ARTIFICIAL INTELLIGENCE (AI) SKILLS AND JOB PERFORMANCE OF OFFICE MANAGERS IN PUBLIC ORGANIZATIONS

Elizabeth Omone Ojo, PhD
Department of Office Technology & Management, Yaba College of Technology, Yaba, Lagos.
Email: elizabeth.ojo@yabatech.edu.ng
Correspondence: elizabeth.ojo@yabatech.edu.ng

Abstract
The study examined Artificial Intelligence (AI) skills required by office managers for effective job performance in public organizations. Two research questions and two hypotheses were raised. The study approach used was a descriptive survey. The target population comprised all the office managers (Secretaries) from the Ministries of Education, Commerce, Finance, Agriculture, and Community Development in Oke-Mosan, Ogun State. A sample size of 50 office managers was chosen using the purposive sampling approach. Self-developed questionnaire with 0.87 as reliability coefficient was adopted for data collection. The mean and standard deviation were used to answered research question 1. PPMC was used for research question 2. The t-test was used for testing hypotheses. The findings of the study revealed that machine learning skills, critical thinking skills, communication skills, problem solving skills, analytical judgement skills, programming skills, creativity skills, computing skills, data analysis skills and domain knowledge skills were among Artificial Intelligence (AI) skills required by office managers in public organizations. There was positive significant relationship between the independent variables (Artificial Intelligence (AI) skills) and the dependent variable (office managers job performance) in the order of ($r = 0.460$, $P<.05$). It was recommended that government ministries should make an effort to set up programs for training and development that would help office managers work more effectively by acquiring new skills.

Key words: *Artificial Intelligence (AI), Skills, Office Managers, Job Performance, Public Organisations.*

Introduction

These days' offices need office managers who can show initiative, use sound judgment, and make wise judgments within the parameters of their authority. Office managers play fundamental roles in the organization. These include covering meetings, handling all office routine tasks, scheduling tasks in her boss's desk diaries for accurate and thorough job performance, overseeing subordinates, and maintaining other general records (Ebhodaghe & Popoola, 2020). Being the leader and focal point of the

company, office managers have demanding jobs. Office managers occasionally experience depression and discouragement due to their workload being overloaded and their lack of time to complete it all. Even in these situations, the manager may be yelling at staff members to hurry up, which leads to stress as the manager searches for assistance but is met with none (John, 2019). Performance is defined as putting one's talent or course of action into practice. It is often defined as the extent to which a worker helps the company achieve its objectives. Getting the job done well is closely linked to achieving participation, quality, quantity, reliability, and innovation. The work performance of office managers is seen as a measure of the kind of human capital that the company has. Individual, organizational, environmental, motivational, skill level, aptitudes, and work observations are the contributing variables to performance. Performance is significantly impacted by the caliber of the workforce. Success is a given for someone with a high skill level, and success in the workplace is a natural outcome for someone with a high skill set in job knowledge (unique skills, intellect, and work techniques) (Adesanya,et.al., 2020).

The total worth of a person's discrete behavioral episodes to the company over a certain period of time is referred to as their job performance. According to Jamal (2021) job performance is defined as completing given tasks in compliance with organizational policies and making acceptable use of the resources that are available. The impact that proficient job performance has on an organization's workforce is substantial. It serves as a strategy for the company to guarantee output, financial expansion, and survival. Office managers in the public sector, however, have to stay up to date on developments both within and outside their organization. This would allow office managers to continue to learn and quickly and flexibly adapt to a technologically driven world that is always changing. Likewise, office managers are required to collaborate well with others and possess the grace to assess circumstances, create strategies, and carry them out. Office managers are expected to assume complete authority over the workplace, whether or not the boss is there. This places some administrative tasks on the office managers while also creating challenges that must be handled independently of the supervisor (Adesanya & Sotayo, 2022). Office managers thus need to be highly skilled in artificial intelligence and critical thinking. According to Kuteyi & Fasoranti (2020), government offices must have access to ICT resources and equipment, and secretaries must acquire the necessary knowledge and abilities.

Artificial intelligence, which has seen unmatched advancement over the last few years, continues to be the most amazing IT application available today (Kirshan & Atia, 2023). It is defined as a collection of theories and techniques for creating machines capable of acting out knowledge. Artificial intelligence is the process of modeling intelligent behavior with little human intervention using a computer (Kirshan & Atia, 2023). Conversely, AI has provoked discussion among academics and industry professionals.

