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Artificial Intelligence and Job Productivity of Academics in Universities in Lagos State

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Abstract

This study investigated the influence of Artificial Intelligence (AI) on the job productivity of academics in public universities in Lagos State, Nigeria,. The study adopted a descriptive survey research design and covered two public universities in Lagos State. The study purposive adopted sampling technique to select forty-eight academic staff from the Departments of Educational Management in both institutions. Data were collected using a structured questionnaire titled *Artificial Intelligence and Academic Staff Job Productivity Questionnaire (ASJPQ)*. Descriptive statistics, including mean and standard deviation, were employed to analyze the data. Findings revealed that the use of AI significantly enhanced teaching effectiveness by improving lesson preparation, instructional delivery, literature search, academic writing, and assessment practices. The results also showed that AI positively influenced research productivity through improved data analysis, collaboration, innovation, and dissemination of scholarly outputs. Furthermore, AI integration moderately reduced administrative workload by facilitating time management, task automation, and efficient handling of academic responsibilities. The study concluded that AI, when ethically deployed and supported by adequate infrastructure and capacity-building initiatives, serves as a strategic tool for enhancing academic productivity in higher education institutions. It therefore recommended continuous professional development, institutional policy frameworks for ethical AI use, investment in digital infrastructure, and the adoption of AI-driven workload management systems.

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Introduction

The core of academics lies in their ability to develop resourceful manpower to fuel the national economy and this define their productivity which is influenced amongst other factors such as personal attributes, competencies, policies, structures, resources available to academics in their institutions and external factors. Job productivity of academics has been reinvented by rapid technological advancements, particularly the application of Artificial Intelligence (AI). According to Daft (2016) and (Robbins & Coulter, 2020), productivity represents the ratio of outputs produced to inputs and Job productivity in academia can be conceptually defined as the measure of efficiency and effectiveness with which academic staff perform their professional roles—including teaching, research, and community service—by transforming available resources (time, knowledge, skills, and institutional support) into measurable outcomes such as publications, student learning achievements, research grants, and professional contributions

Going by this authors, productivity in academia, translates to the extent to which faculty members maximize their intellectual and institutional resources to deliver quality education and research. Job productivity in academia refers to the efficiency, quality, and outcomes of academic activities such as lecturing, publication, research, supervision, and service delivery (Armstrong, 2020). Many challenges confronting job productivityof academics have been described as being multidimensional in nature presenting as institutional, personal and external constraints and varying as workload and role conflict,limited resources and infrastructure,research funding and support, work life balance and stress, technological disruptions and adaptation, institutional bureaucracy and administrative burden and global competition and pressure to publish (Robins& Judge,2019: Altbach, Reisberg, &Rumbley, 2019: Okeke ,2017; Robbins and Coulter ,2020&Altbach et al. 2019).

In the words of Russell and Norvig(2021), Artificial Intelligence (AI) refers to the ability of machines or computer systems to perform tasks that normally require human intelligence, such as reasoning, problem-solving, learning, and decision-making. In the academia, AI is used to perform different tasks ranging from intelligent systems and software such as adaptive learning platforms, plagiarism detection tools, generative AI (e.g., ChatGPT), and automated grading systems to improve teaching, research, and administrative productivity (Laurillard, 2012).AI is increasingly transforming higher education by reshaping how academics engage in teaching,

research, and administrative duties. In this digital age, AI has become a vital tool in enhancing job productivity, though it also introduces new challenges and ethical concerns. The above indicated that the challenges of academics in relation to productivity abounds, thus the need to down play its effect on the system is important for improved efficiency. The researchers therefore intend to investigate the influence of AI on job productivity of academics in universities in Lagos State.

Purpose of the study

This study seeks to:

1. Determine the extent to which AI will affect the quality of Teaching in Public Universities in Lagos State
2. Determine the extent to which AI will affect the quality of Research in Public Universities in Lagos State
3. Establish the extent to which AI integration will reduce Administrative workload of Academics in Public Universities in Lagos State

Research Questions

1. What extent does the use of artificial intelligence affect the quality of teaching in public universities in Lagos State?
2. What extent does the use of artificial intelligence affect the quality of research in public universities in Lagos State?
3. What extent does the integration of artificial intelligence reduce the administrative workload of academics in public universities in Lagos State?

