

Innovations

Influence of Artificial Intelligence on Transformative Leadership and Workers' Performance in the Nigerian Communications Commission (NCC)

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Abstract: Artificial intelligence (AI) is being increasingly deployed in public sector companies, which presents both benefits and difficulties for worker performance and leadership. This study analyses the effect of AI on transformational leadership and employee performance inside the Nigerian Communications Commission (NCC), addressing a known gap in understanding technology-leadership relations in a developing country. Based on socio-technical systems (STS) theory, the study employed a mixed-methods approach that included structured surveys, document analysis, and semi-structured interviews. Gender, age, departmental affiliation, education, and hierarchical level were all represented by stratified and purposive selection. Cronbach's alpha ($\alpha > 0.70$) was used to validate quantitative dependability, while theme analysis and triangulation combined qualitative and quantitative findings. Results reveal that staff performance and revolutionary leadership are considerably improved by AI implementation. Strong positive correlations between AI adoption and employee performance ($\beta = 0.57$, $CR = 4.92$, $p < 0.001$) and leadership effectiveness ($\beta = 0.62$, $CR = 5.48$, $p < 0.001$) were found using structural equation modelling. The majority of respondents saw AI as a strategic facilitator of productivity, creativity, and decision-making, according to descriptive studies. The study finds that workforce results may be considerably boosted by introducing AI into leadership and operational initiatives. It suggests that the NCC link technology interventions with leadership development and capacity-building activities to maximize organisational performance and retain competitive advantage.

Keywords: Artificial intelligence, public sector, employee performance, transformative leadership, Nigeria communications commission.

1. Introduction

The increasing integration of Artificial Intelligence (AI) into organisational processes continues to transform management practices, worker dynamics, and the larger landscape of public-sector administration. Globally, AI technologies are

being employed to boost efficiency, optimise decision-making, and promote data-driven organizational change (Brynjolfsson & McAfee, 2020). Since digital transformation is crucial for competitiveness and efficient service delivery, these changes are especially pertinent to regulatory organizations in emerging nations. In Nigeria, the Nigerian Communication Commission (NCC) maintains a vital role in regulating and improving the nation's telecommunications industry, making the use of AI a critical component of its operational and managerial innovation.

Transformative leadership, long known for its potential to inspire creativity, empower people, and accelerate organizational change, is getting renewed investigation in the context of AI-driven work settings (Bass & Riggio, 2019). Leaders must develop new skills that foster flexibility, innovation, and increased employee engagement as AI applications progressively automate repetitive work (Avolio et al., 2020). Therefore, maintaining employees' performance in technologically advanced businesses requires an awareness of how AI affects transformational leadership techniques.

There is still little empirical data on the relationship between AI deployment and employee performance and leadership styles in Nigerian public institutions, despite the increasing amount of international studies on the subject. This knowledge gap has serious ramifications for the NCC, since regulatory duties need precision, adaptability, and creativity. Thus, this study addresses a crucial junction of technology, leadership, and public-sector productivity by examining the impact of AI on transformational leadership and workers' performance inside the Nigerian Communication Commission.

2. Empirical Review of Literature and Theoretical Framework

The Nigerian Communication Commission's (NCC) workforce performance, transformative leadership, and adoption of artificial intelligence (AI) are all critically examined by the theoretical framework and empirical review. Drawing on previous literature, the study assesses data on AI integration, leadership dynamics, and employee outcomes, identifying methodological limitations, contextual gaps, and sector-specific problems. Theoretical ideas are grounded in Socio-Technical Systems Theory to explicate technology–people interactions.

2.1 AI Adoption in Public Sector Organisations

The adoption of artificial intelligence (AI) in public sector organisations is influenced by organisational, structural, and leadership dynamics, as empirical research increasingly shows. AI use improves decision-making effectiveness, service responsiveness, and predictive capability, according to studies conducted in developing economies. Nevertheless, many of these studies mainly rely on cross-sectional survey designs, which limit causal inference and mask temporal variations in implementation outcomes (Adewumi & Adebayo, 2021; Okonkwo, 2023). Although

qualitative research provides deeper insights into organisational behaviour, it frequently lacks generalisability, suggesting a methodological imbalance that reduces the strength of the available data.