The academic community predicts that artificial intelligence would result in the loss of millions of jobs and a rise in the unemployment rate (Chaudhuri, 2023). This will result in additional challenges, including the need to reconstruct infrastructure, guarantee vehicle safety, and amend laws and regulations. Although artificial intelligence has several risks, including the ability to turn humans into robots, misjudge individuals, and have an unnecessarily high framework, it may support human resource job (Khokhar, 2023). Simulated intelligence, in any event, may lead to worth co-obliteration when client differences occur. Furthermore, the use of simulated intelligence may also support increased susceptibility to security breaches and vulnerabilities (Chain, 2023). This unfavorable trait is often mentioned as the "clouded side of artificial intelligence," a reference to the risks that simulated intelligence poses to individuals, groups, and society as a whole. Furthermore, according to Begum (2023), artificial intelligence may help businesses advance their presentation. In order to enhance productivity and support innovative management practices, organizations have to rely much more on artificial intelligence for their display job. In light of this, the advancement of computer-based intelligence does not replace human labor; rather, it enhances it. Nevertheless, the use of AI in businesses cannot eliminate jobs or, conversely, alter existing ones while creating new ones in fields like interior design, programming, or even public places (Kardinal, 2023).

Artificial intelligence and its financial implications are constantly promoted. Even though the public discourse about AI has recently shifted toward optimism, the fear that AI simulations would eliminate existing jobs outweighs the opportunities that AI collaboration with humans may provide (Kardinal, 2023). Artificial intelligence may not directly affect an office manager's performance or level of engagement at work when other variables are taken into account. The moderating mechanism used to explain the impacts of Artificial Intelligence on job commitment and office manager performance is change leadership. The effectiveness of an organization is largely determined by its leadership. The company may optimize the potential of using Artificial Intelligence by assuming the leadership position. Authority is the capacity to positively influence people in order to carry out hierarchical objectives (Manis & Madhavaram, 2023). The introduction of artificial intelligence (AI) into the workplace has raised a number of pragmatic and moral concerns. While artificial intelligence (AI) has the potential to improve worker performance and increase productivity and efficiency, it also has the possibility to disrupt labor markets and displace existing workers. Examining the Artificial Intelligence (AI) abilities necessary for office managers to conduct their jobs effectively in public organizations is crucial as AI technology develops.

The current paper adopted the goal-setting theory and Technology Acceptance Model (TAM). Goal-setting theory was first presented by Edwin in 1968. This viewpoint is

that an employee's motivation to give it his all is greatly influenced by his own goals. Among the essential abilities are the capacity to assist team members in defining objectives, assigning roles and duties, and conducting frequent performance evaluations. Managing processes, allocating enough resources, offering workplace training, and providing appropriate performance incentives will all need time and labor. It also suggests that in order to help their business realize its full potential, managers and supervisors should show off the human aspect of their organization. Providing each employee with individualized support and encouragement is the foundation of this human-to-human interaction (Bushiri, 2014). Employee performance is an important multidimensional construct that is meant to provide results and has a tight link with the planned goals of a business, according to Abbas and Yaqoob (2009). As an information systems theory, Davis, (1989) created the technology acceptance model (TAM). The concept is predicated on how people eventually embrace and use technology in terms of its features. TAM models indicate that when innovations in computer-based facilities provide users with new technical obstacles.

Assuming all other factors remain constant, technology adoption is positively correlated with user ease of use. The person context encompasses the qualities of office managers' users, while the technical context pertains to the features of the technology itself, and the implementation context is the user's particular work setting. According to the hypothesis, using certain computer resources will improve output and work performance. It may be used to describe or forecast office mangers behaviors across a wide variety of user computing technologies. It also shows general factors of secretary adoption of innovation in computer-based facilities. This theory/model is pertinent to the research as it's critical to comprehend the impact of computer-based resources on secretaries' output. According to the Technology Acceptance Model (TAM), a variety of variables may affect users' decisions over when and how to employ new software packages that are introduced to them. These elements are essential to comprehending how a single (secretary) responds to information technology. The willingness of a user group to utilize information technology for the tasks that it is intended to enable is known as user acceptance. With their potential and use in almost every human endeavor, computers are seen to have the power to drastically alter information seeking behaviors, social networks, secretary performance expectations, and many other aspects of human endeavors.