Job Productivity in Academia

Job productivity in academia can be conceptualized as the extent to which academic staff effectively utilizes institutional and personal resources to generate impactful teaching, research, and service outcomes. Job productivity in academics involves the measurable contributions of

scholars toward institutional goals. These include research publications, teaching quality, student supervision, and administrative contributions (Mathis & Jackson, 2011). Productivity is not only quantitative (e.g., number of journal articles or conference papers) but also qualitative, measured in terms of academic impact, innovation, and contribution to societal development (Robbins & Judge, 2019). In the words of Hirsch, (2005), Okeke (2017), Altbach, Reisberg and Rumbley (2019) , academic productivity is not merely about quantity but also about the quality, impact, and relevance of contributions made by academic staff to their institutions and society and is often assessed across three core dimensions these are teaching productivity in terms of quality and quantity of instruction, student evaluations, curriculum development, and mentoring. Research productivity in terms of number and impact of scholarly publications, citation counts, patents, and research grants. Service productivity in terms of participation in administrative duties, professional associations, and community engagement (Altbach, Reisberg, & Rumbley, 2019).

Challenges of Job productivity in Academia

Scholars such as Laurillard (2012), Daft (2016), Okeke (2017), Robbins and Judge (2019), (Altbach, Reisberg, & Rumbley, (2019), Robins and Coulter (2020) discussed extensively the challenges of job productivity of academia to include; Workload and Role Conflict resulting in excessive role demands and conflicting expectations reducing productivity by causing burnout and stress; Limited Resources and Infrastructure common in many universities, particularly in developing countries, insufficient funding, poor laboratory facilities, limited access to digital resources, and outdated libraries constrain academic staff from achieving high research productivity; Research Funding and Support is limited in many higher institutions reducing opportunities for meaningful research outputs and collaboration; Work-life Balance and Stress is experienced due to pressures of publishing, securing tenure, and handling large student populations diminishes productivity, creativity, and overall job satisfaction; Technological Disruptions and Adaptation also present as a challenge to academics who lack digital literacy or training struggle to integrate new technologies into teaching and research, limiting productivity; Institutional Bureaucracy and Administrative Burdens impedes performance and efficiency, as faculty spend significant time on reporting, accreditation, and compliance instead of research and

teaching; Global Competition and Pressure to Publish otherwise known as "publish or perish" culture creates pressure on academics to prioritize quantity of publications over quality.

Artificial Intelligence and Academic Productivity

AI plays a transformative role in enhancing the efficiency and effectiveness of academic work.

(a) Teaching and Learning

AI-powered learning platforms personalize learning, adapt to student needs, and provide real-time feedback. Automated grading and virtual teaching assistants reduce workload, enabling academics to focus on mentorship and research (UNESCO, 2021).

(b) Research and Innovation

AI facilitates literature reviews, citation analysis, and plagiarism detection. Machine learning tools assist in data analysis and pattern recognition, accelerating research outcomes and improving accuracy (Brynjolfsson & McAfee, 2014).

(c) Administrative Functions

AI-based systems automate routine tasks such as scheduling, handling student queries, and managing records, thus improving efficiency in academic institutions (Kaplan & Haenlein, 2020).

(d) Knowledge Dissemination

AI enhances visibility of academic research through digital repositories, search optimization, and recommendation algorithms, expanding scholarly impact (Baker & Smith, 2019).

Challenges of Using AI in Academia

Although Artificial Intelligence (AI) offers numerous benefits for teaching, research, and administration, its adoption in academia faces significant challenges. These challenges can be grouped into ethical, pedagogical, technical, and institutional dimensions.

1. Ethical and Academic Integrity Concerns

AI raises questions of plagiarism, authorship, and fairness in education. Generative AI tools (e.g., ChatGPT) can produce essays, research papers, and coding solutions, which may encourage academic dishonesty and reduce students' independent thinking skills (Russell & Norvig, 2021). According to Robbins and Coulter (2020), ethical dilemmas often emerge when technology advances faster than institutional policies, creating uncertainty in accountability and evaluation.