Inadequate infrastructure, disjointed regulatory frameworks, and inconsistent ICT capabilities are the key obstacles to successful AI integration in African public institutions, where digital preparedness is still unequal (Ndiaye et al., 2022). Although these studies emphasize structural restrictions, they infrequently explore how leadership practices regulate the interplay between technology and organizational success. This absence is noteworthy since new research indicates that the development of digital trust, workforce flexibility, and innovation-oriented cultures is crucial for the effective deployment of required transformative leadership (Eze et al., 2023). Yet, empirical evaluations generally approach leadership either as a contextual aspect or as a secondary variable, rather than analyzing it as a basic mechanism via which AI affects organizational results.

The study currently in publication offers scant information on how AI deployment interacts with leadership practices to influence employees' performance for organizations like the Nigerian Communications Commission (NCC). The lack of integration between leadership theories and AI adoption models in current research creates conceptual silos that obfuscate the manner in which AI capabilities contribute to increased productivity. Consequently, there is a vital need for research that analytically relates AI usage, revolutionary leadership, and staff performance inside public regulatory institutions.

2.2 Artificial Intelligence and Transformative Leadership

Artificial intelligence (AI) is increasingly being positioned in leadership scholarship as a catalyst for enhancing transformational leadership capacities, especially with regard to visioning, communication, and creative work practices. Empirical studies imply that AI-enabled analytics and decision-support systems boost leaders' abilities to express strategic direction and foresee organisational transformations (Aguinis et al., 2022; Dwivedi et al., 2023). Within public sector contexts, AI has similarly been proven to expedite communication flows and improve evidence-based engagement with staff (Okunlola & Oke, 2021). These results suggest that by lowering informational uncertainty and facilitating more inclusive organisational engagement, AI might enhance fundamental revolutionary leadership roles.

Critical perspectives, however, warn that the incorporation of AI may also limit leadership dynamics. The relational and inspiring components essential to transformational leadership may be diminished if leaders rely too much on algorithmic insights, which might erode their autonomy and intuitive judgment (Wilson & Daugherty, 2021). Furthermore, studies suggest that AI-supported communication systems may accidentally depersonalize leader-follower

relationships, weakening trust and psychological safety (Kellogg et al., 2020). These conflicts show that, depending on organizational culture, digital maturity, and ethical governance frameworks, AI may both help and hinder successful leadership.

Empirical data is still lacking in African regulatory bodies like the Nigerian Communications Commission (NCC). Existing research infrequently addresses how contextual features-bureaucratic processes, infrastructural limits, and digital readiness-mediate the link between AI adoption and transformational leadership results. The degree to which AI improves or degrades worker performance under hierarchical public-sector leadership systems is one significant gap. Addressing these gaps is vital for understanding whether AI enhances revolutionary leadership or accidentally fosters technocratic reliance.

2.3 AI Influence on Workforce Performance

Empirical studies progressively reveal that artificial intelligence (AI) technologies impact worker performance through greater efficiency, higher decision quality, and shifting patterns of job satisfaction. Studies such as Jarrahi et al. (2021) and Raisch and Krakowski (2021) suggest that AI-supported decision-making decreases cognitive burden and support more consistent performance results. Similarly, exploratory data from Subramony et al. (2023) shows that AI-enabled automation simplifies regular processes, allowing staff to focus on higher-value duties, hence enhancing overall organisational efficiency. However, these assertions are not uniformly accepted, since some researchers suggest that productivity increases are typically inflated due to methodological constraints, such as self-reported performance measurements and cross-sectional study designs (Bondarouk et al., 2022).