While recognizing its limits, Kirshan & Atia (2023) looked at how artificial intelligence (AI) affected worker commitment and performance in the workplace. The study uses a straightforward random sample technique in conjunction with a qualitative research strategy. The results show that AI may have a favorable impact on worker engagement and performance. Catherine et al., (2023) released AI-powered tools and applications as boundary-crossing products to explore the potential effects of AI performance on

employees' job engagement, service, and performance. Job security is portrayed as a modulator of the boundary-crossing process. Several theories, such as those pertaining to self-regulation, goal-setting, and boundary-crossing, suggest these relationships. Participants in the study were Australian full-time employees who had previously used AI-powered technology for work. The results show that AI performance had a substantial influence on employee service performance and work engagement, and that these variables were closely connected with job performance appraisal. In the domains of job engagement and service performance, there were notable mediating effects between AI and work performance. The moderating effect of job security resulted in a considerable improvement in employee work engagement and service performance.

In Ogun State, Nigeria, Odusina et al., (2022) investigated the perceived impact of motivational tools and secretarial skills as predictors of secretaries' work success in private enterprises. Four hypotheses and four research issues were addressed and put to the test. The survey design was descriptive. Secretaries of private organizations in Ogun State, Nigeria, made up the study's population. A sample of 250 secretaries was chosen from among registered private firms in Ogun State, Nigeria, using a basic random sampling approach in conjunction with a multi-stage selection technique. The findings demonstrated that communication skills, analytical/research skills, flexibility/adaptability/managing multiple priorities skills, multicultural sensitivity/awareness skills, planning/organizing skills, result-driven skills, problem-solving/reasoning/creativity skills, interpersonal skills, innovation skills, self-improvement skills, interpersonal relationship skills, and information and communication technology skills were among the indicators of secretaries' job effectiveness in private organizations in Ogun State, Nigeria. There was a strong correlation found between secretarial proficiency and the productivity of secretaries working in private enterprises in Ogun State, Nigeria.

Statement of the Problem

Given how quickly many firms are developing, it is imperative that office managers—who are seen as the backbone of these establishments have the resources necessary to carry out their duties in an efficient manner. This is due to the fact that possessing the necessary abilities at all costs fosters enormous organizational growth, and the risk that lacking them will have a negative impact on the organization rather than a positive one. According to the researcher's own observations, office managers' inability to fulfill the demands of the modern workplace is the primary reason for their poor job performance. Nonetheless, office managers that have the necessary abilities get advantages including increased output, efficacy, work satisfaction, and enhanced performance. Therefore, the purpose of this research was to investigate the Artificial Intelligence (AI) competencies

that office managers need to accomplish their jobs well in public companies.

Objectives of the Study

The main objective of the study was to examine Artificial Intelligence (AI) skills and job performance of office managers in public organizations. Specifically, the study sought to: Identify Artificial Intelligence (AI) skills required by office managers in public organizations.

Research Questions

The following research questions guided this study:

1. What are the Artificial Intelligence (AI) skills required by office managers in public organizations:

2. What is the relationship between Artificial Intelligence (AI) skills and office managers' job performance in public organizations?

Hypotheses

In this research, the following null hypotheses were examined:

H_{01}: There is no significant difference in the mean responses of office managers on Artificial Intelligence (AI) skills required by them in public organizations:

H_{02}: There is no significant difference in the mean responses of office managers on the relationship between Artificial Intelligence (AI) skills and job performance in public organizations.

Methodology

The current investigation used a descriptive survey research methodology. The use of this design was justified by the way it helped the researcher get the data required to meet the study's goals and objectives. The study's target group included all office managers (secretaries), from Oke-Mosan, Ogun State, Nigeria's Ministries of Education, Commerce, Finance, Agriculture, and Community Development. A total of fifty office managers from the Ministries of Education, Commerce, Finance, Agriculture, and Community Development in Oke-Mosan, Ogun State, Nigeria were chosen as the study's sample size using the purposive sampling approach. The researcher created the Artificial Intelligence (AI) Skills and Job Performance

Questionnaire (AISJPQ), which was used to gather data for the study. 3 experts edited and refined the items on the questionnaire mentioned in order to answer research questions and test hypotheses. The instrument (AISJPQ) underwent a reliability test prior to being submitted to sample size for data gathering. Five Olabisi Onabanjo University office managers were given the instrument to use in a test-retest methodology. The collected data were processed to the Pearson Product Moment Correlation (PPMC) algorithm, yielding an instrument reliability score of 0.87. The researcher-developed questionnaire (AISJPQ) was used in this study as the primary data gathering tool. The mean and standard deviation were used as descriptive statistics to address research questions 1 and PPMC was used to answered research question 2. The t-test was used to test hypotheses at 0.05 level of significance.

