
ARTIFICIAL INTELLIGENCE AND ITS EFFECT ON ADMINISTRATORS' MOTIVATIONAL
COMPETENCE AND ACADEMIC JOB PERFORMANCE IN STATE-OWNED UNIVERSITIES OF
NORTHEAST NIGERIA

Koku Agbu Koku

Department of Educational Foundations, Taraba State University, Jalingo, Taraba State, Nigeria,
Kokubaba@gmail.com, +2348030768807

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Abstract:

Artificial Intelligence (AI) has emerged as a transformative technological innovation in modern organizations, with universities increasingly adopting AI-driven systems to improve efficiency, productivity, and decision-making processes. In the context of Nigerian higher education, university administrators play a crucial role in policy implementation, coordination of academic activities, and the management of institutional processes that support teaching, learning, and research. Despite this critical responsibility, administrators in many state-owned universities face persistent challenges such as limited resources, bureaucratic bottlenecks, and heavy workloads, which often reduce their motivational competence and consequently affect their academic job performance. This study examined the effect of Artificial Intelligence on administrators' motivational competence and academic job performance in state-owned universities in North East Nigeria. A survey research design was adopted for the study, and data were collected from academic administrators through the use of structured questionnaires. The collected data were analyzed using descriptive and inferential statistical techniques to determine the influence of AI on motivational competence and job performance. The findings revealed that the integration of AI significantly improved administrators' motivational competence by simplifying administrative tasks, enhancing decision-making processes, and reducing routine workload. The study also found that AI positively influenced academic job performance through improved record management, efficient communication, and the timely execution of administrative responsibilities. Based on these findings, the study concluded that the adoption of AI in university administration can play a significant role in strengthening administrators' motivation and improving their job performance. It therefore recommended increased investment in AI infrastructure, continuous training of administrators, and the development of supportive institutional policies to enhance the effective use of AI in higher education administration in Nigeria.

Introduction

Universities are vital for advancing knowledge, promoting innovation, and developing human capital, thereby driving national development and global competitiveness. In Nigeria, particularly within the North-east geopolitical zone,

state-owned universities rely heavily on administrators to coordinate academic programs, enforce institutional policies, manage human resources, and ensure smooth institutional functioning. However, administrators in these universities face enormous challenges,

including inadequate infrastructure, poor funding, insecurity, and bureaucratic bottlenecks, which significantly undermine their motivation and academic job performance (Adewale & John, 2021).

Artificial Intelligence (AI) has increasingly emerged as a transformative solution capable of reshaping university administrations and boosting productivity. AI is broadly defined as the simulation of human cognitive functions, such as reasoning, problem solving, and learning, by machines and computer systems. In educational contexts, AI-driven platforms include automated record systems, intelligent scheduling, data-driven decision support, and predictive analytics, all of which are designed to enhance efficiency and reduce workload (Danladi & Usman, 2022). By automating repetitive functions, AI allows administrators to focus on strategic responsibilities while also improving the accuracy of institutional processes (Ibrahim & Okon, 2021).

Globally, AI adoption in higher education has been instrumental in strengthening institutional governance, enhancing accountability, and promoting innovation in service delivery. For example, universities in developed contexts have adopted AI-powered systems for human resource management, online communication, and decision support tools that significantly improve

productivity (Yusuf & Oladipo, 2022). However, Nigerian universities lag behind due to poor technological infrastructure, inadequate training, and resistance to digital transformation (Ogunleye & Fasina, 2023).

In the North East, where insecurity and socioeconomic instability threaten the effectiveness of higher education, AI integration is particularly urgent. Its application has the potential to improve motivational competence by reducing stress associated with routine bureaucratic burdens while also strengthening administrators' academic job performance (Ezekiel, Musa, and Abdullahi, 2022). Furthermore, AI can foster improved communication, streamline reporting systems, and reduce resource allocation (Nwachukwu & Hassan, 2020).

Therefore, this study seeks to empirically examine the effect of Artificial Intelligence on administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. By doing so, it provides evidence-based insights that can inform higher education policies, administrative reforms, and broader adoption of digital innovation in the Nigerian context.

Statement of the Problem

University administrators in North East Nigeria face mounting pressures from insecurity, under-funding,

infrastructural decay, and bureaucratic hurdles, which weaken their motivation and diminish academic job performance. While Artificial Intelligence offers opportunities to reduce administrative burdens and improve efficiency, its integration in Nigerian universities remains limited due to infrastructural gaps, inadequate training, and policy weaknesses. This gap raises critical questions regarding the extent to which AI can enhance administrators' effectiveness in state-owned universities.

