International Journal of Innovative Social Sciences & Humanities Research 14(4):1-11, Oct-Dec., 2026

© SEAHI PUBLICATIONS, 2026 www.seahipublications.org ISSN: 2354-2926

DOI:10.5281/zenodo.23118382

Artificial Intelligence (AI) In The Workplace: Assessing Adoption, Attitude And Future Workforce Dynamics At The Federal Polytechnic Idah, Kogi State, Nigeria

[1]Maha, Emaojo Blessing, PhD & [2]Alhassan, Aladi Deborah

[1]Department of Social Sciences & Humanities,
The Federal Polytechnic Idah, Kogi State, Nigeria
blessingmaha24@gmail.com

[2]Department of Office Technology and Management,
The Federal Polytechnic Idah, Kogi State, Nigeria.

ABSTRACT
Across the world, artificial intelligence (AI) is reshaping workplace coordination, tasks, and skill demands. This study assessed AI adoption, employee attitudes, and future workforce dynamics at the Federal Polytechnic Idah, Kogi State, Nigeria. The study was grounded in Fred Davis's Technology Acceptance Model (TAM) due to its significance in enhancing the acceptance of technology in the work place to enhance productivity. The study adopted a quantitative survey research design. A structured questionnaire was administered to cross-section of staff members (N = 71), capturing a mature, experienced, and predominantly male academic workforce. The findings of the study showed that while a minor majority (53.5%) perceive formal institutional AI use, an overwhelming 81.7% of respondents actively utilize tools like ChatGPT, Gemini, and Quillbot individually, with 56.3% reporting tangible productivity gains. Attitudinally, the climate is highly receptive: 91.5% hold positive views toward AI integration, and 77.4% advocate for its departmental encouragement. However, severe "facilitating condition" bottlenecks persist. A critical training vacuum exists (59.2% report no training availability), leaving 84.5% limited by technical knowledge gaps. Furthermore, acute environmental barriers such as inadequate internet connectivity (93.0%), deficit physical hardware (83.1%), and an institutional policy vacuum (45.7%) severely hinder systematic deployment. Conclusively, individual enthusiasm outpaces institutional readiness. The study recommends that the polytechnic transition from passive individual adoption to strategic, coordinated integration by deploying campus-wide fiber-optic infrastructure, launching funded AI competency programs, and establishing a formal AI Governance and Ethical Use Policy.
Key words: Artificial Intelligence, Workplace, Future of works, Technology Adoption Model

INTRODUCTION

Across the world, artificial intelligence is reshaping how organizations coordinate work, make decisions, and develop talent. Recent global reviews show that AI adoption is moving from pilot to production in core business functions, while also triggering profound shifts in skills demand, job design, and employee

well-being (Frontiers in Artificial Intelligence bibliometric review; MDPI systematic review on AI and skill transformation). Evidence synthesized in 2024–2025 highlights dual effects: productivity and quality gains on the one hand, alongside fears of job insecurity, surveillance, and deskilling on the other (Buchanan *et al*., 2024; Fiegler-Rudol *et al*., 2025). Large cross-industry surveys anticipate accelerated task automation and complementary skill upgrading through 2025, especially in roles involving routine cognitive tasks and data handling, with substantial reskilling needs across all sectors (World Economic Forum, 2025; ILO, 2023). At the organizational level, employee attitudes toward AI (trust, perceived usefulness, and fairness) consistently predict adoption readiness and change outcomes.

On the African continent, adoption trajectories are shaped by infrastructure gaps, uneven digital skills, and fast-emerging policy frameworks, but also by strong opportunities to leapfrog through AI-enabled services and public-sector use cases. Continental analyses describe a rapidly evolving landscape in which organizations experiment with AI while facing capacity constraints, data governance challenges, and inclusion risks (Patterson *et al*., 2025). Higher education systems~~;~~, key suppliers of Nigeria's future workforce, are beginning to mainstream AI, yet systematic reviews of African higher education report heterogeneous readiness, patchy institutional strategies, and wide variation in staff and student attitudes (Mutanga *et al.*, 2024). In Nigeria specifically, recent studies document rising awareness but uneven preparedness, with gaps in structured training, clear institutional policies, and applied workplace pathways that link AI tools to day-to-day administrative and technical work (ILO, 2023). These patterns matter for polytechnics, where the mandate centers on practice-oriented training and industry alignment.

