

ARTIFICIAL INTELLIGENCE AS A CO-PRODUCER OF HUMAN ENDEAVORS: RETHINKING LEARNING, EMPLOYMENT, AND SOCIAL ORGANIZATION IN CALABAR MUNICIPALITY LGA, CALABAR, NIGERIA

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Abstract

The study examined the Artificial Intelligence as a Co-Producer of Human Endeavors: Rethinking Learning, Employment, and Social Organization in Nigeria and focused on the role of Artificial Intelligence (AI) on learning practices, employment pattern, and social organization in Calabar Metropolis, Cross River State. Two hypotheses guided the study with mixed-methods as research design A population of 400 respondents which was used as sample size since the figure was manageable. Descriptive statistics and Chi-square tests were used to analyze quantitative data. The results showed that 29.3 percent of the participants strongly agreed and 26.3 percent agreed that AI tools enhanced the quality of learning, and 25.3 percent strongly agreed and 29.8 percent agreed that AI tools enhanced individual learning experiences. In work, 23.8 percent had a strong response and 30.8 percent had an agreed response that AI had indeed transformed job roles, as compared to 20.8 percent having a strong response and 27.0 percent having an agreed response that they felt safe despite the introduction of AI. On social organization, 26.8 percent strongly agreed and 13.8 percent agreed that AI had a beneficial effect on social interactions, but only 14.5 percent strongly agreed and 15.0 percent agreed that AI had a beneficial impact on cultural identity or governance. The chi-square tests showed statistically significant association with learning ($p = 0.043$), employment ($p = 0.024$), and social organization ($p = 0.000$). The authors recommended among others that, since AI transforms education, workforce dynamics, and societal structures, specific training of educators and workforce upskilling adoption of AI on its ethical and effective usage should be provided.

Key words: Artificial Intelligence, Learning Processes, Employment Patterns, Job Security, Social Organization, Governance Structures

Introduction

The co-production of human endeavors in Artificial Intelligence (AI) represents a paradigm in which the human ability to create, judge, and have emotions is supplemented with machine accuracy, speed and scalability to produce collaborative results that neither one alone is capable of. In a broad sense, AI can be defined as the computer systems that can do work traditionally requiring human intelligence such as decision-making, learning, and problem-solving. Being a co-producer, AI does not just replace the human labor, but collaborates with people and companies to increase efficiency, innovation, and flexibility in various areas of life, including education, medical care, industry, and creative arts. This collaboration marks the transition of AI as an inactive tool to an active partner in the value creation, influencing services, products, and societal formations. Researchers believe that AI-powered applications when supported with collaboration will be able to enhance human performance and support service co-production (Blaurock, Buettgen, and Schepers, 2024). Meanwhile, critical discourses stress the necessity to reevaluate ethical identity and responsibility when humans and AI become more and more co-agency partners in making decisions (Jie, 2024). In practical terms, AI has become a revolutionary element in improving productivity, streamlining operations, and introducing new practices in the twenty-first century (Akpan et al., 2024). Its application reaches into more specialized domains, like tourism and hospitality, where automation of services through AI balances human experience and technological efficiency to redefine customer experience (Sharma & Aggarwal, 2024). In this way, AI as a co-producer represents both an opportunity and a challenge, which should be carefully incorporated, taking into account human values and using machine intelligence as a means to advance the whole.

The co-production of human activities by Artificial Intelligence is changing the understanding of learning, employment, and social organization on the global scale. In developed economies like the United States, Japan and Germany, AI is integrated into education systems via adaptive learning platforms, smart

classrooms, and virtual tutors, which adjust learning material to fit the needs of individual students. This has not only enhanced the efficiency in delivery of knowledge, but also created lifelong learning that cuts across the traditional structure of schools. Equally, co-production of services by humans and machines is another instance of how AI is changing employment, since machines and humans collaborate in co-producing services, e.g. in medical diagnostic or financial risk management (Blaurock, Buitto, and Schepers, 2024). The social fabric in these countries is changing, too, with AI-driven technologies reshaping the sense of ethical responsibility, accountability, and human identity in the digital era (Jie, 2024). Institutions around the world are reconsidering social organization by putting human-AI collaboration at the heart of governance, production, and sharing of knowledge.