2. Quality of Learning and Over-Reliance

While AI can provide personalized learning, there is a risk of students and staff becoming overly dependent on these tools. Laurillard (2012) emphasizes that technology should support—rather than replace—critical thinking and creativity. Over-reliance may lead to shallow learning outcomes and reduced problem-solving skills.

3. Bias, Transparency, and Reliability Issues

AI systems are built on datasets that may contain biases, leading to unfair or inaccurate outputs. Goodfellow, Bengio, and Courville (2016) note that machine learning systems are only as good as the data they are trained on, making them prone to error or misrepresentation. In academic contexts, this may distort grading systems, admissions processes, or research results.

4. Technological and Infrastructure Barriers

Implementing AI tools requires significant investment in digital infrastructure, internet access, and faculty training. In many developing countries, universities lack the resources to deploy and maintain such systems (Altbach, Reisberg, & Rumbley, 2019). Daft (2016) explains that organizational productivity is constrained when technology adoption is not supported by adequate resources.

5. Job Displacement and Changing Roles of Academics

There is concern that AI could replace or diminish the role of educators in tasks such as grading, feedback, and even content delivery. While AI enhances efficiency, it may lead to resistance among faculty who fear redundancy or loss of professional autonomy (Okeke, 2017).

6. Institutional Readiness and Policy Gaps

AI. Without guidelines, academics and students face uncertainty in using AI responsibly (Robbins & Judge, 2019). This creates inconsistency in adoption and risks undermining academic credibility.

Methodology

The study employed a descriptive survey research design. The study covered the two Universities of Education in Lagos State(Lagos State University and Lagos State University of Education) and specifically, Staff in the Department of Educational management in these Universities. The population of the study comprised 30 and 24 Academic Staff in the Departments of Educational Management these institutions The study adopted purposive sampling technique to select 48 academic staff from these institutions. A single instrument tagged Artificial Intelligence and Academic Staff Job productivity Questionnaire(ASJPQ) was designed for the study.The data collected were analysed using descriptive statistics such as mean and standard deviation to answer research questions

Results and discussion

RQ1: What extent does the use of artificial intelligence affect the quality of teaching in public universities in Lagos State?

Table 1: RQ1: The extent the use of artificial intelligence affect the quality of teaching in public universities in Lagos State?

ITEMS	N	\bar{X}	SD	Remarks
The use of AI tools (e.g., Chat GPT, Grammarly, Turnitin AI, etc.) improves the quality of my academic work.	48	2.79	1.84	Moderately extent
AI tools help me complete academic tasks more efficiently within limited time frame.	48	4.01	1.23	High Extent
Using AI tools enhances my understanding of complex academic concepts.	48	3.73	1.07	High Extent
AI tools support effective literature search, summarization, and referencing in my academic work.	48	3.83	1.14	High Extent

The use of AI tools has improved my writing, editing, and presentation of academic assignments.	48	3.63	1.06	High Extent
AI tools assist me in solving research related problems and data analysis tasks.	48	3.83	1.12	High Extent
I feel more confident in my academic performance when I use AI-based tools.	48	3.64	1.28	High Extent
The integration of AI tools into academic task promotes creativity and critical thinking.	48	3.69	1.37	High Extent
Excessive reliance on AI tools may reduce independent thinking and academic originality (reverse coded item).	48	3.73	1.21	High Extent
Overall, AI tools positively influence my academic task performance.	48	3.58	1.69	Moderate Extent
Weighted Mean/SD		3.65	1.30	

Decision Benchmark: 1-1.5 Poor extent, 1.5-2.5 Slight extent 2.6-3.5 Moderate extent. 3.6-4.5 High extent, 4.5-5.0 Very high extent