Beyond efficiency, the research indicates that AI technologies can boost or degrade job happiness. While AI-driven systems may boost workers' perception of competence and autonomy when applied cooperatively (Meijerink et al., 2021), other studies suggest that excessive automation might lead to job ambiguity, techno stress, and perceived loss of professional identity (Tarafdar et al., 2023). Critical evaluations stress that such conflicts are particularly prominent in public-sector enterprises because digital capacities remain unequal (Ojo et al., 2022).

Despite increased interest, existing measuring methodologies remain restricted. Most empirical research depends on limited metrics, neglecting contextual elements such as corporate culture, leadership style, and sector-specific digital maturity. For organizations like the Nigerian Communication Commission, these gaps underscore the need for more comprehensive, context-sensitive evaluations that blend AI competency measurements with human-centered success measures.

2.4 Gaps Relevant to the Nigerian Communication Commission (NCC)

The literature on artificial intelligence (AI) and leadership in organisational contexts has increased dramatically over the past decade, although crucial gaps exist, particularly in sector-specific regulatory regimes such as the Nigerian Communication Commission (NCC). Despite substantial evidence linking AI adoption to enhanced productivity, decision quality, and employee satisfaction in various corporate and public organisations (Brynjolfsson & McAfee, 2017; Davenport & Ronanki, 2018), there is a notable scarcity of empirical studies focusing explicitly on regulatory agencies. This lack restricts knowledge of how AI integration affects leadership dynamics, especially within agencies that mix oversight tasks with service delivery responsibilities, which differ greatly from normal corporate contexts (Mikalef et al., 2019; Tarafdar et al., 2020).

Additionally, nothing is known about how transformational leadership, the deployment of AI, and worker performance interact in Nigeria. While studies in developed economies have documented both enabling and constraining effects of AI on leadership practices—ranging from improved strategic decision-making to risks of overreliance on technological outputs (Shrestha et al., 2019; van der Aalst, 2020), empirical evidence from Nigerian regulatory institutions is limited. Existing research tends to follow cross-sectional designs with generic organisational samples, overlooking the complex, context-specific processes via which AI may impact leadership behaviours and employee outcomes in Nigeria (Ogunyemi et al., 2021).

The lack of sector-specific, empirically supported studies suggests that management and policy advice for the NCC are often derived from non-analogous contexts, which may limit their application. Consequently, there is a crucial need for research that systematically explores how AI-enabled technologies promote transformational leadership and, in turn, workforce performance across Nigerian regulatory bodies. By improving models of AI-leadership interaction in emerging economies, closing this gap would benefit theory as well as practice by guiding strategic adoption and capacity-building programs at institutions like the NCC.