The most apparent transformative aspect of AI is sectoral innovations that integrate human creativity and machine efficiency. AI-based tools are finding application in the arts and creative sector of the United Kingdom and France, where machines are being co-used to create work in music, film, and design with human artists (Boateng, Boateng, and Budu, 2025). In Finland, service industries experience a great level of repetitive work that has been minimized by smart automation with workers being able to work on higher-order problem solving and innovation. In Singapore and Dubai, AI robotics in the hospitality and tourism sector strive to optimize operations of serving guests without losing the personalized experiences (Sharma and Aggarwal, 2024). At the social level, these nations are restructuring in terms of platform-based economies where AI mediates interactions, governance, and even policing in the form of automated surveillance (Wilson, 2021). It requires re-definition of autonomy, agency, and communal identity, which require legal, ethical, and social restructuring (DoCarmo et al., 2021).

The use of AI is coming out with a more reserved yet with profound consequences on learning, jobs, and social order. In Ghana, Kenya, and South Africa, AI applications are increasing access to education by computerizing curricula, providing learning in multiple languages, and closing the divide among underserved populations. As an example, AI-based translation and digital archives have allowed African-language literature and cultural heritage to be seen in the global digital realm and, therefore, make sure that local identities are not lost in the digital realm (Thurman, 2025). The jobs are slowly being transformed as fintech and agritech startups in Kenya and Nigeria apply AI to micro-finance, climate-sensitive agriculture, and entrepreneurial activities, thus transforming how people arrange their work and lives. Nevertheless, there is a fear of digital injustice and how African communities can cope with the moral quandaries of AI implementation without recreating the trends of reliance worldwide (Agbaji, Lund, and Mannuru, 2023).

The co- production capabilities of AI are being experienced in industries of Nigeria although at a disproportionate rate. Education Public libraries and higher education institutions are trying smart technologies in education to create collaborative learning spaces and digital access to communities (Adetayo, 2023). The digitization of broadcasting has created opportunities to engage more in cultural exchange on the global scene and redefine social organization in the context of media platforms (Obot, 2023). Fintech, digital marketing, and the creative industries are growing in job opportunities and are starting to see AI as an addition to human innovation, with Nollywood starting to use machine learning to suggest and edit its content. Similarly, Nigerian workers are struggling with ethical issues of displacement and identity, which need policies that focus on skills growth and access to digital infrastructure that is inclusive (Akpan et al., 2024). The reorganization of the social that AI can cause is seen in cities such as Lagos and Abuja where digital platforms mediate all aspects of life, including transport and trade, and governance, which is a major change in Nigerian life, work, and learning.

Problematic

The profound and intractable issues surrounding the emergence of Artificial intelligence as a co-creator of human activity in Nigeria are threatening to derail the potential benefits of using AI in learning, employment, and social organization. The initial significant challenge is that the digital infrastructure in Nigeria has constantly failed. The lack of reliable electricity supply, low internet penetration, and insufficient technological resources makes the introduction of AI in schools, libraries, and work places virtually impossible to most citizens. Such a structural vulnerability poses a terrifying digital divide, in which urban elites and a small percentage of institutions gain at the expense of rural communities. This unequal access not just contributes to inequality but also entraps social stratification, which echoes the arguments by Agbaji, Lund, and Mannuru (2023), that the Fourth Industrial Revolution can contribute to the further marginalization of the societies that are not set up in a way to address the technology gap.

Another disturbing fact is that the integration of AI in Nigeria is supported by a serious human resource and governance crisis. Most of the labor force is not digitally literate, technically skilled, or critically literate enough to be productive in the AI systems. Rather than empowering citizens, AI risks to replace workers in banking, transportation, and customer care, which will only make the economy that is already weak even weaker. Worse still, Nigeria has shamefully lacked strong policies and legal frameworks that will control the use of AI. There are concerns like breach of data privacy, bias in algorithms and accountability in machine decision making, which are yet to be addressed, and the country is at risk of exploitation and social unrest. The lack of laws in the field of AI, as DoCarmo et al. (2021) caution, poses risky loopholes where no one, neither humans nor machines, is responsible, which builds no trust in institutions or technologies.

