

APPLICATION OF ARTIFICIAL INTELLIGENCE IN OFFICE MANAGEMENT AND ITS CHALLENGES IN PUBLIC UNIVERSITIES IN ANAMBRA STATE

Amobi, Chinelo Maryann

*Department of Business Education
Faculty of Technology and Vocational Education
Nnamdi Azikiwe University, Awka
Email- cm.amobi@unizik.edu.ng*

Ile, Chika Madu

*Department of Business Education
Faculty of Technology and Vocational Education
Nnamdi Azikiwe University, Awka
Email-cm.ile@unizik.edu.ng*

Onwubuya, Uju Nkiru

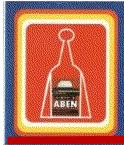
*Department of Business Education
Faculty of Technology and Vocational Education
Nnamdi Azikiwe University, Awka
Email- un.onwubuya@unizik.edu.ng*

Abstract

The study investigated the application of artificial intelligence in Office Management and its impediments in public universities in Anambra state. Two research questions guided the study. Cross sectional descriptive survey research design was used for the study. The population of the study comprised all 156 secretaries in public universities in Anambra State. No sampling was done because the population was manageable. A researcher structured questionnaire was the instrument used for data collection. The instrument was titled Application of Artificial Intelligence in Office Management and its Challenges in Public Universities Questionnaire (AAIOMIPUQ). The reliability of the instrument was established using Cronbach Alpha reliability technique and the indexes of 0.72 and 0.68 were got, showing that the instrument was reliable. The findings of the study revealed among others that most secretaries were not very familiar with artificial intelligence (AI). Also, AI had the potential to increase job satisfaction among secretaries. It was recommended among others that educational institutions should organize regular seminars/conferences for secretaries on the use of AI in office technology and management practices in public universities in Anambra State.

Introduction

Artificial Intelligence (AI) is the development of computer systems and machines capable of performing tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception and natural language understanding. Artificial Intelligence technologies encompass various techniques and approaches, such as machine learning, deep learning, natural language processing, computer vision and robotics. These technologies enable computers to analyze vast amounts of data, recognize patterns, make predictions and automate complex processes. It has applications across numerous fields, including health care, finance, transportation, customer service and education. It has the potential to transform industries, improve efficiency and create new opportunities especially in tertiary institutions.



The goals of tertiary education according to the Federal Republic of Nigeria's National Policy on Education (FRN, 2014), is to: contribute to national development through high-level manpower training; provide accessible and affordable quality learning opportunities in formal and informal education in response to the needs and interests of all Nigerians; provide high-quality career counseling and lifelong learning programme that prepare students with the knowledge and skills for self-reliance and the world of work; reduce skill shortages through the production of skilled manpower relevant to the needs of the labour market; promote and encourage scholarship, entrepreneurship and community service; forge and cement national unity; and promote national and international understanding and interaction. The implementation and realization of tertiary education goals depend on the availability of human and material resources. Artificial intelligence is one of the material resources that can be deployed for effective management of universities.

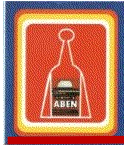
One can argue that artificial intelligence (AI) and robotics represent the future of technology and can perhaps usher in a new era of technological living due to their rapid progress. Many people believe that robots and mechanics will only have an impact on their personal lives through computer-generated home appliances and autonomous cars, but this may not be the case since AI and robotics technology will eventually make an appearance in many industries. Thus, artificial intelligence (AI) can be defined as the theory and creation of computer systems that are capable of carrying out activities that typically require human intelligence, such as speech recognition, visual perception, decision-making, and language translation.

In computer science, artificial intelligence (AI) is concerned with creating intelligent machines that can carry out tasks that normally call for human intelligence. Speech recognition, problem-solving, learning, planning and decision-making are a few examples of these tasks. AI has drawn a lot of interest and is now widely used in a number of sectors, including entertainment, finance, healthcare and transportation. Artificial Intelligence (AI) is the intelligence displayed by computers as opposed to that of humans or animals. "Intelligence" includes the capacity for learning, reasoning, generalization and meaning-inference. Advanced web search engines like Google Search, recommendation systems like those used by YouTube, Amazon and Netflix, speech recognition software like Siri and Alexa, self-driving cars like Waymo, generative or creative tools like ChatGPT and AI art, automated decision-making, and competitive play at the top levels of strategic game systems like a Go and Chess are just a few examples of AI applications (Morozov, 2023).