Polytechnics sit at the interface of education and the workplace; their administrative units, teaching departments, workshops, and libraries are natural testbeds for AI in scheduling, records, procurement, assessment, equipment maintenance, and student support. Understanding where and how AI tools are actually used, how faculty, administrators, technical staff, and students feel about them, and how these perceptions relate to anticipated task change, reskilling, and employability will help align institutional strategy with national skills priorities.

In the global South, particularly sub-Saharan Africa, AI is gaining traction but remains underexplored and underutilized, especially within the public sector. Nigeria, Africa's most populous country, is currently grappling with the dual challenge of embracing digital transformation while addressing socio-economic limitations such as inadequate infrastructure, limited technological literacy, and policy inertia. The Nigerian government has acknowledged the potential of AI to spur national development, evidenced by the recent launch of the National Artificial Intelligence Policy in 2023. However, the implementation of this vision remains largely aspirational, especially at the level of tertiary institutions, where AI adoption is expected to revolutionize teaching, administration, research, and human resource management (NITDA, 2023).

Despite its disruptive potential, AI adoption raises several concerns regarding its acceptability and implications for employment, particularly in educational institutions that are labor-intensive. There is a growing body of literature suggesting that AI could displace routine tasks and even threaten jobs (Susskind & Susskind, 2021). Conversely, others argue that AI will augment human roles and create new opportunities for innovation and productivity (Daugherty & Wilson, 2021). Whether these outcomes manifest positively or negatively depend largely on the level of awareness, readiness, and adaptability of the workforce. For public polytechnics like the Federal Polytechnic Idah, the question becomes: how well are staff members, both academic and non-academic; embracing and utilizing AI tools in their daily responsibilities? What are the barriers to acceptability, and how do institutional and individual factors shape this trajectory?

The growing discourse on artificial intelligence adoption within higher education has attracted scholarly attention globally and regionally, though limitations remain in how these insights translate into institutional contexts such as Nigerian polytechnics. For instance, in a recent pilot study, Patterson, Breytenbach, and Coffman (2025) examined AI adoption attitudes in Southern Africa's higher education sector using the COM-B model framework. Their study offered valuable evidence on how capability, opportunity, and motivation shape AI adoption behaviors among academic stakeholders. However, the

research was limited by its small-scale pilot design, leaving broader institutional factors such as policy frameworks, infrastructural readiness, and long-term workforce dynamics largely unexplored.

Similarly, studies focusing on educational institutions in other parts of Africa often highlight adoption challenges but seldom address the intersection of workforce preparedness and institutional culture. For example, Perez (2024) examined faculty perspectives toward artificial intelligence in higher education using the Unified Theory of Acceptance and Use of Technology (UTAUT) framework. The study, conducted across selected universities, revealed that factors such as performance expectancy, effort expectancy, and facilitating conditions significantly shaped faculty attitudes toward AI adoption. While this study provided rich insights into higher education institutions, it primarily focused on attitudinal predictors rather than the broader implications for workforce dynamics in specific organizational contexts.