The misalignment of cultures and contexts also makes the issue of AI even more problematic in Nigeria. Such excessive reliance on imported technologies marginalizes homegrown innovation and installs systems that tend not to mirror both the linguistic diversity of Nigeria and its cultural practices and social realities. This dependency does not only suffocate local creativity; it is also a threat to erase the culture as communities are compelled to adjust to technologies that are tailored to other foreign environments. In education and the creative arts, as in the case of cultural preservation, AI may be a means of cultural preservation, but in Nigeria it tends to increase the risk of cultural alienation. Thurman (2025) illustrates how African-language literatures on the internet can be seen as both promise and threat because technology can both preserve the past and also pervert its meaning. This unresolved tension in Nigeria is why AI is not a partner of co-production but a disruptive influence destabilizing learning, livelihoods and fracturing social organization.

Literature review

Impact of Artificial Intelligence on learning processes and educational systems

According to Tapalova & Zhiyenbayeva, 2022; Lin, Huang, & Lu, 2023, the integration of Artificial Intelligence (AI) into educational systems has increasingly been recognized as a transformative force, reshaping learning processes and institutional practices worldwide. Scholars highlight that AI applications in education provide opportunities for personalized learning, adaptive assessment, and intelligent tutoring, creating environments where learners can progress

at their own pace. Studies emphasize that AI-driven systems, such as recommendation engines and predictive analytics, enable educators to identify learning gaps, provide targeted interventions, and enhance overall instructional quality (Yuskovych-Zhukovska et al., 2022). In practical terms, AI tools facilitate automated grading, plagiarism detection, and administrative task optimization, allowing teachers to allocate more time to creative and interactive pedagogical strategies. Consequently, AI is not merely a supplementary tool but a co-producer of the educational experience, fostering both efficiency and individualized learning outcomes. The studies above relate with the present study.

Oluwafemi Ayotunde, Jamil, & Cavus, 2023 carried out empirical research on AI's impact which extends beyond conventional classrooms, significantly influencing domain-specific learning and digital literacy. Also, studies according to Almasri, 2024 show that AI-powered Learning Management Systems (LMS) support interactive exercises, immediate feedback, and adaptive content, resulting in improved learner engagement and linguistic competence. Similarly, in STEM education, AI applications such as intelligent tutoring systems and virtual labs enhance conceptual understanding and problem-solving skills by providing real-time guidance and scenario-based simulations. Additionally, AI technologies like ChatGPT have been explored as supplementary learning companions capable of assisting students in research, content generation, and critical thinking exercises (Malinka et al., 2023). These developments suggest that AI contributes to a more inclusive and flexible learning ecosystem, accommodating diverse learner needs and promoting self-directed education, particularly in contexts where teacher-student ratios are high or resources are limited.

Despite these advantages, empirical studies also identify challenges and critical considerations associated with AI adoption in education. Research indicates that successful implementation depends on appropriate infrastructure, educator training, and ethical oversight to prevent algorithmic bias, privacy violations, and over-reliance on automated feedback (Jaiswal & Arun, 2021; Xu & Ouyang, 2022). Moreover, scholars argue that the transformative potential of AI is contingent on sustainable integration strategies that align technology with pedagogical goals and institutional policies (Kamalov, Santandreu Calonge, & Gurrib, 2023).

Influence of Artificial Intelligence on employment patterns and job security

The integration of Artificial Intelligence (AI) into workplaces is profoundly reshaping employment patterns and raising concerns about job security across industries. Empirical studies suggest that AI, robotics, and automation are redefining the nature of work, often displacing routine and manual tasks while simultaneously creating demand for higher-order cognitive and technical skills (Bhargava, Bester, & Bolton, 2021; Malik, Tripathi, Kar, & Gupta, 2022). Employees perceive these changes as both an opportunity for skill enhancement and a threat to traditional job roles, resulting in mixed feelings about employability and long-term career stability. Specifically, research indicates that sectors like manufacturing, banking, and customer service are experiencing accelerated workforce transformation, with AI-driven systems assuming responsibilities previously handled by human workers (Ojiji, Oji, Aikabeli, Oji, & Ayegbusi, 2023).

The psychological and social impact of AI on employment is equally significant, as employees often experience heightened job insecurity and stress due to the unpredictability of automated systems. Studies in hospitality and service industries demonstrate that staff exposed to AI adoption report reduced perceptions of job stability and diminished trust in organizational structures (Koo, Curtis, & Ryan, 2021; Braganza, Chen, Canhoto, & Sap, 2021). Similarly, Achar and Andortan (2025) find that business educators perceive AI as a dual-edged force: while it facilitates operational efficiency and innovation, it simultaneously threatens conventional employment arrangements and contractual expectations. These findings highlight a critical tension in modern labour markets, where AI enhances productivity and organizational competitiveness but also challenges employee well-being, engagement, and professional identity.

