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ASSESSING THE QUALITY USAGE OF ARTIFICIAL INTELLIGENCE TOOLS AMONG BUSINESS EDUCATION LECTURERS FOR TEACHING IN TERTIARY INSTITUTIONS IN TARABA AND GOMBE STATE, NIGERIA

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ABSTRACT

This study titled assessing the Quality usage of artificial intelligence tools among business education lecturers for teaching in tertiary institutions in Taraba and Gombe state, was guided by four specific objectives, four research questions and four null hypotheses. The study adopted survey research design. The population of the study was 101 Business Education lecturers in high institutions offering business Education program in Taraba and Gombe State. The entire population was used as a sample for the study. The study adopted purposive sampling technique to reach the respondents of the study. The instrument for data collection was a structured questionnaire developed by the researcher titled "Questionnaire on business education lecturers' use of artificial intelligence for teaching". The instrument was validated by three lecturers from the faculty of Education, Modibbo Adama University Yola, Adamawa State. Cronbach Alpha was used to obtain a reliability coefficient of 0.78 after a trial test in Federal College of Education Yola Adamawa State, data collected in the study were analyzed using mean and standard deviation for the research questions while regression analysis was used to test the null hypotheses at 0.05 level of significance. Findings of the study revealed that: There is a significant relationship between perceive usefulness of Artificial intelligent and the use of AI tools for teaching among Business education lecturers in tertiary institutions in Taraba and Gombe State, Nigeria; that there is a significant relationship between perceive ease of use of Artificial intelligent and the use of AI tools for teaching and research among Business education lecturers in tertiary institutions in Taraba and Gombe State, Nigeria. It was recommended that: tertiary institutions in Taraba and Gombe State should organize regular workshops, seminars, and training sessions to improve lecturers' competencies in using AI tools for teaching; Educational authorities should formulate and implement institutional policies that encourage the integration of AI technologies in pedagogy, ensuring ethical and responsible use.

Key Words: Quality Usage, Artificial Intelligent Tool, Business Education, Lecturers, Tertiary Institutions

INTRODUCTION

Background of the Study

Globally, AI has been embraced in higher education for its ability to streamline teaching and research processes. For instance, AI tools assist in developing interactive learning materials, automating assessments, and synthesizing literature reviews, thereby improving efficiency and quality (Ogunyemi, 2020). In business education, AI-driven simulations can enable students to engage with real-world scenarios, while research applications, such as data analysis and content generation can enhance publication output. However, in developing contexts like Nigeria, the digital divide poses a barrier to widespread AI adoption. Studies indicate that while developed nations are already breaking grounds in the use of AI, their counter-part in Africa are still facing challenges like unreliable internet access, unstable electricity, low access to computer facilities and limited AI training personnel (Menekse, (2023).

Artificial Intelligence defined as class of algorithms that learn from a large corpus of data to create new content in a variety of forms, including text, images, video, audio, and code (Sveding, 2021), is no longer a futuristic concept but a present-day reality, deeply embedded in our everyday devices and systems. In Duckarns' (2024) opinion, Artificial Intelligence revolution is in full swing, with 77% of devices already leveraging AI capabilities and the global AI market expected to surge by at least 120% year-over-year, it's clear that AI is no longer a luxury, but a necessity for staying competitive. Nine out of Ten organizations around the world are reported to have embraced AI for a competitive edge, and a projected contribution of $15.7 trillion to the global economy by 2030, (Samuelson, 2023). The benefits of AI adoption are undeniable. As the world prepares for an AI-driven future, it's essential that we harness its power to drive innovation, efficiency, and growth not only in economic terms but on human capital development and more specifically in teaching and research.