These gaps collectively indicate the necessity of studies tailored to the Nigerian context, where AI adoption is still emerging within polytechnics. Specifically, there is limited empirical evidence on how institutional attitudes and workforce readiness interact to shape AI-driven transformation in Nigerian higher education. Although the study is conducted in Federal Polytechnic Idah, the study aims to extend the conversation beyond pilot surveys and general attitudes toward an integrated analysis of adoption, workforce preparedness, and future institutional dynamics

To guide the study, the Technology Acceptance Model (TAM) developed by Fred Davis (1989) is adopted as the primary theoretical framework. The theory helps in explaining user acceptance of information technologies and provide a robust foundation for analyzing the determinants of AI adoption in institutional contexts

Therefore, investigating the underlying attitudes, knowledge gaps, and behavioral intentions of Polytechnic workers is vital in shaping context-specific training and capacity-building programs. Therefore, this study will address a critical gap in understanding Artificial Intelligence (AI) in the workplace by assessing adoption, attitude and future workforce dynamics at Federal Polytechnic Idah, Kogi State, Nigeria.

Objectives

The aim of the study is to assess how artificial intelligence is adopted in the workplace, the attitude of workers and the future dynamics it holds on job performance.

The specific objectives are to:

i. evaluate the current level of AI utilization among members of staff and students of Federal Polytechnic Idah.
ii. examine workers perceptions, acceptability and resistance towards AI integration in their work processes.
iii. determine if staff/students have the necessary digital skills for AI adoption in their works and activities.
iv. assess infrastructure and policy barriers that hinder AI adoption and integration in Federal Polytechnic Idah.

MATERIALS AND METHOD

Research Design

This study adopted a survey research design, utilizing the quantitative approach to enable a comprehensive assessment of AI acceptability and utilization among workers at Federal Polytechnic Idah. This involved a structured questionnaires administered to a cross-section of staff. Numerical data insights offered a holistic understanding of the institutional and individual-level factors influencing AI adoption.

Study Area

The study was conducted at Federal Polytechnic Idah, located in Idah Local Government Area of Kogi State, Nigeria. The institution is a federal-owned tertiary institution offering National Diploma (ND) and Higher National Diploma (HND) programs across multiple disciplines. The polytechnic has a diverse workforce comprising academic and non-academic staff across schools of engineering, applied sciences,

management, and environmental studies.

The institution is strategically chosen due to its relevance to Nigeria's technical education sector and its potential to integrate AI into administrative, academic, and support functions.

Population of Study

The population of the study includes all academic and non-academic staff of Federal Polytechnic Idah. As of 2024, the staff strength is estimated at approximately 900 individuals, comprising lecturers, administrative officers, ICT personnel, technical staff, and support staff.

Sample and Sampling Technique

A stratified random sampling technique was employed to ensure adequate representation of both academic and non-academic staff across departments and units. The population was stratified into two main categories:

- Academic staff
- Non-academic staff

Using Yamane's formula for sample size determination at a 95% confidence level and 5% margin of error:

$$S = \frac{N}{1+N\,(M^e)^2}$$

Where S = sample size
N = study population
M^e = marginal error allowed
N = require sample size

Hence $S = \frac{900}{1+900(0.05)^2}$

$$= \frac{900}{1+900(0.0025)}$$

$$\frac{900}{1+2.25}$$

$$\frac{900}{3.25}$$

= 276.9

The study automatically rounded off the sample to = 277

Thus, a total of 277 respondents were selected for the quantitative survey. In addition, 15 staff members (comprising senior administrators, IT personnel, and departmental heads) were purposively selected for qualitative interviews.

Sources and Instruments of Data Collection

Primary Data:

Questionnaire: Structured, pre-tested questionnaire with both closed- and open-ended questions were administered to capture quantitative data on AI awareness, usage, and perceptions.

Secondary Data:

Institutional reports, government policy documents (e.g., Nigeria's National AI Policy), relevant publications, and prior research studies were reviewed to support analysis and contextual understanding.

