categories (Eze and Onu, 2022). These challenges negatively affect service delivery and organizational productivity and place increasing pressure on professional secretaries who serve as frontline administrative personnel. The persistence of manual and semi-automated office practices further compounds these problems.

Consequently, the major problem of this study is that while secretaries in public organizations in Ebonyi State do not appear to perform their jobs effectively with AI technologies, there is a lack of empirical data specifically on the extent to which they utilize AI transcription tools for effective job performance. No recognized study has quantified utilization levels, nor examined how gender and years of experience influence adoption within this population and geographic context. This makes it crucial to conduct this study to provide empirical data to enable relevant stakeholders to take intentional remedial actions to ensure that secretaries perform their jobs optimally to effectively contribute to efficient service delivery to citizens by public organizations in Ebonyi State.

Research Question

The following research question guided the study;

1. To what extent do secretaries utilize transcription tools for effective job performance?

Null Hypothesis

The following null hypothesis was tested at the 0.05 level of significance:

1. There is no significant difference in the mean ratings of secretaries on the extent they utilize transcription tools for effective job performance based on their gender and years of job experience as secretaries.

Methods

The study adopted a descriptive survey of research design. The study was conducted in public organizations in Ebonyi State, located in the South-East Geo-Political Zone of Nigeria, which is bordered by Benue State to the North, Enugu State to the West, and Cross River State to the East. The choice of this design is appropriate for the study because the research seeks to describe the current extent of AI transcription tool utilization and the level of job performance

among secretaries, and to examine the relationship between the two variables without intervention. The study involved all 527 secretaries across the 32 Ministries in Ebonyi State, as obtained from the Office of the Secretary to the State Government (January 2026), and the entire population was studied due to its manageable size. The instrument for data collection was a structured questionnaire titled “Questionnaire on Utilization of AI Technologies for Effective Job Performance by Professional Secretaries” (QUAITEJPPS). The instrument has two main sections: A and B. Section A contained two items of the respondent’s demographic data, such as gender and years of job experience. Section B contained 9 items on a 5-point rating scale of Very Frequently Utilized (VFU), Frequently Utilized (FU), Occasionally Utilized (OU), Rarely Utilized (SU), and Not Utilized (NU).

The face validity of the instrument was determined through the judgments of three experts, two from Business Education and one from Measurement and Evaluation. The reliability of the instrument was established through a pilot test, and the data obtained were analyzed using Cronbach’s alpha, yielding a reliability coefficient of .76. The questionnaire was administered personally by the researcher with the assistance of 12 trained research assistants who were adequately briefed on the procedures for administration and retrieval. Of the 527 copies of the questionnaire distributed, 513 (94%) were properly completed and returned, and these were used for data analysis. Data collected were analyzed using mean, standard deviation, and two-way Analysis of Variance (ANOVA). Mean score was used to answer the research question, while standard deviation was used to determine the homogeneity of respondents’ mean ratings. The null hypotheses were tested using two-way ANOVA at the 0.05 level of significance with SPSS Version 27. A null hypothesis was accepted when the p-value was equal to or greater than 0.05 and rejected when the p-value was less than 0.05.

Results and Discussion

Research Question 1

What is the extent of utilization of transcription tools by secretaries in public organizations in Ebonyi State for effective job performance?

Table 1: Mean ratings and standard deviation on the extent to which secretaries in public organizations utilized transcription tools for effective job performance

S/N	Utilization of Transcription Tools I utilize;	$\bar{x}$	SD	Remarks
1	Otter.ai to convert recorded meetings into written text for easy documentation	1.48	.74	Not Utilized
2	Murf to transcribe voice notes while working on documents	1.43	.71	Not Utilized
3	Otter.ai to transcribe audio notes from meetings for official records	1.54	.64	Rarely Utilized
4	Google Translate to translate documents from one language to another (Ibo language to English) to reduce the language barrier.	2.17	.79	Rarely Utilized
5	Fireflies.ai to transcribe meeting minutes of meetings to ensure that important points discussed during meetings are not omitted.	1.47	.91	Not utilized
6	Fireflies.ai to follow post-meeting tasks.	1.45	.92	Not Utilized

7	Trint to transcribe minutes of meetings, thereby reducing the need for manual minute-taking.	2.43	.80	Rarely Utilized
8	The editing tool in Trint to edit audio recordings to enhance transcription accuracy.	1.43	.95	Not Utilized
9	Speech-to-text features in Otter.ai to convert spoken conversations to text, which allows me to concentrate on meetings without worrying about taking notes.	1.31	.73	Not Utilized
Cluster Mean		1.63		Rarely Utilized

Data in Table 1 show that out of 9 transcription tools listed for effective job performance, respondents rarely utilized items 3, 4, and 7, with mean scores ranging between 1.54 and 2.47, while the remaining six items were not utilized by the respondents, with mean scores ranging from 1.31 to 1.48. The cluster score of 1.63 shows that overall, secretaries in public organizations in Ebonyi State rarely utilized transcription tools for effective job performance. The standard deviation for all the items is within the same range, indicating that the respondents are not far apart in their mean ratings.