The significant traction by AI in higher education is also reshaping teaching, learning, and research approaches. Advancements in AI systems as a transformative tool, offers innovative solutions for educational processes. A landmark moment in this evolution occurred in November 2022, when OpenAI, a San Francisco-based research organization, launched ChatGPT, a Chat Generative Pre-trained Transformer (GPT). This breakthrough has sparked a wave of interest in AI tools, leading to their widespread adoption in educational settings (Johri et al, 2023). These tools are not only enhancing teaching and learning experiences but also redefining research practices, making it imperative to explore their usage among educators, particularly as it relates to business education in tertiary institutions of Learning in Nigeria and in this case Taraba State.

The advent of artificial intelligence (AI) tools, such as ChatGPT, Grok, DALL·E, GPT-4, ChatGPT, MidJourney, MusicLM, Deepseek, kimi and CodeX among others, are fast revolutionizing educational practices worldwide, offering innovative solutions for teaching and research. These tools, are capable of generating text, images, and data based on user inputs, they can transform how educators design curricula, deliver instruction, and conduct scholarly work (Owan et al, 2023). Business education, which encompasses disciplines like office technology management, accounting, marketing, and entrepreneurship, can leverage on AI tools as an aid in facilitating the creation of case studies, simulations, and research summaries, enhancing both pedagogical and research outcomes. However, the adoption of such technologies in resource-constrained settings, such as Taraba State will surely provide an interesting picture for documentation as the AI evolution continue to unfold.

Taraba State, located in Nigeria's North-East geopolitical zone, is characterized by a diverse cultural landscape and a growing tertiary education sector, including universities, polytechnics, and colleges of education. A number of the high institutions in the state offer business education as a course of study. Ogunyemi (2020) describes business education as an integrative discipline that combines theoretical knowledge with practical applications to prepare students for managing business operations, teaching business subjects, and launching entrepreneurial ventures. It encompasses areas such as accounting, marketing, management, and office technology, aiming to develop competencies for both formal employment and self-employment (Sajjad, 2017*)* It is worthy to note that the teaching landscape and pedagogy is changing and the and the and the application of artificial intelligence is one interface that is face becoming pronounce among educators. But then, the educators in the tertiary institutions in Nigeria are facing significant challenges, including limited digital infrastructure, inadequate funding, and decimal levels of technological literacy among learners and varying attitudinal conformity among lecturers (Bulus et al, 2024). These constraints mirror a broader issue in Nigeria's educational system, where technology adoption lags behind global trends due to resource limitations and policy gaps as earlier reported by National Bureau of Statistics (NBS, 2022).

Statement of the Problem

Artificial Intelligence (AI) has the potential to enhance the education process by providing personalized and interactive learning experiences (Luckin, 2018). But despite it growing adoption and integration into the teaching and research processes, issues surrounding it appropriateness relative to responsible usage is still causing lecturers and students to foot drag the application with factors like attitude, ease of access and usage often perceived to a major barrier. In the context of business education, the situation is similarly complex. Business education lecturers in tertiary institutions face unique challenges in integrating new technologies into their teaching and research practices. While AI tools offer promising opportunities to enhance teaching effectiveness and research productivity, there is limited research on how these tools are perceived and utilized by lecturers (Adeogun & Adekunle, 2022). Key questions remain unanswered: How do business education lecturers perceive the usefulness of AI tools in enhancing their teaching effectiveness and research productivity? How easy do they find these tools to use, and what factors influence their willingness to integrate these tools into their practices? What challenges and barriers do they face in doing so? And, importantly, what framework can be suggested to promote the responsible use of AI in teaching and research among business education lecturers in Taraba and Gombe States?