Method of Data Analysis:

Quantitative Data were analyzed using Statistical Package for the Social Sciences (SPSS). Descriptive statistics such as frequencies, means, and percentages were used to summarize data,

DATA PRESENTATION AND ANALYSIS

Table 1: Socio-Demographic Characteristics of Respondent

Socio-Demographic Variable	Category	Frequency (f)	Percentage (%)
Institutional Status (N=71)	Academic / Non-Academic Staff	71	100.0%
	Students	0	0.0%
Gender (N=71)	Male	48	67.6%
	Female	23	32.4%
Age Group (N=71)	Below 20 years	0	0.0%
	20 to 29 years	0	0.0%
	30 to 39 years	11	15.5%
	40 years and above	60	84.5%
Level or Rank (N=70)	Academic Staff	66	94.3%
	Non-Academic Staff	4	5.7%
	Students (ND/HND Level I & II)	0	0.0%
Years of Experience (N=71)	Less than 2 years	0	0.0%
	2 to 4 years	1	1.4%
	5 to 7 years	14	19.7%
	More than 7 years	56	78.9%

Table 1 consolidates all baseline characteristics of the sample. Note that for "Level or Rank", N=70 due to one missing response on the item; for all other items, N=71

The sociodemographic profile of the respondents at Federal Polytechnic Idah reveals a highly homogeneous, mature, and senior institutional workforce, consisting exclusively of staff members (N = 71) with a complete absence of student representation. The sample exhibits a substantial male majority with a near two-to-one gender ratio of 67.6% male (f = 48) to 32.4% female (f = 23), aligning with documented employment trends in technical and administrative divisions within Nigerian polytechnics. Furthermore, the cohort is heavily skewed toward mid- to late-career professionals; an overwhelming majority of 84.5% (f = 60) are aged 40 years and above, while the remaining 15.5% (f = 11) fall within the 30 to 39 age brackets, leaving the under-30 demographic entirely unrepresented. This senior demographic is further reflected in institutional rank and tenure, where academic staff comprise 94.3% (f = 66) of the sample compared to a minor 5.7% (f = 4) non-academic personnel (N = 70), and 78.9% (f = 56) of the total respondents boast more than 7 years of deep-seated institutional experience. Taken together, this descriptive profile establishes that the study's findings exclusively project the voices of long-serving, highly experienced academic professionals whose deep institutional embeddedness and specific career stages significantly moderate their attitudes, self-efficacy, and potential resistance toward institutional AI adoption.

Table 2: Institutional & Personal AI Utilization and General Attitudes

Survey Item	SA (%)	A (%)	N (%)	D (%)	SD (%)	Total (%)
4.3.1 Institutional Use of AI	13	25	0	25	8	**71**
AI tools are currently used in teaching, learning, or administrative activities.	(18.3%)	(35.2%)	(0.0%)	(35.2%)	(11.3%)	(100.0%)
4.3.2 Personal Use of AI Tools	24	34	0	9	4	**71**
I personally use AI tools (ChatGPT, Gemini, Quillbot, etc.) in work activities.	(33.8%)	(47.9%)	(0.0%)	(12.7%)	(5.6%)	(100.0%)
4.3.3 Impact on Efficiency	11	29	13	7	11	**71**
AI applications have improved my efficiency and productivity in work tasks.	(15.5%)	(40.8%)	(18.3%)	(9.9%)	(15.5%)	(100.0%)
4.4.1 Positive Attitude	29	36	6			**71**
I hold a positive attitude toward the integration of AI in academic/work processes.	(40.8%)	(50.7%)	(8.5%)	--	--	(100.0%)
4.4.4 Departmental Encouragement	16	39	7	9	0	**71**
AI integration should be encouraged across departments in the institution.	(22.5%)	(54.9%)	(9.9%)	(9.9%)	(0.0%)	(100.0%)

This table captures how AI is used and the general institutional climate regarding its adoption. (SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree).