Results and Discussion of Findings

Research Question 1

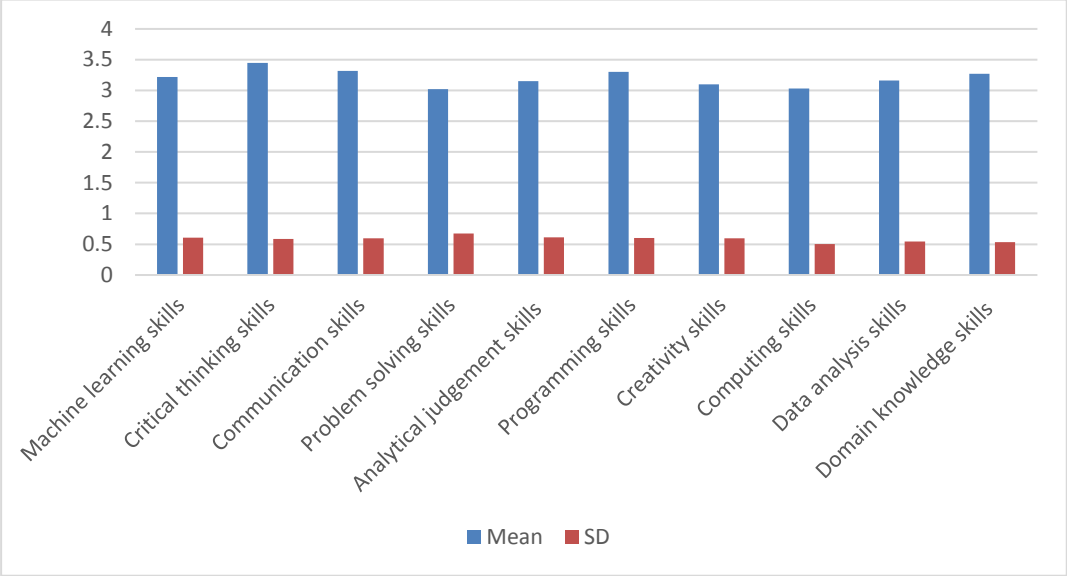
What are the Artificial Intelligence (AI) skills required by office managers in public organizations:

Table 1: Descriptive statistics on the Artificial Intelligence (AI) skills required by office managers in public organizations

Items	Mean	SD
Machine learning skills	3.22	.607
Critical thinking skills	3.45	.584
Communication skills	3.32	.598
Problem solving skills	3.02	.674
Analytical judgement skills	3.15	.614
Programming skills	3.30	.602
Creativity skills	3.10	.599
Computing skills	3.03	.505
Data analysis skills	3.16	.543

Domain knowledge skills	3.27	.533
Cluster Mean	3.20	

Source: Field Survey, 2023



From Table 1, it was revealed that cluster mean was 3.20 which greater than 2.50 bench mark. The implications of this result were that machine learning skills, critical thinking skills, communication skills, problem solving skills, analytical judgment skills, programming skills, creativity skills, computing skills, data analysis skills and domain knowledge skills were among Artificial Intelligence (AI) skills required by office managers in public organizations.

Research Question 2

What is the relationship between Artificial Intelligence (AI) skills and office managers' job performance in public organizations?

Table 2: Relationship between Artificial Intelligence (AI) skills and office managers' job performance in public organizations

Variables	**Mean**	**SD**	**r-value**	**df**	**p-value**	**Remark**
Artificial Intelligence (AI) skills	22.4920	3.31714	.469	6	.000	Significant
Job performance	19.5339	1.86758				

Source: Field Survey, 2023

From Table 2, it was observed that there was positive significant relationship between the independent variables (Artificial Intelligence (AI) skills) and the dependent variable (office managers job performance) in the order of ($r = 0.460$, $P<.05$).