As earlier stated, the incorporation of AI within educational contexts presents a multifaceted challenge that demands careful navigation. While these powerful language models possess the ability to generate coherent and contextually relevant content across a vast array of subjects, their unchecked use carries significant risks. The potential erosion of essential human skills such as critical thinking, creativity, and intellectual honesty is a concern (Selwyn, 2020). The temptation to rely excessively on AI generated outputs could inadvertently undermine the very foundations of knowledge acquisition and higher order cognitive development that education aims to cultivate (Weller, 2020). Moreover, the rapid advancement of AI models has outpaced the development of robust frameworks and guidelines for their responsible integration into teaching and learning processes (Greenhow & Askari, 2017). Educators and learners alike are asking questions surrounding academic integrity, plagiarism, and the potential propagation of misinformation or biased content (Weller, 2020). The absence of explicit guidelines and precise directives in governing the application of these tools in educational settings heightens the risk of misuse and unintended consequences (Greenhow & Askari, 2017). Striking the delicate balance between leveraging the benefits of AI while safeguarding the integrity of the learning experience remains a pressing challenge that requires a concerted effort from stakeholders across the educational landscape (Bali & Zawacki 2020).

Purpose of the Study

The primary aim of this study was to assess the usage of artificial intelligence (AI) tools among business education lecturers for teaching and research in tertiary institutions in Taraba and Gombe States, Nigeria. The specific objectives, grounded in TAM's postulations, were:

1. Ascertain the perceived usefulness of Artificial Intelligence for teaching by business education lecturers in Taraba and Gombe States.
2. Assess the perception of business education lecturers in Taraba State on the ease of use of Intelligence tools for teaching in Taraba and Gombe States.
3. Determine the perceived affordability of using Artificial Intelligence tools by business education lecturers for teaching in Taraba and Gombe States.
4. Determine the factors that influence the willingness of business education lecturers in Taraba and Gombe States to use Artificial Intelligence tools teaching.

Research Questions

The following research questions were developed to guide the study:

1. Ascertain the perceived usefulness of Artificial Intelligence for teaching by business education lecturers in Taraba and Gombe States.
2. Assess the perception of business education lecturers in Taraba State on the ease of use of Intelligence tools for teaching in Taraba and Gombe States.
3. Determine the perceived affordability of using Artificial Intelligence tools by business education lecturers for teaching in Taraba and Gombe States.
4. Determine the factors that influence the willingness of business education lecturers in Taraba and Gombe States to use Artificial Intelligence tools teaching.

Null Hypotheses

The following null hypotheses guided the study and were tested at 0.05 level of significance:

H_{01}: Business education lecturers in Taraba and Gombe States do not perceive Artificial Intelligence as useful for teaching

H_{02}: Business education lecturers in Taraba and Gombe States do not perceive Artificial Intelligence tools as easy to use for teaching.

H_{03}: Business education lecturers in Taraba and Gombe States do not perceive Artificial Intelligence tools as affordable for teaching.

H_{04}: There are no significant factors that influence the willingness of business education lecturers in Taraba and Gombe States to use Artificial Intelligence tools for teaching.

Methodology of the Study

The research design adopted for this study was a descriptive survey. The population of this study consists of one hundred and one (101) business education lecturers in high institutions of learning offering business education programme in Taraba states, Nigeria for the 2024/2025 academic session. Out of these population, sample size of this study was the whole population, since the target population was manageable, hence a census sampling technique was applied and purposive sampling was used in administrating the instrument. Structured questionnaire was used as an instrument for data collection. The instrument was divided into two sections. Section A were used to illicit information on the bio data of the respondent while section B were used to illicit information on the questionnaire items designed for the study. The instruments were validated by two experts from the Department of Vocational Education, who were not below the rank of a senior lecturer, from Modibbo Adama University, Yola. The reliability of the instrument was established through a pilot testing of the instrument at Federal College of Education, Yola, Adamawa State using 30 students as respondents from the college. The results obtained were analyzed using split-half method. And the result from the two groups were tested using PPMC, which gave a reliability coefficient of 0.84 and was adjudged reliable for data collection. The collected data were analyzed using mean and standard deviation to answer the research questions at the benchmark of 3.00. All the mean responses of the respondents that were equal to or above 3.00 were considered agreed to the research questions. While, those mean responses of the respondents below 3.00 were considered disagreed to the research questions. A linear regression analysis was used to test the null hypotheses at 0.05 level of significance. All those hypotheses with a P-value of less than the Alpha value at 0.05 level of significance, were rejected. While those hypotheses with p-value above 0.05 level of significance were retained.