Hypothesis 1

There is no significant difference in the mean ratings of secretaries in public organizations in Ebonyi State on the extent to which they utilize transcription tools for effective job performance based on their gender and years of job experience as secretaries.

Table 2: Two-way ANOVA analysis of significant difference in the mean ratings of secretaries on extent of utilization of transcription tools for effective job performance based on gender and years of job experience

Source	Type III SS	df	MS	F	Sig.	Decision
Corrected Model	1686.39 ^a	3	562.13	15.83	.00	
Intercept	43623.36	1	43623.36	1228.59	.00	
Gender	1237.79	1	1237.79	34.86	.00	Significant
Years of experience	472.19	2	236.09	6.65	.00	Significant
Error	4118.81	509	35.51			
Total	65480.00	513				
Corrected Total	5805.20	512				

a. R Squared = .290 (Adjusted R Squared = .272)

Data in Table 2 reveal that there is a significant difference in the mean ratings of secretaries on the extent of utilization of transcription tools for effective job performance based on gender, $F(1,509) = 34.86$, $p < .00$, $\eta^2 = .231$, indicating that utilization levels differed significantly between male and female secretaries. There was also a significant main effect of years of job experience, $F(2,509) = 6.65$, $p = .00$, $\eta^2 = .103$, suggesting that utilization varied significantly across different experience levels.

Discussion of Findings

Findings of the study revealed that secretaries in public organizations in Ebonyi State rarely utilized transcription tools for effective job performance. The findings of the study align with those of Adjei (2020), which disclosed that the adoption and use of transcription tools by

secretaries faced challenges related to technological infrastructure, staff training, and resistance to change among secretaries. Kim (2022) found that the level of utilization of transcription tools among secretaries was low. The findings of the study are disturbing because transcription tools such as voice-to-text/speech recognition enable secretaries to convert meetings, dictation, and audio records into editable text much faster than manual typing or verbatim transcription, which increases output. The tools likewise allow secretaries to complete tasks such as minutes, memos, and reports more quickly (Mohr, Turner, Pond, Kamath, De Vos and Carpenter, 2023). Imam, Sani, Gete, Ahamed, Ahmad, Abdulmumin, Yimam, Bello, and Muhammad (2025) reported that a major, well-documented barrier to the utilization of automatic speech-to-text is recognition accuracy, especially for secretaries with non-standard accents, local dialects, or when working in multilingual environments. Imam et al. posited that where transcription systems make frequent errors, secretaries must spend time correcting output, which negates the time-saving benefit and discourages use. Odusanya, Dasaolu and Soyebi (2020) observed that low utilization of transcription tools among secretaries often reflects limited formal training and weak digital skills among secretaries. Odusanya et al. further disclosed that in Nigerian public organizations, secretaries encounter challenges in utilizing modern office technologies when training is inadequate or infrequent; secretaries with low confidence and little hands-on exposure adopt new tools more slowly. This gap between available technology and secretaries' competencies reduces uptake of transcription tools.

Findings of the study revealed that there was a significant difference in the mean ratings of secretaries in public organizations in Ebonyi State on the extent of utilization of transcription tools for effective job performance based on gender. This means that the utilization levels differed significantly between male and female secretaries. Similarly, the findings showed that there was a significant difference in the mean ratings of secretaries in public organizations in Ebonyi State on the extent of utilization of transcription tools based on years of job experience. This also suggests that utilization varies significantly across different experience levels of secretaries.

A significant difference in the mean ratings of secretaries regarding the utilization of transcription tools by gender may stem from differences in technological confidence and exposure to ICT tools. Male secretaries typically display higher self-efficacy and readiness to adopt digital tools compared to female secretaries, who may show hesitation due to lower ICT training and exposure. Olatokun (2017) supports this by noting that male secretaries in Nigeria have higher ICT utilization and confidence than female counterparts, attributed to differing levels of training opportunities. Additionally, the difference in mean ratings of secretaries regarding the utilization of transcription tools based on years of experience could be linked to a digital exposure gap between younger, less experienced secretaries and their older colleagues. Younger secretaries, who are trained with contemporary curricula that include ICT applications, tend to be more adept with modern tools. In contrast, those with longer job experience often adhere to traditional methods, resulting in challenges when adapting to new technologies. A supporting study by Edeh, Okwelle and Ihedioha (2020) confirms this, showing that younger administrative staff are more proficient and willing to use ICT tools due to their recent training and exposure.

Conclusion

Based on the findings, the study concludes that professional secretaries in public organizations in Ebonyi State have not sufficiently embraced AI transcription tools despite their

enormous potential for improving office productivity and work efficiency. The low utilization appears to be associated with inadequate digital competence, limited organizational support, gender differences, and years of job experience. Since AI-powered transcription technologies have become indispensable in modern office administration, improving their utilization through continuous capacity building, provision of digital infrastructure, and institutional support is essential for enhancing secretarial effectiveness in the digital workplace.

Recommendation

Based on the findings of the study, the following recommendation was made:

1. Administrators of OTM programme in Nigerian tertiary institutions should introduce training on AI tools to enable students acquire relevant digital skills needed to utilize AI transcription tools for effective job performance in public organizations.

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