Research Method

Ethical Considerations

The researchers obtained an approval from the research and ethics committee of the University of Calabar, to execute the study. They further obtained a formal letter from the head of service, Calabar Municipality Local Government Area, Cross River State. This was in addition to the informed consent forms which the various heads of the departments had to fill and sign alongside the participating respondents. The purpose of the research was clearly explained to the participants, and they were further assured of strict confidentiality and anonymity.

Design and Procedure

The study employed mixed-methods as research design. Two hypotheses guided the study with A population of 400 respondents and qualitative interviews which was used as sample size since the figure was manageable. Calabar Metropolis was chosen as the area of study. There is a variety of socio-economic activities, and education as one of the key areas with tertiary education institutions like the University of Calabar and Cross River University of Technology, alongside secondary and primary schools, which draw learners to the area. Additional economic sectors are commercial markets, tourism businesses, transport, and small-scale manufacturing, which offer job and skill training chances. Institutional reports, policy documents and other academic studies were also reviewed as secondary data to facilitate triangulation of primary data and offer insights. The Chi-square tests were used to test study hypotheses and examine relationships using quantitative data analyses with descriptive statistics, cross-tabulations and inferential statistics. A combination of quantitative and qualitative results presented the picture of the impact of AI on learning, employment, and social organization in Calabar Metropolis, which underlies the policy suggestions and interventions.

Results

H0:

Table 1: Impact of AI on Learning Processes and Educational Systems

Response	Improved Quality	Enhanced Personalization
Strongly Agree	117	101
Agree	105	119
Neutral	73	69

Disagree	55	56
Strongly Disagree	50	55
Total	400	400

Chi-Square Test

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.84	4	0.043*
Likelihood Ratio	9.91	4	0.042
Linear-by-Linear Association	3.21	1	0.073

Figure 1

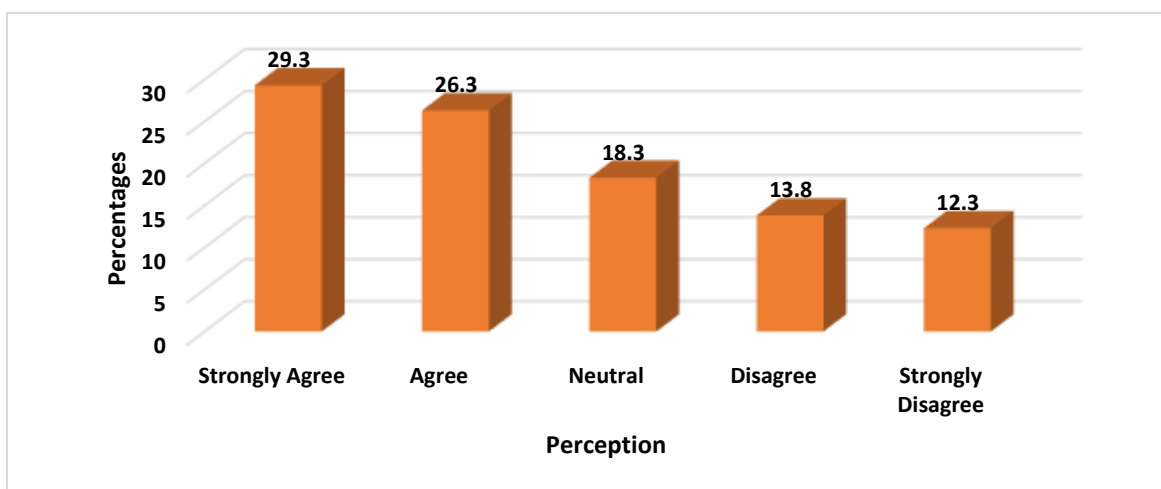


Figure 1: AI tools (such as intelligent tutoring systems and learning management platforms) have improved the quality of learning in my institution

Source: Author's research, 2025.

H2.