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Results and Discussion

Answer to Research Questions

Research Question One: Ascertain the perceived usefulness of Artificial Intelligence for teaching by business education lecturers in Colleges of Education in Taraba and Gombe State.?

Table 1: Analysis of Mean Responded on the Perceived Usefulness of Artificial Intelligence for Teaching by Business Education Lecturers in Colleges of Education in Taraba and Gombe States State, Nigeria

S/n	Questionnaire Items	N 95	Mean	Std. Div	Rmks
1	AI tools help me deliver lecture content more effectively.		3.36	.862	
2	AI enhances students' understanding during classroom instruction.		3.03	.736	
3	Using AI improves the quality of my teaching materials.		2.99	.857	
4	AI assists me in organizing my lessons more efficiently.		3.17	.808	
5	AI allows for more interactive teaching experiences.		2.98	.934	
6	AI tools help personalize learning to suit different student needs.		2.93	.959	
7	I achieve better teaching outcomes when I use AI tools.		2.81	.914	
8	AI helps reduce my workload in lesson planning and delivery.		2.75	.978	
	Total		**3.00**	**0.88**	

Results from Table 1 show the mean rating and standard deviation for the perceived usefulness of Artificial Intelligence for teaching by business education lecturers in Colleges of Education in Taraba and Gombe States State, Nigeria? The table revealed that all the 8 items had their mean values ranged from 3.36 to 2.75 which were above the cut-off point of mean 3.0 indicating that most of the items were in agreement with the research question one with the exception of few items, that there was a perceived usefulness of Artificial Intelligence for teaching by business education lecturers in Colleges of Education in Taraba and Gombe States State, Nigeria. The table further revealed that the standard deviation of all the 8 items ranged from .978 to .736 which imply that there was less variability in the opinion of the respondents. The grand mean is 3.00 which is again equal to the cutoff point of 3.0. This also implies that there was a perceived usefulness of Artificial Intelligence for teaching by business education lecturers in Colleges of Education in Taraba and Gombe States State, Nigeria.

Research Question Two: What is the perception of business education lecturers on the ease of use of Intelligence tools for teaching in Colleges of Education in Taraba and Gombe States State.?

Table 2: Analysis of Mean Responded for the Perception of Business Education Lecturers on The Ease of Use of Intelligence Tools for Teaching in Colleges of Education in Taraba and Gombe States State Nigeria

S/n	Questionnaire Items	N 95	Mean	Std. Div	Rmks
1	I find it easy to navigate AI tools used for teaching.		2.97	1.11	
2	Learning to use AI tools for teaching was straightforward.		2.85	1.06	

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3	AI platforms for teaching have clear and user-friendly interfaces.	2.81	1.06
4	I can teach effectively with AI without needing technical assistance.	2.73	1.04
5	AI tools for teaching are not too complex to use.	2.67	1.11
6	I feel confident using AI in my teaching activities.	2.67	1.15
7	AI tools integrate well with the systems I already use in class.	2.63	1.13
8	It is easy to access help or tutorials when using AI tools for teaching.	2.68	1.13
	Total	**2.75**	**1.10**

Results from Table 2 show the mean rating and standard deviation for the perception of business education lecturers on the ease of use of Intelligence tools for teaching in Colleges of Education in Taraba and Gombe States State, Nigeria? The table revealed that all the 8 items had their mean values ranged from 2.97 to 2.63 which were less than the cut-off point of mean 3.0 indicating that all the items were not in agreement with the research question two that there was a perception of business education lecturers on the ease of use of Intelligence tools for teaching in Colleges of Education in Taraba and Gombe States State, Nigeria. The table further revealed that the standard deviation of all the 8 items ranged from 1.04 to 1.15 which imply that there was less variability in the opinion of the respondents. The grand mean is 2.75 which is again less than the cutoff point of 3.0. This also implies that there was no positive perception of business education lecturers on the ease of use of Intelligence tools for teaching in Colleges of Education in Taraba and Gombe States State, Nigeria.