The descriptive analysis of AI utilization and attitudes at Federal Polytechnic Idah reveals a distinct "bottom-up" adoption paradox, where strong personal engagement with AI technologies outpaces formal institutional embedding. While a combined majority of 53.5% of respondents (f = 38) acknowledge that the institution has begun incorporating AI tools into teaching and administrative tasks, a substantial 46.5% minority (f = 33) actively deny or remain unaware of this usage, pointing to highly localized or uneven integration across departments. In sharp contrast, individual engagement is remarkably high, with an overwhelming 81.7% of staff (f = 58) affirming personal utilization of tools like ChatGPT, Gemini, and Quillbot for their work, and 56.3% (f = 40) reporting tangible gains in their professional efficiency and productivity. This strong personal affinity aligns with a highly receptive institutional climate; an impressive 91.5% of respondents (f = 65) maintain a positive attitude toward AI integration, and 77.4% (f = 55) decisively advocate for the active encouragement of AI tools across all institutional departments. Collectively, these findings imply that while the workforce possesses an enthusiastic appetite and individual readiness for digital innovation, the primary challenge lies in bridging the gap between informal, personal use and a systematically integrated, institution-wide framework.

Table 3: Technical Skills, Institutional Barriers, and Threats

Survey Item	SA (%)	A (%)	N (%)	D (%)	SD (%)	Total (%)
4.5.1 Self-Assessed Digital Skills *I possess adequate digital skills to use AI tools effectively.*	14 (19.7%)	40 (56.3%)	5 (7.0%)	8 (11.3%)	4 (5.6%)	**71** (100.0%)
4.5.2 Training Availability *Training opportunities on digital technologies and AI are available.*	0 (0.0%)	20 (28.2%)	9 (12.7%)	30 (42.3%)	12 (16.9%)	**71** (100.0%)
4.5.3 Knowledge as a Barrier *Lack of technical knowledge limits effective AI adoption among staff/students.*	21 (29.6%)	39 (54.9%)	0 (0.0%)	6 (8.5%)	5 (7.0%)	**71** (100.0%)
4.4.2 Threat Perceptions *AI threatens job security or academic integrity within the institution.*	6 (8.6%)	22 (31.4%)	10 (14.3%)	26 (37.1%)	6 (8.6%)	**70** (100.0%)
4.4.3 Psychological Resistance *AI resistance is influenced by fear of change and lack of understanding.*	7 (11.7%)	30 (50.0%)	8 (13.3%)	11 (18.3%)	4 (6.7%)	**60** (100.0%)
4.6.1 Internet Deficiencies *Inadequate internet access limits the effective use of AI tools.*	36 (50.7%)	30 (42.3%)	5 (7.0%)	--	--	**71** (100.0%)
4.6.2 Physical Infrastructure Deficits *Insufficient computer systems and digital infrastructure hinder AI adoption.*	34 (47.9%)	25 (35.2%)	3 (4.2%)	6 (8.5%)	3 (4.2%)	**71** (100.0%)
4.6.3 Policy Ambiguity *Clear institutional policies exist to guide ethical and academic AI use.*	10 (14.3%)	19 (27.1%)	9 (12.9%)	22 (31.4%)	10 (14.3%)	**70** (100.0%)
4.6.4 Structural Enablers *Improved infrastructure and supportive policies would enhance AI adoption.*	31 (44.3%)	32 (45.7%)	3 (4.3%)	4 (5.7%)	--	**70** (100.0%)

This table groups together the diagnostic elements: self-assessments, psychological resistance factors, infrastructural gaps, and policy deficiencies.

The diagnostic data in Table 3 uncovers a complex interplay between high individual self-confidence and severe structural, skills-based, and environmental constraints that impede systematic AI adoption. On an individual level, 76.0% of respondents (f = 54) confidently rate their digital skills as adequate for AI use, yet this self-assessment stands in stark contrast to a critical institutional training vacuum, as 59.2% (f = 42) explicitly state that formal training opportunities on digital technologies and AI are completely