Table 2: Influence of AI on Employment Patterns and Job Security

Response	Changed Roles	Job Security
Strongly Agree	95	83
Agree	123	108
Neutral	71	79
Disagree	56	65
Strongly Disagree	55	65
Total	400	400

Chi-Square Test

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.27	4	0.024*
Likelihood Ratio	11.45	4	0.022
Linear-by-Linear Association	4.11	1	0.042

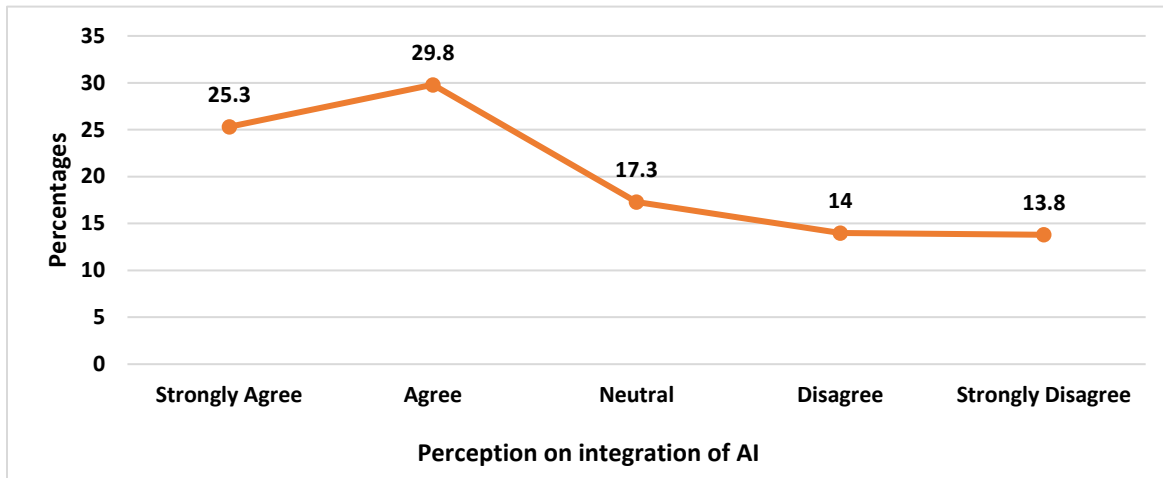


Figure 2: The integration of AI has enhanced personalized learning experiences for students

Source: Author’s research, 2025.

The figures shown in Figures 1 and 2 reveal that Artificial Intelligence (AI) has already created a significant change in the learning processes in the educational institutions in Calabar Metropolis. As shown in Figure 1, out of the total number of respondents (n=555), a combined total of 222 respondents (117 strongly agree and 105 agree) indicated that AI tools, including intelligent tutoring systems and learning management platforms, had contributed to overall improvement of the quality of learning in their institutions. In the meantime, 73 respondents (18.3 percent) were neutral and a smaller number, 105 respondents (26.1 percent disagree and strongly disagree) had a different opinion. The findings indicate that the overall perception of AI adoption is that it leads to the improvement of the quality of instruction, helps teachers to address a variety of learning requirements, and facilitates the process of academic delivery.

Figure 2 also emphasizes the importance of AI in the development of personalized learning experiences among students. In this case, fifty-five percent of the respondents (220 strongly agree and 119 agree) affirmed that the integration of AI has had a positive impact on the personalization of the learning journey whereby they were able to have a customized learning experience. There were 69 respondents who responded neutrally (17.3 percent), and 111 respondents (27.8 percent combined disagree and strongly disagree) did not find a significant effect. The results indicate a significant tendency to consider

AI as a means of adaptive learning, which aligns with the global attitudes to the ability of intelligent educational technologies to assist in differentiated instructions, enhance student engagement, and promote more productive learning outcomes.