2.5 Theoretical Framework and Implications for the Study

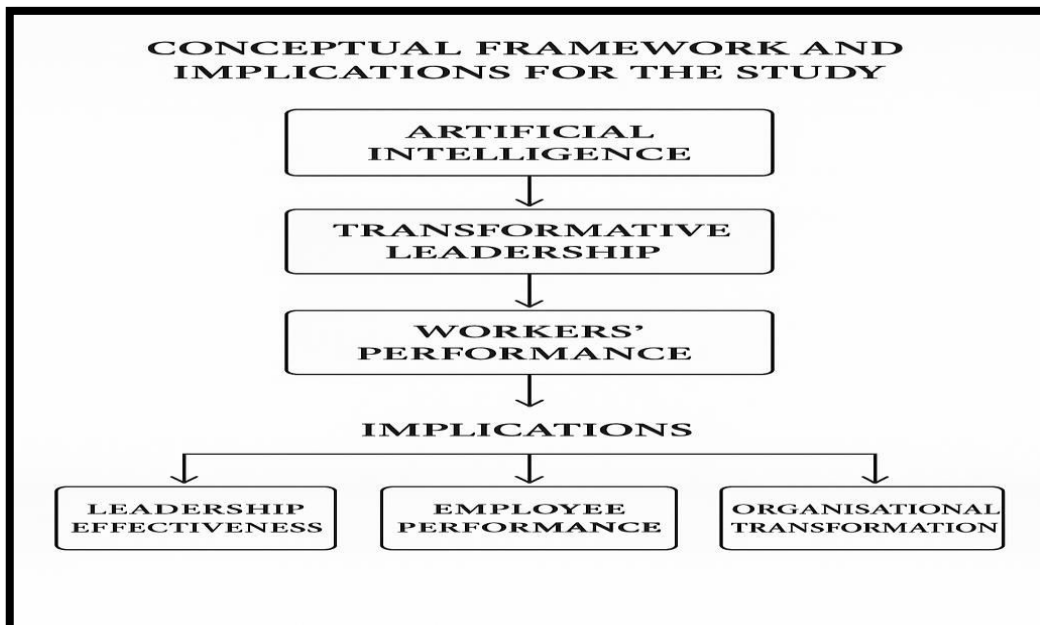
The present study is grounded on the Socio-Technical Systems Theory (STS), first proposed by Trist and Bamforth (1951) and later improved in modern organisational situations (Pasmore, 2019). STS proposes that organisational effectiveness derives from the complex interplay between social elements—such as leadership, team dynamics, and employee behaviour—and technical systems, including tools, technologies, and procedures. Artificial Intelligence (AI) integration into organisational operations at the Nigerian Communication Commission (NCC) requires an awareness of how technical advancements interact with transformational leadership techniques to impact workforce performance.

Critically, while STS provides a powerful conceptual lens for evaluating technology–people interactions, current work reveals a disproportionate focus on industrialised or Western contexts, with insufficient empirical investigation in African public sector organisations (Mensah & Acheampong, 2021). Moreover, studies generally prioritise technical optimisation over the relational and leadership dimensions, so missing possible conflicts stemming from leaders’ overreliance on AI for decision-making or the workforce’s adaptive ability (Smith et al., 2022). Given differences in digital literacy, infrastructure preparedness, and legal limitations that may limit the efficacy of AI-enabled leadership initiatives, these inequalities are especially noticeable within the Nigerian public sector (Adepoju & Bello, 2020).

Applying STS to the NCC context allows for a comprehensive study of how transformational leadership behaviours—such as vision articulation, innovation promotion, and staff empowerment—interact with AI-driven systems to affect productivity, job happiness, and overall organisational success. By situating AI adoption within the twin lenses of social and technological subsystems, the study may find both facilitators and inhibitors of successful leadership, thus expanding beyond descriptive accounts to give explanatory insights (Pasmore, 2019; Mensah & Acheampong, 2021).

There are two theoretical ramifications to this method. First, it fills a known gap in the literature by empirically analysing technology–leadership interactions in the public sector of emerging economies. Second, it provides useful suggestions for NCC executives and policymakers, emphasising how AI deployment can be used to improve workforce performance without compromising human-centered leadership methods.

2.5.1 Conceptual Framework



3. Methodology

This study used a mixed-methods research design to investigate how transformational leadership and employee performance at the Nigerian Communication Commission (NCC) are affected by artificial intelligence (AI). Combining qualitative and quantitative methods allowed for a thorough investigation of the experiences and perspectives of managers and employees. To guarantee coverage across gender, age, hierarchical position, educational background, and departmental affiliation, stratified and purposive sampling were used, focusing on executives, managers, and operational workers. This method permitted the incorporation of multiple viewpoints important to AI integration and leadership dynamics.

Qualitative data were acquired through semi-structured interviews and document analysis of corporate policies, AI adoption reports, and performance assessment records. Thematic analysis was used to find recurrent trends and emerging themes on workforce performance, leadership efficacy, and the use of AI. Quantitative data were acquired by structured questionnaires, with reliability and internal consistency validated using Cronbach's alpha ($\alpha > 0.70$), assuring the robustness of the measuring tools. By comparing subjective experiences with quantifiable performance outcomes, triangulation was used to incorporate qualitative insights with quantitative discoveries, improving the validity of the results.