The table above presents the extent to which Artificial Intelligence (AI) influences their academic task performance. Specifically, the respondents strongly agreed that AI helps them complete academic tasks more efficiently within limited time frames ($\bar{X} = 4.01$, $SD = 1.23$), indicating that efficiency is one of the most significant benefits of AI usage. Similarly, high mean scores were recorded for items relating to enhanced understanding of complex academic concepts ($\bar{X} = 3.73$, $SD = 1.07$), support for literature search, summarization, and referencing account for ($\bar{X} = 3.83$, $SD = 1.14$), and assistance in solving research-related problems and data analysis tasks ($\bar{X} = 3.83$, $SD = 1.12$). These findings suggest that AI tools substantially facilitate cognitive processing, academic inquiry, and research productivity. Furthermore, respondents indicated that AI improve writing, editing, and presentation of academic assignments ($\bar{X} = 3.63$, $SD = 1.06$), enhance academic confidence ($\bar{X} = 3.64$, $SD = 1.28$), and promote creativity and critical thinking ($\bar{X} = 3.69$, $SD = 1.37$), all of which were rated to a high extent. The implies that AI contribute positively not only to task completion but also to the quality of academic outputs and students' self-efficacy. However, the item assessing whether the use of AI improves the quality of academic work recorded a moderate extent rating ($\bar{X} = 2.79$, $SD = 1.84$), suggesting

that while AI aids efficiency and understanding, its direct impact on overall academic quality may vary among students. Similarly, the item on overall positive influence of AI on academic task performance yielded a moderate ($\bar{X} = 3.58$, $SD = 1.69$), indicating some reservations, possibly linked to concerns about overdependence. Notably, respondents acknowledged that excessive reliance on AI tools may reduce independent thinking and academic originality ($\bar{X} = 3.73$, $SD = 1.21$), reflecting awareness of potential drawbacks. The weighted ($\bar{X} = 3.65$; $SD = 1.30$) exceeds the decision benchmark for high extent, demonstrating that, overall, students perceive AI tools as significantly beneficial to their academic task performance. The finding indicate that AI has a positive and significant impact on students' academic performance, particularly by improving efficiency, understanding, research support, writing quality, and academic confidence. However, there are mild concerns about its potential effects on academic quality and the risk of reduced independent thinking. These findings highlight the need for a responsible and balanced integration of AI in academic activities. The finding of this study agreed with the outcome of the study carried out by Holmes et al. (2022) who found that balanced AI integration supports personalized learning, enhances assessment accuracy, and promotes adaptive instruction when guided by ethical frameworks and institutional policies. The finding also corroborated the finding of the study conducted by Azevedo et al. (2022) who established that balanced AI application enhances academic productivity while safeguarding learner autonomy and intellectual development.

RQ 2: What extent does the use of artificial intelligence affect the quality of research in public universities in Lagos State?

Table 2: The extent of the use of artificial intelligence affect the quality of research in public universities in Lagos State

ITEMS	N	\bar{X}	SD	Remarks
AI regularly help me engage in research activities relevant to my field of specialization.	48	3.63	1.23	High Extent
My research outputs meet acceptable academic and ethical standards through the use of AI.	48	3.63	1.28	High Extent
AI enables me publish my research findings in reputable, peer journals.	48	3.29	1.57	Moderate Extent

AI helps me demonstrate originality and innovation in my research work.	48	3.77	1.33	High Extent
I am competent in the use of appropriate research methods and analytical techniques as a result of AI assistance	48	3.42	1.41	Moderate Extent
AI assisted me to actively collaborate with other researchers within and outside my institution.	48	3.46	1.49	Moderate Extent
I seek external or internal research funding to support my research activities.	48	3.50	1.25	Moderate Extent
AI assisted in dissemination of my research findings through conferences, seminars, or workshops.	48	3.65	1.25	High Extent
I continually update my research skills and knowledge through training and scholarly engagement offered by AI	48	3.77	1.37	High Extent
Overall, the quality of my research contributes positively to knowledge advancement and institutional reputation through the usage of AI.	48	3.75	1.28	High Extent
Weighted Mean/SD		3.58	1.35	

Decision Benchmark: 1-1.5 Poor extent, 1.5-2.5 Slight extent 2.6-3.5 Moderate extent. 3.6-4.5 High extent, 4.5-5.0 Very high extent