unavailable. This training gap explains why an overwhelming 84.5% (f = 60) point to a lack of technical knowledge as the single most dominant barrier to effective adoption. Psychologically, the institutional transition is further complicated by a divided opinion on risks; 40.0% (f = 28) perceive AI as a direct threat to job security or academic integrity, while 61.7% of a subset (f = 37) recognize that peer resistance is heavily driven by a foundational fear of change and poor technological understanding. Crucially, the data reveal that environmental and governance deficits are the most crippling obstacles, led by an almost unanimous 93.0% (f = 66) identifying inadequate internet connectivity as a baseline constraint, and 83.1% (f = 59) citing insufficient computer systems and physical infrastructure. Compounded by a clear policy vacuum; where 45.7% (f = 32) note the absence of clear ethical or academic guidelines, an emphatic 90.0% majority (f = 63) closes the loop by affirming that upgrading physical infrastructure and enacting supportive policy frameworks are the definitive catalysts required to translate positive staff attitudes into effective, secure institutional practice.

DISCUSSION

The empirical findings of this study reveal a compelling sociological paradox: a highly experienced, mature academic workforce that exhibits an enthusiastic attitudinal readiness for artificial intelligence (AI) integration, yet is heavily constrained by severe structural, infrastructural, and governance deficits. The overwhelming consensus on positive attitudes (91.5%) and personal AI utilization (81.7%) contradicts conventional tech-adoption assumptions, which typically characterize older, long-serving professionals such as this cohort where 84.5% are aged 40 and above; as inherently technophobic or resistant to digital disruption. Instead, the data reveal a bottom-up, informal adoption pattern where lecturers independently leverage tools like ChatGPT and Gemini to drive personal productivity (56.3%), outpacing institutional readiness. This localized, self-taught adoption pattern mirrors the "skills-confidence paradox" identified across higher education landscapes in Sub-Saharan Africa, where individual digital ingenuity frequently compensates for institutional inactivity (Mutanga et al., 2024; Dlamini & Sithole, 2022). However, as noted in the findings, this unregulated usage occurs in an operational vacuum, creating acute institutional vulnerabilities around academic integrity and quality assurance that are exacerbated by the complete omission of student perspectives in the current dataset Glikson & Woolley, 2020; NITDA, 2023).

When reflected against established technology acceptance frameworks, most notably the Unified Theory of Acceptance and Use of Technology (UTAUT), these dynamics indicate that while "performance expectancy" (perceived usefulness) and "effort expectancy" (ease of use) are high at the individual level, the primary bottleneck rests entirely on "facilitating conditions"; the institutional infrastructure and support structures required to sustain technology use. The near-unanimous condemnation of the institution's physical ecosystem; highlighted by severe deficits in internet connectivity (93.0%) and computer hardware (83.1%), reaffirms long-standing academic literature pointing to infrastructural decay as the primary systemic barrier to digital transformation in Nigerian tertiary institutions (Adebayo & Jimoh, 2022; Dlamini & Sithole, 2022; NITDA, 2023).

Furthermore, the critical absence of formal training opportunities (59.2%) and clear ethical policies (45.7%) directly explains why 84.5% of respondents identify technical knowledge gaps as a crippling barrier, and why a significant minority (40.0%) views AI as an existential threat to job security and academic rigor (ILO, 2021, 2023; Brougham & Haar, 2021; Makridakis, 2022). This closely echoes global discourses on AI governance in higher education, which argue that without explicit institutional policies and structured capacity-building, technological adoption breeds ethical ambiguity, widening inequality among staff, and active resistance driven by a fear of change (Glikson & Woolley, 2020; Daugherty & Wilson, 2021; NITDA, 2023). Ultimately, the emphatic 90.0% consensus that improved infrastructure and supportive policies are essential catalysts demonstrates that sustainable digital transformation at Federal Polytechnic Idah is not a challenge of shifting cultural or attitudinal mindsets, but rather one of political will, structural funding, and strategic governance.