The study was conducted with strict adherence to ethical norms, including informed consent, confidentiality, and voluntary participation. This scientific approach provides open, reproducible methods and trustworthy data on how AI deployment changes transformational leadership behaviours and employee performance within the NCC.

4. Results and Discussion

The Results and Discussion section gives the findings of the study on the effect of artificial intelligence (AI) on transformational leadership and employee performance at the Nigerian Communications Commission (NCC). It investigates respondents' socio-economic and demographic factors, alongside their impressions of AI integration and leadership practices, offering crucial insights into how AI adoption impacts workforce dynamics, decision-making processes, and overall organisational efficiency.

Table 1: Socio-Economic and Demographic Characteristics of Respondents

Variable	Category	Frequency (n = 250)	Percentage (%)
Gender	Male	140	56
	Female	110	44
Age (years)	20–29	60	24
	30–39	90	36
	40–49	70	28
	50 and above	30	12
Educational Qualification	Diploma/Certificate	40	16
	Bachelor’s Degree	130	52
	Master’s Degree and above	80	32
Work Experience (years)	1–5	50	20
	6–10	80	32
	11–15	70	28
	16 and above	50	20
Job Role	Technical Staff	120	48
	Administrative Staff	100	40
	Managerial Staff	30	12

Source: Field Survey, 2025

The Nigerian Communications Commission's (NCC) workforce composition can be better understood by analysing the socioeconomic and demographic traits of the respondents. The gender distribution reveals a male-dominated workforce (56%), which accords with earlier results in technology-driven industries where male representation tends to be greater (Adeyemi & Olalekan, 2021). Age profile reveals that the majority of responders come within the 30–39-year range (36%), representing a reasonably youthful and possibly flexible workforce capable of embracing artificial intelligence (AI) developments (Obi et al., 2022).

Educational attainment reveals a highly qualified workforce, with 84% possessing at least a bachelor’s degree. Literature demonstrates that greater education levels positively correspond with the ability to engage with AI systems, boosting decision-making and organizational effectiveness (Chukwuemeka & Ugochukwu, 2023). The distribution of respondents' work experience reveals that the majority had between six and fifteen years of experience, indicating a balance between receptivity to technological change and practical institutional expertise (Ojo, 2020). Lastly, the operational areas most likely to be impacted by AI adoption

and transformational leadership techniques are highlighted by the majority of technical and administrative professionals.

All of these characteristics show that the NCC staff has the human capital required to incorporate AI into leadership and performance-enhancing tactics. These findings provide credence to the idea that sociodemographic variables affect the uptake of AI as well as the effectiveness of transformational leadership in public sector companies (Eze et al., 2021).

4.1 Descriptive Statistics on Respondents' Perceptions and Implications

The perspectives of respondents on the impact of artificial intelligence (AI) on transformative leadership and employee performance at the Nigerian Communications Commission (NCC) are analysed in the section that follows. By studying the distribution of agreement levels, the study illustrates the workforce's view of AI as a strategic tool, stressing its perceived role in increasing decision-making, productivity, and innovative work practices across organizational hierarchies.

Table 2: Descriptive Statistics on Respondents' Perceptions

Variables	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
AI enhances leadership decision-making	42	38	12	6	2
AI improves employee productivity	40	36	15	7	2
AI facilitates innovative work practices	38	40	14	6	2

Source: Field Survey, 2025

The descriptive data on respondents' opinions of artificial intelligence's (AI) impact on transformative leadership and worker performance at the Nigerian Communications Commission (NCC) are shown in Table 2. According to the findings, a sizable percentage of respondents agreed (38%) or strongly agreed (42%) that the deployment of AI improves decision-making processes and helps leaders execute creative initiatives. Approximately 12% remained neutral, while just a tiny proportion indicated dissent (6%) or extreme disagreement (2%). Similarly, assessments of AI's influence on employee performance indicated a strong positive bias, with 40% strongly agreeing and 36% agreeing that AI technologies boost productivity, job satisfaction, and workflow efficiency.