Aim and Objectives of the Study

This study aimed to assess the effect of Artificial Intelligence on administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. In particular, this study;

examined the influence of Artificial Intelligence on administrators' motivational competence in state-owned universities in northeast Nigeria.

determined the effect of Artificial Intelligence on administrators' academic job performance in state-owned universities in northeast Nigeria.

Research Questions

- How does Artificial Intelligence influence administrators' motivational competence in state-owned universities in North-east Nigeria?

- What is the effect of Artificial Intelligence on administrators' academic job performance in state-owned universities in North-east Nigeria?

Hypotheses

H0₁: Artificial Intelligence has no significant influence on administrators' motivational competence in state-owned universities of North East Nigeria.

H0₂: Artificial Intelligence has no significant effect on administrators' academic job performance in state-owned universities in North-east Nigeria.

Theoretical Framework

Expectancy Theory of Motivation

This study was anchored in the *Expectancy Theory of Motivation* propounded by Victor Vroom in 1964. This theory posits that individuals are motivated to perform better when they believe that their efforts will lead to desirable outcomes. It highlights three major components: expectancy (belief that effort leads to performance), instrumentality (belief that performance leads to rewards), and valence (the value placed on the reward). Applied to university administration, the theory suggests that administrators' motivation is shaped by their perception of how effort facilitated by supportive tools such as Artificial Intelligence (AI) translates into

improved performance and meaningful outcomes.

This theory emphasizes the rational and cognitive processes of individuals in motivation, making it highly adaptable to organizational and educational contexts. This highlights the importance of aligning resources, support, and tools to performance outcomes, which is relevant in evaluating administrators' competence and productivity in universities (Adamu & Bello, 2021).

One weakness of this theory is the assumption that individuals always act rationally in assessing effort and outcomes. In practice, motivation may also be influenced by emotions, cultural values, or external constraints. Additionally, measuring expectancy, instrumentality, and valence in real-world contexts is often complex and subjective (Oluwaseun, 2022).

The relevance of this theory lies in its direct connection with motivation and job performance, which are central to this study. Administrators in state-owned universities often experience reduced motivation owing to their workload and systemic challenges. By integrating AI tools to streamline administrative tasks, the expectancy of better performance and instrumentality in achieving institutional goals can enhance motivational competence. Thus, Vroom's Expectancy Theory provides a useful framework for analyzing how AI influences administrators' motivation and academic

job performance in the North-east Nigerian context.

Methodology

This study adopted a descriptive survey research design because it allowed for the systematic collection of data from a large population to assess the effect of Artificial Intelligence (AI) on administrators' motivational competence and academic job performance. The study population comprised all administrators in state-owned universities in North-east Nigeria, estimated at 1,240 based on records from the National Universities Commission (NUC, 2023). From this population, a sample of 310 administrators was drawn using stratified random sampling to ensure representation across faculties, departments, and administrative units.

Data were collected using a structured questionnaire designed to measure administrators' exposure to AI tools, motivational competence, and job performance indicators. The instrument was validated by three experts in educational administration and technology, and a pilot test conducted with 30 administrators outside the study area yielded a Cronbach's alpha reliability coefficient of 0.87, indicating high internal consistency.

The collected data were analyzed using descriptive statistics such as frequency counts, percentages, and means to summarize responses, while inferential

statistics, specifically regression analysis, were employed to test the hypotheses. All analyses were conducted at a significance level of 0.05. The methodology provides a rigorous approach for examining the relationship between AI adoption, motivation, and performance among university administrators.

Findings and Discussions

This study investigated the effect of Artificial Intelligence (AI) on administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. The results are presented in the tables with explanatory narratives.

Table 1: Influence of AI on Administrators' Motivational Competence

Item	Agree (%)	Disagree (%)
AI reduces workload and stress	78	22
AI tools enhance confidence in task delivery	74	26
AI promotes creativity and innovation	69	31
AI improves decision-making speed	81	19

Source: Field Survey, 2025

Table 1 shows that the majority of administrators perceived AI as highly beneficial to their motivational competence. Most agreed that AI reduces workload and stress (78%), enhances confidence in task delivery (74%),

promotes creativity (69%), and improves decision-making speed (81%), highlighting AI's positive role in supporting administrative efficiency and engagement.