The table presents respondents' perceptions of the extent to which Artificial Intelligence (AI) tools influence their research productivity and scholarly engagement, based on responses from 48 participants. The respondents indicated that AI regularly helps them engage in research activities relevant to their field of specialization ($\bar{X} = 3.63$, $SD = 1.23$), suggesting that AI facilitates continuous scholarly involvement. Similarly, respondents agreed that their research outputs meet acceptable academic and ethical standards through the use of AI ($\bar{X} = 3.63$, $SD = 1.28$). The item on AI enabling respondents to publish their research findings in reputable peer-reviewed journals recorded a moderate mean score ($\bar{X} = 3.29$, $SD = 1.57$), indicating that while AI provides support, publication outcomes may still depend on other critical academic and institutional factors. Furthermore, respondents affirmed that AI helps them demonstrate originality and innovation in their research work ($\bar{X} = 3.77$, $SD = 1.33$). In terms of methodological competence, respondents reported that AI enhances their ability to apply

appropriate research methods and analytical techniques ($\bar{X} = 3.42$, $SD = 1.41$), while also supporting collaboration with other researchers within and outside their institutions ($\bar{X} = 3.46$, $SD = 1.49$). Additionally, respondents moderately agreed that they seek internal or external research funding to support their research activities with the assistance of AI ($\bar{X} = 3.50$, $SD = 1.25$). AI was also found to assist in the dissemination of research findings through conferences, seminars, and workshops ($\bar{X} = 3.65$, $SD = 1.25$), as well as in updating research skills and knowledge through training and scholarly engagement ($\bar{X} = 3.77$, $SD = 1.37$). Overall, respondents perceived that the quality of their research contributes positively to knowledge advancement and institutional reputation through the usage of AI ($\bar{X} = 3.75$, $SD = 1.28$), underscoring the broader academic and institutional benefits of AI integration. The weighted of ($\bar{X} = 3.58$; $SD = 1.35$) indicates a moderate to high extent of AI influence on research productivity. This finding suggests that AI significantly enhance research engagement, methodological competence, collaboration, dissemination, and innovation. The finding of this research work reaffirmed the outcome of the study conducted by Osiughwu (2025) found that AI tools such as ChatGPT improve postgraduate students' research literacy, analytical competence, and confidence, leading to deeper engagement with research tasks. Similarly, the outcome of this study aligned with the studies of Zawacki-Richter et al. (2019) and Yusuf et al (2024) established that AI-supported academic environments promote interdisciplinary collaboration, transparent research practices, and global scholarly networking.

RQ3: What extent does the integration of artificial intelligence reduce the administrative workload of academics in public universities in Lagos State?

Table 3: The integration of artificial intelligence reduce the administrative workload of academics in public universities in Lagos State

ITEMS	N	\bar{X}	SD	Remarks
My teaching load is appropriate for my academic rank and responsibilities through the application of AI	48	3.48	1.27	Moderate Extent
The number of courses I teach allows me to prepare adequately for each class using AI	48	3.60	1.22	High Extent
My research workload is manageable alongside my teaching responsibilities assisted by AI	48	3.67	1.36	Moderate Extent

Administrative duties assigned to me are reasonable and clearly defined and manageable using AI	48	3.81	1.36	High Extent
I am able to balance teaching, research , and administrative responsibilities effectively using AI	48	3.65	1.19	High Extent
My workload allows sufficient time for quality research and publication assisted by AI	48	3.54	1.27	Moderate Extent
The workload assigned to me does not negatively affect the quality of my teaching through the application of AI tools	48	3.58	1.35	Moderate Extent
I experience work-related stress due to excessive academic workload using AI	48	3.46	1.25	Moderate Extent
AI assisted in institutional policies support and equitable distribution of academic workload efficiently.	48	3.58	1.24	Moderate Extent
AI helps in managing and sustaining academic workload.	48	3.69	1.25	High Extent
Weighted Mean/SD		3.61	1.28	