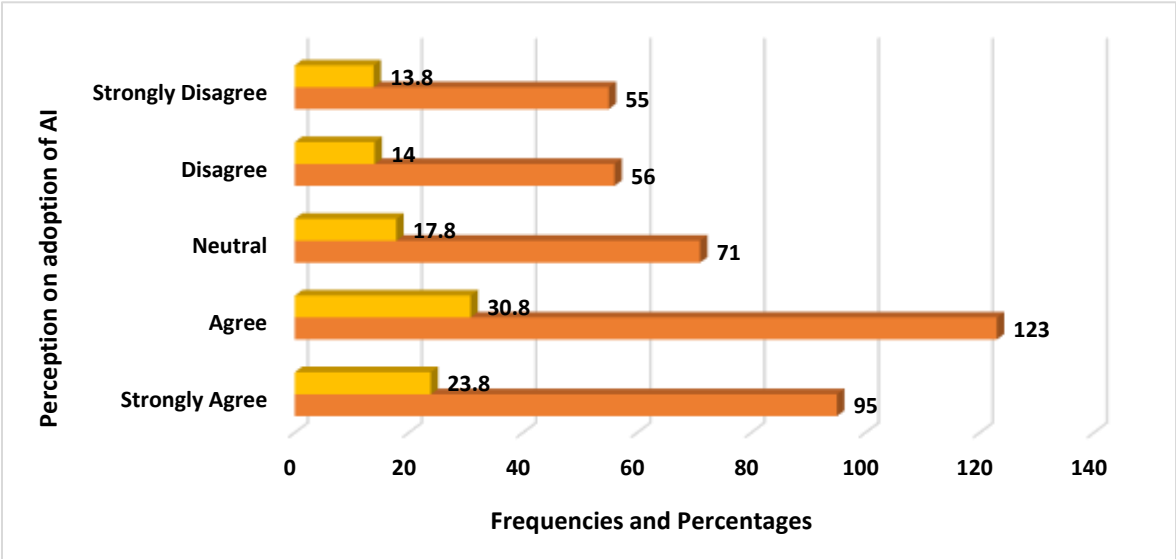


Figure 3: The adoption of AI technologies in my workplace has significantly changed job roles and responsibilities

Source: Author’s research, 2025.

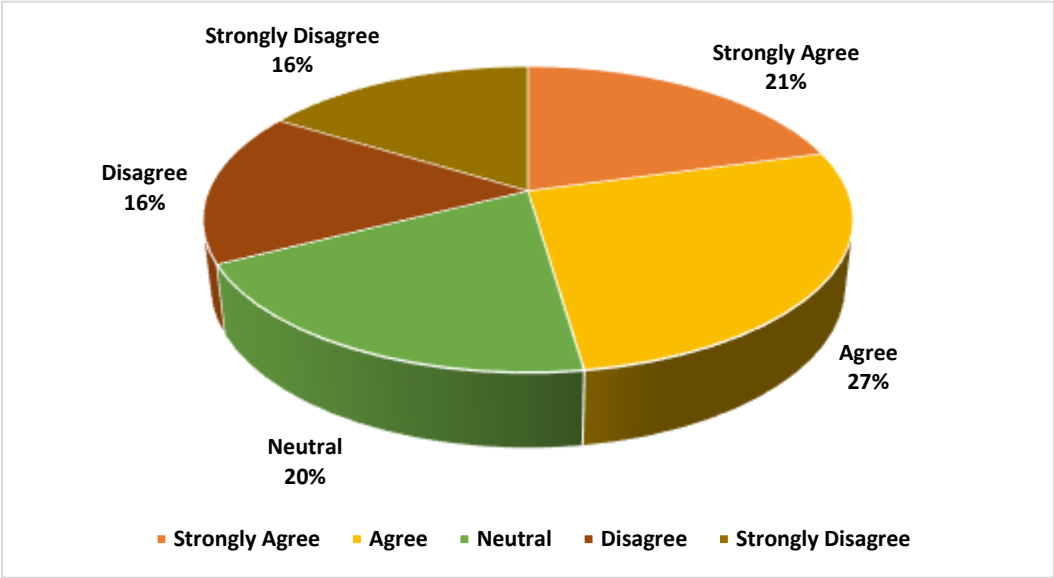


Figure 4: I feel secure in my current job despite the increasing use of AI and automation in my organization

Source: Author’s research, 2025.

The data presented in Figure 3 points to the influence of the adoption of Artificial Intelligence (AI) on the workplace roles and duties in Calabar Metropolis. Two hundred and eighty-eight participants (95 strongly agree and 123 agree), which is half of the sample, said AI technologies have changed their job functions considerably. In the meantime, 71 respondents (17.8 percent) neutral, and 111 respondents (27.8 percent combined disagree and strongly disagree) declined to change their roles or remained indifferent. It implies that the application of AI is changing classic job designs, bringing new work, and redefining roles, which represent wider patterns of automating the workforce and adapting to digital changes.