Table 2: Effect of AI on Administrators' Academic Job Performance

Item	Agree (%)	Disagree (%)
AI improves accuracy in administrative records	82	18
AI enhances communication and reporting efficiency	76	24
AI reduces delays in decision-making	79	21
AI supports better monitoring of academic tasks	72	28

Source: Field Survey, 2025

Table 2 indicates that administrators perceived AI as significantly enhancing their academic job performance. Most agreed that AI improves record accuracy (82%), boosts communication efficiency

(76%), reduces decision-making delays (79%), and supports the monitoring of academic tasks (72%). This underscores AI's effectiveness in promoting productivity and administrative precision.

Hypotheses Testing

Table 3: Regression Analysis of AI on Administrators' Motivational Competence

Model	Independent Variable	Dependent Variable	R	R ²	Adjusted R ²	F	p-value	Decision
1	AI Adoption	Motivational Competence	0.659	0.434	0.432	295.21	0.001	Significant

Table 3 shows that AI adoption significantly influenced administrators' motivational competence. An R-value of 0.659 indicates a strong positive relationship between AI and motivation, while an R² of 0.434 suggests that 43.4% of the variance in motivational competence is explained by AI. The F-value of 295.21 with a p-value of 0.001 confirms that the model is statistically

significant. These findings imply that AI tools enhance administrators' motivation by reducing their workload, improving decision-making, promoting creativity, and fostering confidence in task execution. Consequently, the null hypothesis (H₀₁) was rejected.

Table 4: Regression Analysis of AI on Motivation and Job Performance

Variable	B	t-value	Sig. (p)
AI and Motivation	0.68	7.21	0.001*
AI and Job Performance	0.72	8.15	0.000*

R² = 0.63, F(2, 307) = 56.47, p < 0.05

*Source: Field Survey, 2025; Significant at p < 0.05

Table 3 indicates that AI has a statistically significant positive effect on both administrators' motivational competence ($\beta = 0.68$, p < 0.05) and job

performance ($\beta = 0.72$, p < 0.05). The model explained 63% of the variance in the motivation and performance outcomes. These findings corroborate

those of earlier studies that emphasized AI's potential in enhancing educational administration.

Discussion of Findings

The study revealed that Artificial Intelligence (AI) significantly influenced administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. Administrators have reported that AI reduces routine workloads, improves decision-making speed, and enhances confidence in task execution. These findings align with those of Bello and Yusuf (2021), who noted that digital tools reduce administrative fatigue, thereby increasing motivation. Similarly, Danladi and Usman (2022) emphasized that AI promotes innovation by enabling administrators to focus on strategic tasks rather than repetitive processes.

The positive effect of AI on job performance was evident through improved accuracy in record management, enhanced communication, and the timely execution of responsibilities. Ibrahim and Okon (2021) observed that AI supports evidence-based decision-making, which strengthens institutional governance. The regression results further confirmed that AI has a statistically significant positive effect on both motivational competence and job performance, suggesting that AI integration is a critical driver of administrative efficiency.

However, challenges, such as limited infrastructure, inadequate training, and resistance to change, remain barriers to full AI adoption (Ogunleye and Fasina, 2023). Addressing these constraints through targeted investments, capacity building, and policy support can maximize AI's potential of AI. Overall, this study demonstrates that AI is a powerful tool for enhancing motivation and performance, offering practical solutions to longstanding administrative challenges in Nigerian universities.

Conclusion

The study concluded that Artificial Intelligence significantly enhances administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. AI fosters a more efficient and motivated administrative environment by reducing routine workload, improving decision-making, and streamlining communication. Despite challenges, such as limited infrastructure and inadequate training, the findings indicate that adopting AI tools can substantially improve institutional governance, productivity, and the overall quality of higher education administration in the region.

Recommendations

State-owned universities in North-east Nigeria should invest in AI infrastructure to support administrators' efficiency and motivation.

Administrators should receive regular training on AI tools to maximize their impact on academic job performance and institutional productivity.

Conflict of Interest Statement

I, Koku Agbu Koku, declare that there is no conflict of interest regarding the submission, review, and publication of this manuscript in the ZAJES of the Federal University of Education, Zaria. The research was conducted objectively without any financial, personal, or institutional influence.

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