Simply put, AI is the development of computer systems that can perform tasks that ought to require human beings. It is a complex and multifaceted field that entails the development and implementation of algorithms and technologies that enable machines to learn from data and perform tasks that required human efforts. The concept artificial intelligence has developed significantly since the inception of the field in the mid-20th century, with distinct authors giving their own perceptions and definitions.

Since their development in the 1940s, digital computers have been programmed to carry out very complex tasks such as discovering proofs for mathematical theorems or playing chess with great proficiency. Artificial intelligence (AI) is currently experiencing a critical juncture. The integration of technology into our daily lives has had a significant impact and controversy.

These tasks include learning, reasoning, problem-solving, perception and natural language understanding. Artificial Intelligence technologies encompass various techniques and approaches, such as machine learning, deep learning, natural language processing, computer vision and robotics. These technologies enable computers to analyze vast amounts of data, recognize patterns, make predictions and automate complex processes. Artificial Intelligence has



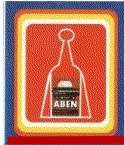
applications across numerous fields, including health care, finance, transportation, customer service and education. It has the potential to transform industries, improve efficiency and create new opportunities (AFSA 2022).

Alagbe et al (2023) viewed AI as the ability of a computer or machine to mimic the capabilities of the human mind – learning from examples and experience, recognizing objects, understanding and responding to language, making decisions, solving problems – and combining these and other capabilities to perform functions humans might perform, such as greeting a hotel guest or driving a car. Artificial Intelligence is the ability of machines to demonstrate human like intelligence by performing cognitive tasks like thinking, perceiving, learning, problem solving and decision making. The technology AI has evolved due to major advances implemented in the collection of data, low cost of data storage and enhanced powers of information processing and computations. It is said that AI might just be the single largest technology revolution of our live times, with the potential to disrupt almost all aspects of human existence. Ogunode and Ukozor (2023) defined AI as programs designed with human-like intelligence and structured in the forms of computers, robots, or other machines to aid in the provision of any kind of service or tasks to improve the social economic and political development of the society. It is an application or programme constructed to carry out tasks with human-like intelligence. Ogunode and Ukozor also viewed Artificial Intelligence as collections systems, packages and applications designed into digital computers or computer-controlled robots to carry out assignments and tasks with human-like intelligence.

AI can play a critical role in tertiary institution management by aiding effective University administration, effective implementation of teaching programmes, enhanced effective student learning in tertiary institutions, and aiding effective conduct of examinations in tertiary institutions. It can support virtual learning, improve research programme development, improve the provision of community service programmes, aid effective data management, improve security and improve attendance of staff. Developments in AI are increasing rapidly and a new technological way of living may just be around the corner. Many people tend to think that robots and mechanics will only impact their personal lives by way of driverless cars and computer-generated home devices. However, this is not the case and AI will be making its debut in all working sectors sooner rather than later. The question that arises is how can one navigate this transition in a way that will secure jobs and complement interaction with robotics as opposed to threatening man's existence. The fear of the loss of jobs was a significant feature of the industrial revolution and technological revolution. However, these periods of history were marked by significant opportunities for economic growth and job creation in new areas. Because there are hardly any practical examples of how a robot may impact the Secretary's job.

The secretarial field entails providing administrative support and assistance to individuals, businesses, organization, or government. Secretaries (office managers) are responsible for a wide range of tasks such as scheduling appointments, correspondence management, preparing reports, answering call and more. The Secretary (office manager) is responsible for advising directors of all laws, regulations and recommended governance practices relevant to the company. The overall monitoring of compliance within organization, including compliance with the company's Memorandum of Incorporation (MOI) rests with the office managers who provide guidance to directors in ensuring the fulfilment of their duties. The overall management and monitoring of meetings is handled by the office managers. .