Testing of Hypotheses

Hypothesis One

H_{01}: There is no significant difference in the mean responses of office managers on Artificial Intelligence (AI) skills required by them in public organizations:

Table 3: Significant difference in the mean responses of office managers on Artificial Intelligence (AI) skills required by them in public organizations

Groups	**N**	**df**	**Mean**	**SD**	**t**	**P**	**Decision**
Male	6	48	34.2528	9.0051	7.8927	0.001	Reject the null Hypothesis
Female	44		26.8937	7.5632			

Source: Field Survey 2023

The result from Table 3 shows that the t-value is 7.8927, the degree of freedom (df) is 48 and P = 0.001 since P < 0.05. It implied that null hypothesis was rejected. However, the researcher concluded that there was significant difference in the mean responses of office managers on Artificial Intelligence (AI) skills required by them in public organizations:

Hypothesis Two

H_{02}: There is no significant difference in the mean responses of office managers on the relationship between Artificial Intelligence (AI) skills and job performance in public organizations.

Table 4: Significant difference in the mean responses of office managers on the relationship between Artificial Intelligence (AI) skills and job performance in public organizations

Groups	**N**	**df**	**Mean**	**SD**	**t**	**P**	**Decision**
Male	6	48	29.9471	11.9091	5.8234	0.002	Reject the null Hypothesis
Female	44		23.6392	9.0005			

Source: Field Survey 2023

The result from Table 4 shows that the t-value is 5.8234, the degree of freedom (df) is 48 and P = 0.002 since P < 0.05. It implied that null hypothesis was rejected. However, the researcher concluded that there was significant difference in the mean responses of office managers on the relationship between Artificial Intelligence (AI) skills and job performance in public organizations.

Discussion of the Findings

The study's conclusions showed that office managers in Ogun State's public organizations performed well on their jobs. Office managers in public organizations needed to possess a variety of Artificial Intelligence (AI) skills, including machine learning, critical thinking, communication, problem solving, analytical judgment, programming, creativity, computing, data analysis, and domain knowledge. The study found a statistically significant positive link (r = 0.460, P<.05) between the dependent variable, office managers' work performance, and the independent variables, AI capabilities. The development of technical tools, a lackluster linguistic framework,

insufficient capacity building, flexibility in the face of a changing work environment, time management, and a poor work-life balance were some of the challenges that office managers in public organizations were confronting as they performed their jobs effectively. The findings indicated above align with those of Kirshan & Atia (2023), who discovered that AI may improve worker performance and engagement. The use of computers to simulate intelligent behavior with little to no human intervention is known as artificial intelligence (AI). According to Catherine et al., (2023 study, AI performance had a substantial influence on employee service performance and work engagement. These parameters also showed a strong correlation with job performance appraisal. In the domains of job engagement and service performance, there were notable mediating effects between AI and work performance. According to Amit et al., (2022), technical skills like data mining, programming, statistics, and big data are more valued for machine learning (ML) positions than artificial intelligence (AI) professions. On the other hand, AI positions tend to be more generic and place more emphasis on communication abilities. These well-defined abilities may help both the hiring process and the modification of present course curricula to match the expanding market requirement.

For example, communication skills, analytical/research skills, flexibility/adaptability/managing multiple priorities skills, multicultural sensitivity/awareness skills, planning/organizing skills, result-driven skills, problem-solving/reasoning/creativity skills, interpersonal skills, innovation skills, self-improvement skills, interpersonal relationship skills, and information and communication technology skills were among the indicators of secretaries' job effectiveness in private organizations in Ogun State, Nigeria, according to Odusina et al., (2022). There was a strong correlation found between secretarial proficiency and the productivity of secretaries working in private enterprises in Ogun State, Nigeria. The results also shown a strong correlation between the efficacy of secretaries' work in private firms in Ogun State, Nigeria, and motivating tools. According to Samaila et al., (2022), professional secretaries in Bauchi State, Nigeria's higher education institutions report that their interest and work satisfaction are significantly impacted by the demands and stress of their jobs. It was thus determined that favorable expectations, efficient work resources, and stress management were necessary for secretaries to have job satisfaction, which is seen to be very important for accomplishing the objectives of our postsecondary institutions. According to Aninye-Ranor (2020), OTM graduates perform adequately on the job in management and information technology roles.

Conclusion

Having examined Artificial Intelligence (AI) skills required by office managers for effective job performance in public organizations; the following conclusions were drawn based on the findings of the study that:

1. Machine learning skills, critical thinking skills, communication skills, problem solving skills, analytical judgement skills, programming skills, creativity skills, computing skills, data analysis skills and domain knowledge skills were among Artificial Intelligence (AI) skills required by office managers in public organizations.

2. There was positive significant relationship between the independent variables (Artificial Intelligence (AI) skills) and the dependent variable (office managers job performance) in the order of ($r = 0.460$, $P<.05$).