Figure 4 deals with the views on job security with regard to AI and automation. In this case, forty-seven percent (191 respondents, 83 strongly agree and 108 agree) of them believed that they were safe in their current jobs even as the AI continued to be integrated. There were 79 respondents who had neutral responses (19.8 percent), and a total of 130 respondents (65 disagree and 65 strongly disagree) had issues relating to job stability, which is thirty two percent of the respondents. These findings show that although a large percentage of employees see AI as improving productivity and generating novel opportunities.

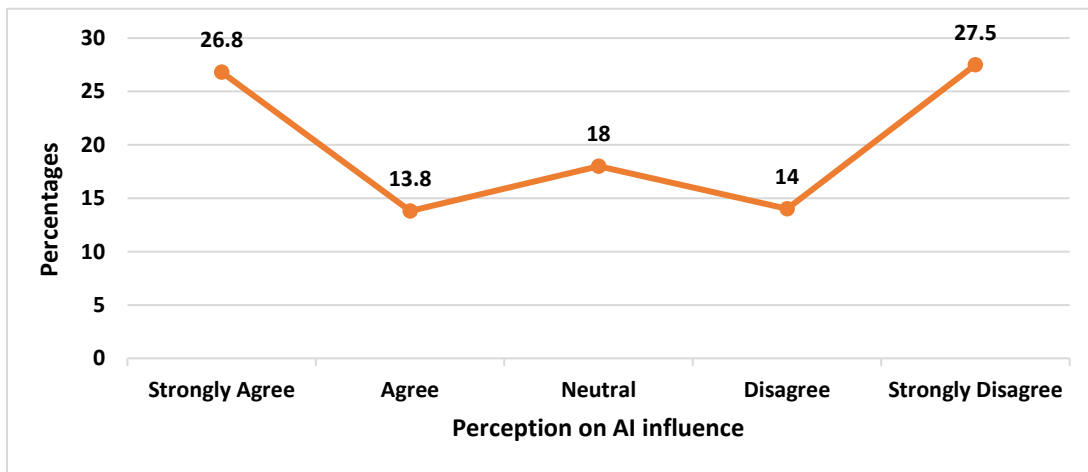


Figure 5: AI has positively influenced social interactions and organizational operations in my community or workplace

Source: Author’s research, 2025.

Figure 5 data are based on perceptions of the impact of AI on social relations and organizational processes in Calabar Metropolis. One hundred and six3 (163) out of the total four hundred and ten (410) respondents (107 strongly agree and 56 agree) stated that AI has had a positive impact on communication, collaboration, and operational efficiency within their communities or workplaces. Nonetheless, 72 respondents (18 percent) are neutral and 165 respondents (110 disagree and 55 strongly disagree) or forty-one percent of the respondents saw no positive impact or little impact. It implies a divergent viewpoint, according to which AI is perceived as helpful in enhancing some social and organizational operations, and its effect is not equally perceived by all respondents.

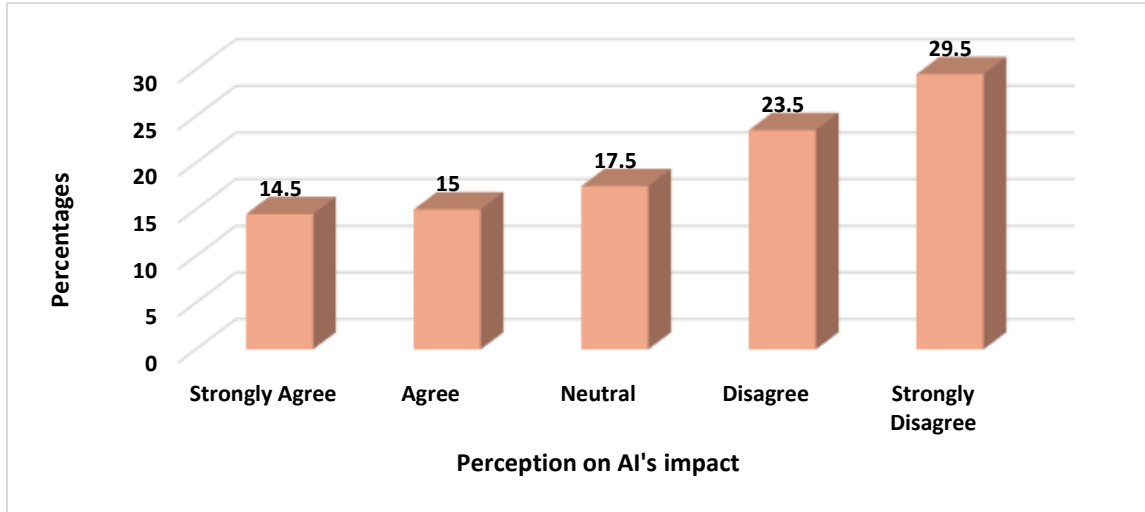


Figure 6: AI has a significant impact on cultural identity, governance, or decision-making processes in my community or institution

Source: Author's research, 2025.