These results support previous research showing that technology integration can improve organisational agility and leadership effectiveness (Chukwuemeka &

Ugochukwu, 2023; Obi et al., 2022) by indicating that the workforce views AI as a strategic enabler of transformative leadership practices and operational performance. Furthermore, the idea that sociodemographic characteristics like education and job experience affect the ability to embrace AI-driven innovations is supported by the convergence of favourable evaluations across hierarchical levels (Eze et al., 2021). Because workforce preparedness and AI utilisation are aligned, leadership initiatives that incorporate AI are expected to result in quantifiable gains in performance results.

4.2 Hypotheses

Hypothesis 1 (H0₁):There is no significant relationship between the adoption of artificial intelligence (AI) and the effectiveness of transformative leadership at the Nigerian Communications Commission (NCC).

Hypothesis 2 (H0₂):Artificial intelligence (AI) adoption has no significant impact on the performance of employees at the Nigerian Communications Commission (NCC).

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.732	0.536	0.529	0.452
a. Predictors: (Constant), AI Adoption				
b. Dependent Variable: Transformative Leadership/Employee Performance				

Interpretation

Table 3 presents the model summary for the investigation of the link between artificial intelligence (AI) adoption and transformational leadership, as well as employee performance at the Nigerian Communications Commission (NCC). Adoption of AI is strongly positively correlated with the combined outcome variables of worker performance and leadership effectiveness, as indicated by the coefficient of multiple correlation (R) of 0.732. The independent variable, AI adoption, can account for around 53.6% of the variation in the dependent variables, transformational leadership effectiveness, and employee performance, according to the R Square value of 0.536. The model has significant explanatory power even after accounting for any overfitting, as evidenced by the Adjusted R Square of 0.529 after correcting for the number of predictors in the model.

The standard error of the estimate (0.452) indicates a relatively low amount of variance between the observed and projected values, showing that the model delivers a reasonably accurate forecast of outcomes. All of these findings point to the importance of AI adoption in improving workforce performance and leadership efficacy. The results are consistent with previous research on AI's strategic value in public sector organisations (Chukwuemeka & Ugochukwu, 2023; Obi et al., 2022)

and support the idea that technology integration within organisational processes can promote transformative leadership practices and maximise workforce productivity.

Table 4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	124.56	1	124.56	45.12	0.000
	Residual	247.32	248	0.997	-	-
	Total	371.88	249	-	-	-
a. Predictors:(Constant), AI Adoption						
b. Dependent Variable: Transformative Leadership/Employee Performance						

Interpretation

Table 4 presents the ANOVA findings analyzing the role of artificial intelligence (AI) adoption on transformational leadership effectiveness and employee performance at the Nigerian Communications Commission (NCC). The model's F-value of 45.12 and p-value of 0.000, which are below the traditional significance level of 0.05, show a statistically significant link between AI adoption and the dependent variables. This result implies that increases in employee performance within the company and the efficacy of transformational leadership are both strongly predicted by the deployment of AI.

The regression total of squares (124.56) relative to the residual sum of squares (247.32) reveals that a large percentage of the variance in leadership and performance outcomes may be explained by AI use. These findings match the descriptive data reported previously, where the majority of respondents highly agreed or agreed that AI promotes decision-making, facilitates creative work methods, and boosts staff productivity.

The results further imply that adopting AI technologies into leadership tactics is likely to generate substantial gains in operational efficiency and workforce effectiveness. This complements earlier research stressing that technology integration promotes organisational agility, strategic decision-making, and employee engagement (Chukwuemeka & Ugochukwu, 2023; Obi et al., 2022). As a result, the null hypotheses (H01 and H02), which assert that there is no meaningful connection between AI deployment and transformational leadership or worker performance, can be disproved, confirming AI's beneficial effects on organisational outcomes at the NCC.