3. Office managers' mean answers on their degree of work effectiveness in public enterprises varied significantly.

Recommendations

The following recommendations were provided for this study:

1. Government ministries should make an effort to set up programmess for training and development that will help office managers work more effectively by giving them new skills to acquire. The ultimate goal of reaching a productivity level is job training. Therefore, in order to get optimum production, office managers must be trained in AI adoption and then retrained.

2. Considering that their chosen field is always changing and that they will not be left behind in the use of artificial intelligence in this digital era, office managers should always be willing to learn new things and be open to expanding their skill set.

3. Through the collective bargaining process, office managers' pay should be reviewed periodically for increases. Throughout the process, the current state of the economy should be taken into account.

References

Adesanya, A. O., Sotayo, O. A. T. & Bolarinwa, F. B. 2020). Relevance of secretaries' problem-solving skills for improved job performance in Ogun state public service. *Journal of The Business of Education (JTBE), 3*(1), 39-4.

Adesanya, A.O. & Sotayo, A.O.T. (2022). Influence of personal characteristics on secretaries' job performance in public establishments in Ogun State. *Journal for the Promotion/ Advancement of Office Management/Secretarial Profession (Secretarial Forum), 9*(1), 47-63.

Amit, Y., Kamal, L. & Payal, V. (2022). An investigation of skill requirements in artificial intelligence and machine learning job advertisements. *Industry and Higher Education, 36*(1), 63–73.

Aninye-Ranor, C. L. (2020). Evaluation of OTM graduates' job performance in selected government establishments in Delta state. *Nigerian Journal of Business Education (NIGJBED), 7*(1), 200-209.

Begum, S. (2023). Exploring the rural development of China Pakistan Economic Corridor Project Impact on Social Responsibilities and South Region of Pakistan. *International Journal of Special Education, 38*(1), 135–150.

Bushiri, C. A. P. (2014). The impact of working environment on employees' performance: The case of institute of finance management in dar es salaam region.

Catherine, P., Wong, A. W. & Lin, Z. (2023). Artificial intelligence as a boundary-crossing object for employee engagement and performance. *Journal of Retailing and Consumer Services, 7*(3), 1-9.

Chain, C. P. (2023). Bibliometric analysis of the quantitative methods applied to the measurement of industrial clusters. *Journal of Economic Surveys, 33*(1), 60–84.

Chaudhuri, R. (2023). Assessing the AI-CRM technology capability for sustaining family businesses in times of crisis: the moderating role of strategic intent. *Journal of Family Business Management, 13*(1), 46–67.

Ebhodaghe, A. S. & Popoola, K. O. ((2020). Stress and job performance of secretaries in an Organization. *European Journal of Business and Management, 32*(12), 22-27.

Jamal, M. (2021). Job stress and job performance controversy: An empirical assessment. *Organizational Behaviour and Human Performance, 32*, 1-21.

John, M. (2019). Human resource management. Othio: South Western Collage

Publishing.

Kardinal, JJ. S. (2023). The Effect of Eco-Preneurship and Green Technology Management on Greenhouse Gas Discharge: An Analysis on East Asian Economies. *Sustainability*, *15*(8), 40-47.

Khokhar, M. (2023). Occupational health and safety implementation framework for Pakistani construction industry in Sindh province. 3C Tecnología, 253–285.

Kirshan, K. L. & Atia, A. B. (2023). The rise of artificial intelligence and its influence on employee performance and work. *Global Social Sciences Review (GSSR), II*, 463 – 479.

Kuteyi, R. K. & Fasoranti, T. V. (2020). The influence of office automation on secretaries' job performance in government ministry in Ondo state, Nigeria. *International Journal of Educational Research and Management Technology, 5*(2), 106-125.

Manis, K. T. & Madhavaram, S. (2023). AI enabled marketing capabilities and the hierarchy of capabilities: Conceptualization, proposition development, and research avenues. *Journal of Business* Research, 4(1), 157-165.

Odusina, A. O., Dasaolu, O. A. & Agbonna, R. O. (2022). Secretarial skills, motivational tools and secretaries' job effectiveness in private organizations. *Sapientia Foundation Journal of Education, Sciences and Gender Studies (SFJESGS), 4*(1), 65 – 7

Samaila, A. Adamu, I. & Ahmed, A. D. (2022). Influence of job demand and stress on interest and job satisfaction of professional secretaries in tertiary institutions in Bauchi state. *AAU Journal of Business Educators (AAUJBE), 2*(1), 1-10.