Decision Benchmark: 1-1.5 Poor extent, 1.5-2.5 Slight extent 2.6-3.5 Moderate extent. 3.6-4.5 High extent, 4.5-5.0 Very high extent

The table presents the descriptive analysis of lecturers' perceptions of how Artificial Intelligence (AI) supports the management of academic workload. The findings indicate that most aspects of academic workload management through AI were rated between moderate and high extent and rated the appropriateness of their teaching load for their academic rank ($\bar{X} = 3.48$, $SD = 1.27$) as being to a moderate extent. Similarly, the manageability of research workload alongside teaching responsibilities with AI support ($\bar{X} = 3.67$, $SD = 1.36$) was rated as a moderate extent, while sufficient time for quality research and publication using AI ($\bar{X} = 3.54$, $SD = 1.27$) also reflected a moderate extent. The adequacy of course load to allow sufficient preparation using AI ($\bar{X} = 3.60$, $SD = 1.22$), the reasonableness and clarity of administrative duties ($\bar{X} = 3.81$, $SD = 1.36$), and the ability to effectively balance teaching, research, and administrative responsibilities through AI ($\bar{X} = 3.65$, $SD = 1.19$). In addition, AI support for managing and sustaining academic workload recorded a high extent rating ($\bar{X} = 3.69$, $SD = 1.25$), indicating that AI tools

significantly enhance lecturers' efficiency and productivity. Furthermore, the perception that workload does not negatively affect teaching quality through the use of AI ($\bar{X} = 3.58$, $SD = 1.35$), experiences of work-related stress due to academic workload using AI ($\bar{X} = 3.46$, $SD = 1.25$), and institutional policies supporting equitable workload distribution using AI ($\bar{X} = 3.58$, $SD = 1.24$) were all rated to a moderate extent. The weighted ($\bar{X} = 3.61$, $SD = 1.28$) falls within the benchmark range of high extent, indicating that, overall, AI is perceived to play a substantial role in supporting the effective management of academic workload among lecturers. The overall finding reveals that the application of Artificial Intelligence significantly enhances the management and sustainability of academic workload, enabling lecturers to effectively balance teaching, research, and administrative responsibilities, while moderately reducing workload-related stress and improving productivity. The finding of this study sustained the finding of the earlier study conducted by Baig and Yadegaridehkordi (2025) who revealed that the continuous use of generative AI among academic staff significantly improves job satisfaction, task efficiency, and workload management, leading to sustained productivity and institutional effectiveness. Likewise, the finding of this study is in alignment with the study conducted by Ukozor (2024) who was able to establish that AI-driven instructional and administrative tools significantly enhance lecturers' teaching efficiency, research productivity, and administrative effectiveness in Nigerian universities

Conclusion

The study concluded that, when implemented within ethical frameworks, backed by sufficient infrastructure, and enhanced by ongoing professional growth, artificial intelligence can be a strategic instrument for increasing academic job productivity. Higher education productivity, institutional efficacy, and knowledge development in Nigerian universities could all be significantly impacted by the successful implementation of AI.

Recommendations

In view of the findings, the following recommendations are proposed:

Universities and relevant education authorities should design and implement continuous professional development programmes aimed at improving academics' competencies in the

ethical and effective usage of AI for teaching, research, and administrative functions. Such training will enhance digital literacy, reduce resistance to technological change, and promote innovative academic practices. Institutional policies and regulatory frameworks should be developed to guide responsible AI usage, particularly concerning academic integrity, data privacy, authorship, and ethical research practices. This will help prevent misuse, promote accountability, and sustain academic credibility.

Government and institutional stakeholders should invest in robust digital infrastructure, including reliable internet access, licensed AI tools, data security systems, and technical support units, to ensure sustainable and equitable AI integration across universities. University management should adopt AI-driven workload management systems to ensure equitable distribution of teaching, research, and administrative responsibilities, thereby reducing stress, burnout, and inefficiencies among academic staff. Finally, further empirical studies should be conducted across other states and private universities to provide broader insights into the long-term effects of AI on academic productivity, institutional performance, and higher education transformation in Nigeria.

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