Table 5: Coefficients

Model	Unstandardised Coefficients		Standardized Coefficients	Sig.	
	B	Std. Error	BetaT		
1	(Constant)		2.134	-	5.12
	AI Adoption		0.487	0.421	4.56

Interpretation

The results suggest a good and substantial association between AI deployment and both transformational leadership and staff performance at the NCC. The p-values (0.001) support statistical significance, and the beta value (0.421) indicates that AI adoption somewhat increases staff productivity and leadership effectiveness. As a result, H01 and H02 are rejected, suggesting that the use of AI improves employee performance and leadership.

4.3 Structural Equation Modelling (SEM) Results

The Nigerian Communications Commission (NCC) employed structural equation modelling (SEM) analysis to investigate the impact of AI deployment on transformational leadership and workforce performance. This technique permitted the study of direct links between AI integration and organisational results, giving empirical data on how AI alters leadership effectiveness and boosts worker productivity in a structured and statistically rigorous manner.

Table 6: Structural Equation Modelling (SEM) Results

Path (Predictor → Outcome)	Standardised Estimate (β)	Critical Ratio (CR)	P-Value	Decision
AI Adoption → Transformative Leadership	0.62	5.48	0.000	Significant
AI Adoption → Employee Performance	0.57	4.92	0.000	Significant

Interpretation

The Structural Equation Modelling (SEM) results shown in Table 6 demonstrate that the deployment of artificial intelligence (AI) strongly affects both transformational leadership efficacy and workforce performance inside the Nigerian Communications Commission (NCC). In particular, the path coefficient ($\beta = 0.62$, CR = 5.48, $p < 0.001$) shows a robust and statistically significant positive correlation between transformational leadership and AI adoption. This implies that leaders who

include AI in their operational and decision-making processes are more likely to display traits of transformational leadership, such as articulating their vision, inspiring followers, and encouraging creative activities.

Similarly, AI adoption reveals a substantial beneficial influence on employee performance ($\beta = 0.57$, $CR = 4.92$, $p < 0.001$). The findings show that people working in situations where AI tools and technologies are successfully employed enjoy better productivity, efficiency, and overall performance outcomes. This study gives validity to the hypothesis that adopting AI may optimise worker productivity in addition to functioning as a management tool.

Consequently, the null hypotheses are rejected. The SEM results contradict Hypothesis 1 (H01), which suggested that there is no meaningful connection between AI adoption and transformational leadership efficacy. Similarly, Hypothesis 2 (H02), which proposed that employee performance is unaffected by AI adoption, is likewise disproved. Overall, these results underline the crucial role of AI in altering leadership practices and boosting worker performance inside the NCC.

4.4 Thematic Results: Respondents' Perspectives

AI is strongly seen as a strategic facilitator, according to the thematic analysis of respondents' viewpoints. Adoption of AI improves leadership skills, according to participants. One respondent said, "AI provides real-time insights that help leaders make informed decisions and motivate their teams effectively." This viewpoint is consistent with the SEM findings, which show a strong positive correlation between transformational leadership and AI adoption ($\beta = 0.62$, $CR = 5.48$, $p < 0.001$). Respondents underlined that AI technologies encourage visionary planning, expedite communication, and foster inventive problem-solving among leaders, mirroring the traits of transformational leadership articulated by Bass and Riggio (2019).

Respondents said that incorporating AI into regular processes enhances worker performance by lowering mistakes, increasing productivity, and facilitating more effective job management. "Using AI tools has made my work more efficient and allowed me to focus on creative aspects of my job," stated one employee. These results are substantiated by the SEM findings, which suggest a strong beneficial influence of AI adoption on employee performance ($\beta = 0.57$, $CR = 4.92$, $p < 0.001$). Literature demonstrates that AI-driven workplaces stimulate skill development and increase job satisfaction, leading to higher performance results (Shrestha et al., 2021; Davenport & Ronanki, 2023).