The hype around AI has reached its peak with many prominent 'techno-savvy' billionaires expressing their views on the possible impact of AI in the future. It is important to keep abreast of these debates and developments so that humans may up skill themselves and



minimize any possible negative impact on them in the future. One of the most prominent debates, which has taken place is that between Elon Musk and Mark Zuckerberg, who expressed conflicting views on the topic of AI. Musk, who is the Chief Executive Officer (CEO) of Tesla and SpaceX and Zuckerberg, who is the CEO of Facebook, adopt different standpoints. Their views can be summarized as follows. Musk approaches AI from a "doom and gloom" standpoint whereas Zuckerberg is of the opinion that AI is something to embrace. Speaking on the topic of AI, Musk advised that AI will cause job disruption and that robots "will be able to do everything better than us." In addition, Musk stated that "AI is a fundamental risk to the existence of human Civilization." (Lobo, et al, 2020). Zuckerberg responded to Musk's comments by saying that AI is going to make lives better in the future, and doomsday scenarios are "pretty irresponsible." Zuckerberg is optimistic and that "in the next five to 10 years, AI is going to deliver so many improvements in the quality of lives." Zuckerberg however cautioned on the proper use of AI and that "technology can generally be used for good and bad. Thus one needs to be careful about how one builds it, how it is going to be used." Musk advocates that the implementation of AI regulations is of paramount importance and should be one of the focal points of governments. Bill Gates, co-founder of Microsoft, echoes Musk's sentiments about AI and states that "first the machines will do a lot of jobs for humans but will not be super intelligent."

The Secretary (office manager) in universities is responsible for the timeous lodgement of documents with the relevant regulatory bodies. According to James (2022), the impact of artificial intelligence on office secretaries has been significant in recent years. Artificial Intelligence tools and technologies have transformed the way administrative tasks are performed, enabling office secretaries to work more efficiently and effectively. It has enhanced automated scheduling, improved communication, increased productivity, job displacement and enhanced data management.

Statement of the Problem

Due to the growth and evolution of the secretarial profession, administrative professional roles and responsibilities have gained prominence. Thus, the need for highly trained personnel is only going to increase. As a result of technological advancements, complex ICT devices and machinery demanding skilled workers with necessary technical understanding to maintain and operate them are today found in offices. The secretarial profession is therefore challenged by a mismatch in talent and skill sets.

In this context, the advancement of artificial intelligence and robotic technology comes to mind and it is perceived to have the potential to significantly impact the role of secretaries (office managers) in Nigeria's universities. However, there seems to be paucity of understanding about the potential benefits and challenges that these technologies may bring to the secretarial profession. Therefore, a need to investigate the application of AI in office technology and management and its challenges in public universities, in order to understand their readiness for the potential changes that these technologies may bring to their profession.

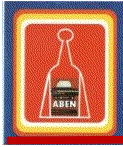
Research Questions

The following research questions guided the study:

1. In what ways is AI technology used in the administration of universities?
2. What are the challenges of artificial intelligence in the management of office tasks universities?

Method

This study investigated the application of AI in office management and its challenges in public universities in Anambra State. Descriptive survey research design was adopted for the study.



This research design allowed the researchers to gather quantifiable information that can be used to make statistical inferences from respondents using questionnaire. The population of the study consisted of 156 Secretaries from two public universities in Anambra State. Census sampling was used because the population was manageable.

Data were collected using a structured questionnaire titled: Application of AI in Office Management and its Challenges in Public Universities (AAIOMIPU). The content validity of the research instrument was ensured by three (3) experts. The instrument was examined for correctness and relevance by these experts. The corrections pointed out by the experts were effected by the researchers. The instrument was subjected to reliability test through trial testing. Twenty copies of the instrument were administered on secretaries (office managers) at University of Nigeria, Nsukka on trial testing. Data collected were analyzed using Cronbach Alpha which yielded reliability coefficient of 0.62. In analyzing and interpreting data generated from the study, descriptive statistics was used to answer the research questions. The analysis was done using SPSS version 21.

Results

Research Question 1: In what ways is AI technology used in the administration of universities?

1. Table 1: Mean ratings of the ways the secretaries in universities apply AI technology in their daily office tasks.

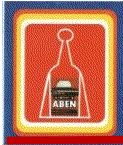
S/N	Item on the application of AI Technology	Mean	Remark
1	AI technology is used for arranging meetings, sending reminders, creation of agenda and minutes	0.40	Disagreed
2	AI technology is used in legislation and regulations in real time and aligning them with university policies	1.02	Disagreed
3	AI technology is used in reducing risks of regulatory breaches among university secretaries	0.51	Disagreed
4	AI technology is used to key information from documents and easily locate vital data	0.52	Disagreed
5	AI technology is used for prediction based on previous data	0.63	Disagreed
6	AI technology is used for students correspondence	2.50	Agreed
7	AI technology is used to respond directly to staff on public fora	0.95	Disagreed
8	AI technology assists job interview preparation	0.71	Disagreed
9	AI technology provides feedback on resume or cover letter	0.62	Disagreed
10	AI technology provides support for special needs students	0.64	Disagreed
Grand Mean		0.84	Disagreed

The data presented in Table 1 show the ways AI technology is used in the administration of universities. The Table reveals that nine items have mean values of 0.51 to 1.02, indicating the respondents disagreed and one item with a mean of 2.50 as agreed. The overall weighted mean of 0.84 suggests that AI technology is not used in the administration of universities.