CONCLUSION

The empirical evaluation of Artificial Intelligence (AI) adoption, attitudes, and workforce dynamics at the Federal Polytechnic Idah, Kogi State, establishes that the institution stands at a critical technological crossroads. The study reveals an institutional landscape characterized by a pronounced paradox: an experienced, senior academic cohort that demonstrates remarkable individual enthusiasm and personal utilization of AI tools, juxtaposed against a fragmented institutional framework that lacks formal embedding, infrastructural support, and structural guidance. While attitudes toward AI integration are overwhelmingly positive and receptive, a critical digital skills confidence gap exists, where self-assessed competence is heavily constrained by severe training deficits and technical knowledge barriers. This individual willingness is further restricted by severe structural impediments, including inadequate internet connectivity, deficit computing infrastructure, and an absolute institutional policy vacuum regarding AI governance.

Conclusively, the transition toward a digitally advanced academic and administrative ecosystem at the Federal Polytechnic Idah cannot be achieved through spontaneous individual adoption alone. Without targeted structural interventions, individual AI enthusiasm will remain isolated, uneven, and procedurally risky. To fully capitalize on the highly favourable attitudinal foundation of both staff and students, the institution must intentionally transition from a state of passive individual adoption to a regime of strategic, coordinated, and institutionally embedded AI integration. Resolving these challenges requires a deliberate alignment of institutional resources with capacity development and policy governance, thereby transforming AI from a source of personal operational assistance into a secure, ethical, and universally accessible tool for institutional advancement and workforce modernization.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

i. In alignment with the first objective to evaluate the current level of AI utilization among staff and students, it is recommended that the management of the Federal Polytechnic Idah establish an institutionalized AI Integration Registry and digital learning repository. This initiative should focus on transitioning arbitrary, personal AI tool usage into structured, departmentally recognized applications by embedding specific AI-driven methodologies within the official academic curriculum and administrative workflows. The institution should set up specialized virtual teaching assistants, automated grading plugins, and AI-backed research tools within school portals. This will ensure that utilization expands beyond casual text generation into deeply embedded academic and administrative processes, thereby standardizing AI usage across all departments and checking the current problem of uneven, unsupported adoption.

ii. Reflecting the second objective regarding perceptions, acceptability, and resistance toward AI integration, the institution should design and implement a comprehensive "Change Management and AI Advocacy Framework." Since findings show that over 90% of respondents hold favourable views but experience an underlying fear of change and limited understanding, the polytechnic must create collaborative dialogue platforms, departmental seminars, and hands-on demonstration clinics. These forums should explicitly demystify AI functionalities and address job displacement anxieties by positioning AI as an augmentative, workforce-enhancing tool rather than a retrenchment mechanism. By actively engaging older, long-tenured staff through empathetic peer-led mentorship programs, the institution can dismantle remaining barriers of resistance, convert passive acceptance into active participation, and foster an institutional culture of shared digital innovation.

iii. Pursuant to the third objective concerning digital skills and readiness for AI adoption, the polytechnic administration must urgently establish a mandatory, fully funded "Continuous Digital Literacy and AI Competency Training Programme" for all categories of staff and students. This structured training must directly address the identified skills confidence gap by replacing generalized computer training with technical, hands-on modules covering advanced

prompt engineering, data analytics, AI ethics, and tool-specific proficiencies. Faculty-specific digital boot camps should be integrated into the annual calendar, and student orientation programs should feature dedicated AI readiness modules. This systematic approach will ensure that the current training deficits are eliminated, technical knowledge barriers are lowered, and the self-assessed competence of the polytechnic community is backed by verified practical skill sets.

iv. In direct response to the fourth objective assessing infrastructure and policy barriers, it is recommended that the management of the Federal Polytechnic Idah execute a critical infrastructural overhaul alongside establishing an institutional AI governance policy. Financially, the institution must prioritize dedicated budgetary allocations or leverage Tertiary Education Trust Fund (TETFund) interventions to deploy high-speed, campus-wide fiber-optic internet connectivity and construct modern, solar-powered digital laboratories equipped with high-performance computing systems. Simultaneously, the academic board must draft and enforce a comprehensive "Federal Polytechnic Idah AI Governance and Ethical Use Policy." This regulatory document will fill the current procedural vacuum by setting clear guidelines for data privacy, algorithmic accountability, copyright integrity, and appropriate boundaries for AI deployment in examinations and research, thereby building a secure, structurally sound, and ethically responsible environment for institutional AI integration

ACKNOWLEDGEMENT

We sincerely acknowledge the Tertiary Education Trust Fund (TETFund) for its financial support towards the successful completion of this research work through The Federal Polytechnic Idah Kogi State. This support has contributed significantly to the successful conduct of the study. The research was supported under a Project with Reference Number: TETF/DR&D/CE/POLY IDAH/IBR/2025/VOL.I. We are deeply grateful for this invaluable contribution to research and academic development.