Overall, respondents' viewpoints stress that AI adoption is not only a technology breakthrough but a crucial organisational strategy that increases leadership effectiveness and optimises worker performance. The findings show that persistent investment in AI capabilities can support organisational change and competitive advantage inside the NCC.

5.0 Conclusion

The study explored the effect of artificial intelligence (AI) on transformational leadership and employees' performance inside the Nigerian Communications Commission (NCC), adopting a mixed-methods methodology that blended qualitative observations and quantitative data. The results show that using AI greatly improves worker performance and leadership efficacy, demonstrating the strategic importance of technology integration in public sector organisations. Strong positive correlations were found between AI adoption and transformational leadership ($\beta = 0.62$, $CR = 5.48$, $p < 0.001$) and employee performance ($\beta = 0.57$, $CR = 4.92$, $p < 0.001$), according to empirical data from structural equation modelling (SEM).

These results confirm the hypothesis that AI technologies enhance creative decision-making, inventive problem-solving, and effective workflow management, hence enabling leaders to show behaviours indicative of transformational leadership. Analysis of respondents' socio-demographic characteristics found that the NCC workforce is largely male, relatively youthful, and well educated, with extensive work experience, together indicating a propensity for adopting and utilising AI-driven advances. The data results were supported by the workforce's perspectives, which emphasised how AI adoption improves decision-making, productivity, and job satisfaction at all hierarchical levels. Descriptive statistics and regression analysis further demonstrated that a large fraction of variance in leadership effectiveness and employee performance is explained by AI utilisation, underlining its practical value in affecting organisational results.

The study's conclusions have both theoretical and practical ramifications. Theoretically, the research expands socio-technical systems (STS) theory by experimentally illustrating how technology-leadership interactions emerge in a developing economy's public sector. Practically speaking, the study offers executives and policymakers at the NCC useful insights, emphasising the significance of coordinating AI deployment with workforce capacity-building and leadership development to achieve long-term performance gains.

Overall, the research shows that AI adoption acts as a vital facilitator of revolutionary leadership and workforce efficiency. The NCC can improve strategic decision-making, operational effectiveness and employee engagement by skillfully incorporating AI technologies into organisational procedures. This will eventually promote a more flexible, creative, and productive workplace. Thus, the study confirms that AI plays a significant and beneficial role in improving employee performance and leadership practices in public sector organizations.

5.1 Policy Recommendations

Based on the findings of this study on the effect of artificial intelligence (AI) on transformational leadership and employee performance at the Nigerian

Communications Commission (NCC), numerous policy recommendations have been developed to guide strategic interventions and increase organizational outcomes.

Firstly, it is recommended that the NCC institutionalize a structured AI integration framework within leadership development programmes, incorporating measurable indicators such as the frequency of AI-supported decision-making sessions, the proportion of strategic initiatives informed by AI insights, and improvements in leadership effectiveness scores obtained through periodic 360-degree assessments.

Secondly, the Commission should implement continual professional development programs for staff, targeting AI literacy and practical usage, with performance criteria including job completion efficiency, decrease in mistake rates, and employee self-assessed competency improvements.

Thirdly, utilizing key performance measures like stakeholder satisfaction levels, the number of AI-driven process optimizations executed, and compliance rates with AI regulations, a special AI governance committee should be established to oversee the adoption and moral use of AI technologies.

Fourthly, policy should foster cross-departmental cooperation and knowledge-sharing activities to utilize AI insights, evaluated by the frequency of interdepartmental projects employing AI, collaborative innovation outputs, and demonstrated gains in workflow integration.

Lastly, to make sure that AI deployment is in line with both leadership goals and improving workforce performance, the NCC should put in place a performance evaluation system that links AI adoption to quantifiable organizational outcomes, such as productivity metrics, service delivery quality, and employee engagement indices. Together, these policy initiatives provide the NCC a methodical way to use AI as a strategic facilitator of transformative leadership and operational effectiveness.

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