In Figure 6, the perceived impact of AI on cultural identity, governance and decision-making is explored. In this case, only 118 respondents (58 strongly agree and 60 agree), or twenty-nine percent, respondents thought that AI has a substantial impact in these areas. The neutral answers were 70 (17.5 percent), whereas the majority of the 212 (94 disagree and 118 strongly disagree) of the respondents' fifty-three percent said that AI had no or minimal effect on cultural or governance processes. It means that although AI can contribute to operational efficiency or data-driven decision-making, its dimensions into the societal norms, cultural identity, and governance framework is received with skepticism or opposition, which underscores the intricacy and situational sensitivity of the adoption of AI in the social systems.

Discussion

H1: Artificial Intelligence do not significantly affect learning, employment, and social organization in Calabar Metropolis.

According to Table 1, The first hypothesis posited a large percentage of the respondents strongly agreed (117 to a better quality; 101 to a better personalization), agreed (105; 119), or neutral in believing that AI tools, including intelligent tutoring systems and learning management platforms, have improved the quality of learning and customized education experiences. The Chi-square test data (Pearson $\chi^2 = 9.84$, $p = 0.043$) indicates that the integration of AI and the perceived learning outcomes improvements are statistically significant. These findings are consistent with the worldwide view that AI can improve the educational process, offer flexible learning opportunities and help educators to address the needs of various students, this is in line with Agbaji, Lund, and Mannuru, 2023.

H2:Table 2 indicates how AI has impacted the employment trends and job security in Calabar Metropolis. An integrated majority of respondents concurred or strongly concurred that jobs roles have been altered by the adoption of AI (95 strongly agree; 123 agree) and that job security was more divided (83 strongly agree; 108 agree; 79 neutral). The Chi-square results (Pearson $\chi^2 = 11.27$, $p = 0.024$) reveal that there is a significant correlation between AI implementation and workforce changes. This observation can be aligned with the research that suggests that, although AI has the potential to increase productivity and reinvent the role, it also brings the question of employability and job security, underscoring that the adoption of technology in the workplace is a two-sided concept (Achar & Andortan, 2025).

Conclusion

According to the results of the study, it was concluded that, the Artificial Intelligence (AI) can significantly influence the learning process and educational systems in Calabar Metropolis. The overall perception of AI tools, including intelligent tutoring systems and learning management platforms, by the respondents is that they enhance the learning quality and contribute to the personalized learning process. This implies that the application of AI can support more flexible and personalized learning processes that can help educators cope with the needs of different students and enhance their overall performance. The research is in line with larger studies that show how AI can be used to revolutionize education by offering flexible, efficient, and effective education.

In terms of the employment and social organization, the introduction of AI is depicted to change the role of jobs and the workload in the metropolis considerably, transforming the labor market and workplace relationships. Although most employees may see the positive sides of AI in enhancing efficiency and providing new professional opportunities, job security concerns can also be seen as indicators of the fear of automation and the challenge of employability. On the same note, AI is seen to enhance social life and organizational processes, but its use on cultural identity, governance, and forms of decision making are not so consistently positive, with some respondents negative about it. These results highlight the importance of the fact that although AI is efficient and can provide collaboration, it needs to be closely controlled in terms of its integration in the society and governance systems, and it should be accompanied by context-specific policies and strategic interventions to guarantee the provision of equitable and positive results to the community.

Recommendations

In line with the findings of this study, the following recommendations were projected:

1. The educational institutions and teachers are recommended to introduce training programs to both educators and learners in order to use AI tools effectively and improve the quality of learning and individual education.
2. The employers, human resources, and professional associations ought to introduce upskilling and reskilling programs to alleviate job insecurity brought by the adoption of AI.

3. Community leaders, organizational managers, and policymakers need to incorporate AI in a manner that will enhance positive social interactions without discrimination of cultural values and governance systems.

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