Research Question 2: What are the challenges of artificial intelligence in the management of office tasks universities?

Table2: Mean Ratings of the Challenges of Artificial Intelligence in Universities' Office Tasks

S/N	Items on Challenges of Artificial Intelligence	Mean	Remark
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1	AI technology has intricate complexities, making it difficult to understand	3.41	Agreed
2	AI technology increases university biases	3.62	Agreed
3	AI technology does not safeguard privacy and data security	2.95	Agreed
4	AI technology does not ensure ethical decision-making	3.11	Agreed
5	AI technology does not address security risks	3.10	Agreed
Grand Mean		3.23	Agreed

Data in Table 2 show challenges of artificial intelligence in the management of office tasks in universities. The Table reveals that five items have mean values of 2.95 to 3.41, indicating the respondents agreed and one item with a mean of 2.50 as agreed. The overall weighted mean of 3.23 suggests that respondents agreed to the challenges of artificial intelligence in the management of office tasks universities

Discussion of findings

The study revealed that secretaries in universities do not apply AI technology in their office administration. The findings of this study are in agreement with those of Havan and Care (2024), who observed that university secretaries have yet to fully adopt artificial intelligence (AI) technologies in their administrative operations. Their study highlighted significant gaps in the use of AI for administrative support, feedback management, data security, and strategic projection. This lack of integration suggests a systemic challenge in leveraging technological innovations for administrative efficiency within university settings.

Furthermore, results of the study revealed that all respondents unanimously agreed that the listed items represent challenges encountered by university secretaries in managing their office tasks, as reflected by a grand mean score of 3.23. These findings underscore the widespread recognition of the difficulties posed by limited AI application in the administrative functions of universities.

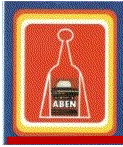
Consistent with the above, this study also aligns with the work of Ephraim (2022), who identified several critical barriers to the adoption of AI in office administration. These include the complexity of AI algorithms, potential biases and discriminatory outputs, challenges in maintaining data privacy, and the lack of assurance regarding ethical decision-making processes. Such issues not only hinder the adoption of AI tools but also raise concerns about accountability, fairness and trust in AI systems within academic institutions.

Altogether, the convergence of findings from this study and prior research highlights the urgent need for capacity-building, policy reform, and infrastructural investment to support the responsible and effective integration of AI technologies in university administration.

Conclusion

The findings of this study clearly indicate that artificial intelligence (AI) technology remains largely underutilized in the administrative operations of universities. Despite the growing global shift toward digital transformation, university secretaries continue to face significant challenges that hinder the integration of AI in their day-to-day office tasks. These challenges include lack of technical know-how, ethical concerns, data privacy issues, and the complexity of AI systems.

Given this reality, it is imperative to **take a firm stand** that without deliberate policy intervention, targeted training, and infrastructural support, the adoption of AI in university administration will remain minimal and ineffective. Therefore, stakeholders in higher education—particularly university management, government agencies, and ICT policy bodies must prioritize



the implementation of AI by investing in digital capacity-building, ethical guidelines, and secure AI systems. Only then can universities harness the full potential of artificial intelligence to enhance administrative efficiency, transparency and decision-making.

Recommendations

Based on the findings of this study, it is recommended that:

1. University managements should organize regular workshops and training programmes to equip secretarial and administrative staff with necessary digital literacy and AI-related skills. This will enhance their competence and confidence in using AI tools for administrative tasks.
2. Government and university authorities should allocate dedicated funding for the acquisition and maintenance of AI technologies tailored to administrative functions such as data management, scheduling, communication, and decision support systems.
3. Regulatory bodies in higher education should develop clear ethical guidelines and data protection policies to guide the safe and responsible use of AI in university administration. This will help address concerns around bias, privacy and ethical decision-making.

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