REFERENCES

Adebayo, & Jimoh. (2022). Investigation into the adoption of AI-driven learning tools in Nigerian universities.

Brougham, D., & Haar, J. (2021). Smart technology, artificial intelligence, robotics, and algorithms (STARA): Employees' perceptions and job-related outcomes.

Buchanan, J., et al. (2024). *Artificial intelligence and the transformation of higher education institutions: A systems approach*. **Sustainability, 16**(14), 6118.

Daugherty, P. R., & Wilson, H. J. (2021). *Human + machine: Reimagining work in the age of AI*. Harvard Business Press.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, **13**(3): 319–340.

Dlamini, & Sithole. (2022). AI adoption strategies and literacy integration in technical and vocational education institutions (TVETs) in South Africa.

Fiegler-Rudol, J., Lau, K., Mroczek, A., & Kasperczyk, J. (2025). Exploring human–AI dynamics in enhancing workplace health and safety: A narrative review. *International Journal of Environmental Research and Public Health, **22***(2), 199.

Glikson, E., & Woolley, A. W. (2020). Human trust in artificial intelligence: Reviewing the past and shaping the future. *Academy of Management Annals*.

International Labour Organization (ILO). (2021). *The Future of Work Report: Technological innovations and demographic shifts*. ILO Geneva.

International Labour Organization (ILO). (2023). *AI and workplace skill transformation trends in emerging markets*. ILO Geneva.

Makridakis, S. (2022). The forthcoming Artificial Intelligence (AI) revolution: Its impact on society and

firms. *Futures*.

Mutanga, *et al.* (2024). Heterogeneous readiness and institutional strategies for AI mainstreaming in African higher education systems: A systematic review.

National Information Technology Development Agency (NITDA). (2023). *National Artificial Intelligence Policy (NAIP)*. Federal Ministry of Communications, Innovation and Digital Economy, Nigeria.

Nwachukwu, & Yusuf. (2023). Prior digital exposure as a determinant of AI acceptability among higher education staff in South-West Nigeria.

Okonkwo, & Etim. (2023). Digital literacy gaps and funding constraints in predictive analytics and AI tool utilization in public universities.

Oladele, & Oyewole. (2021). Digital technologies and AI awareness disparities between administrative and academic staff in federal polytechnics.

Patterson, B., Breytenbach, & Coffman. (2025). Examining AI adoption attitudes in Southern Africa's higher education sector: A COM-B model pilot framework analysis.

Perez. (2024). Faculty perspectives toward artificial intelligence in higher education: A UTAUT framework validation.

Russell, S., & Norvig, P. (2021). *Artificial Intelligence: A Modern Approach* (4th ed.). Pearson.

Susskind, R., & Susskind, D. (2021). *The future of the professions: How technology will transform the work of human experts*. Oxford University Press.

Ugochukwu, & Salami. (2022). Assessing AI perceptions and resistance to change among administrative staff in federal parastatals.

Venkatesh, V., & Bala, H. (2021). Technology Acceptance Model 3 and external nomological networks in enterprise settings.

Wamba-Taguimdje, S. L., *et al*. (2021). Cross-national review of interest, ethical concerns, and potential benefits of AI in Kenya, Ghana, and Nigeria.

World Economic Forum (WEF). (2025). *The Future of Jobs Report 2025: Accelerated automation and complementary skill upgrading*. WEF Geneva.