Research Question Three: What is the perceived Affordability of Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba and Gombe States State Taraba and Gombe States State?

Table 3: Analysis of Mean Responded for the Perceived Affordability of Artificial Intelligence Tools by Business Education Lecturers for Teaching in Colleges of Education in Taraba and Gombe States State, Nigeria

S/n	Questionnaire Items	N 95	Mean	Std. Div	Rmks
1	AI tools for teaching are financially affordable for me.		3.03	1.21	
2	The cost of subscribing to AI platforms is manageable.		3.16	1.20	
3	I do not need to spend much on maintaining AI tools for teaching.		3.06	1.18	
4	AI tools reduce other teaching costs (e.g., printing, time).		3.18	1.18	
5	The benefits of using AI outweigh the costs involved.		3.17	1.11	
6	My institution provides funding or subsidies for AI use in teaching.		3.11	1.11	
7	I can access useful AI tools for free or at low cost.		3.12	1.11	
8	I would use AI more if it were more affordable.		3.23	1.14	
	Total		**3.13**	**1.16**	

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Results from Table 3 show the mean rating and standard deviation for the perceived Affordability of Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba and Gombe States, Nigeria? The table revealed that all the 8 items had their mean values ranged from 3.03 to 3.23 which were above the cut-off point of mean 3.0 indicating that all the items were in agreement with the research question three that there was a perceived Affordability of Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba and Gombe States, Nigeria. The table further revealed that the standard deviation of all the 8 items ranged from 1.11 to 1.21 which imply that there was less variability in the opinion of the respondents. The grand mean is 3.13 which is again above the cutoff point of 3.0. This also implies that there was a positive perception on affordability of Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba and Gombe States, Nigeria.

Research Question Four: What are the factors that influences willingness to use Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba State Taraba and Gombe States State?

Table 4: Analysis of Mean Responded for the Factors that Influences Willingness to use Artificial Intelligence Tools by Business Education Lecturers for Teaching in Colleges of Education in Taraba and Gombe State, Nigeria

S/n	Questionnaire Items	N 95	Mean	Std. Div	Rmks
1	I am motivated to try new AI tools for teaching.		3.18	1.15	
2	I am willing to use AI if I receive adequate training.		3.21	1.11	
3	My colleagues' use of AI encourages me to use it too.		3.16	1.08	
4	I believe AI aligns with my teaching goals.		3.09	1.05	
5	I am open to experimenting with AI tools in the classroom.		3.13	1.14	
6	I would use AI if I had technical support available.		3.08	1.11	
7	I feel confident enough to explore AI on my own.		3.02	1.08	
8	I am more willing to use AI if students respond positively to it.		3.04	1.09	
	Total		**3.11**	**1.10**	

Results from Table 4 show the mean rating and standard deviation for the factors that influences willingness to use Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba and Gombe States, Nigeria? The table revealed that all the 8 items had their mean values ranged from 3.02 to 3.21 which were above the cut-off point of mean 3.0 indicating that all the items were in agreement with the research question seven that there was factors that influences willingness to use Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba and Gombe States State, Nigeria. The table further revealed that the standard deviation of all the 8 items ranged from 1.08 to 1.15 which imply that there was less variability in the opinion of the respondents. The grand mean is 3.11 which is again above the cutoff point of 3.0. This also implies that there were factors that influences willingness to use Artificial Intelligence tools by business education lecturers for teaching in colleges of education in Taraba and Gombe States State, Nigeria.

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Test of Null Hypotheses

HO_1: There is no significant relationship between perceive usefulness of Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States, Nigeria

Table 5a: Test of Linear Regression Analysis on the Relationship between Perceive Usefulness of Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States, Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2008.001	1	2008.001	84.065	.000[b]
	Residual	2221.430	93	23.886		
	Total	4229.432	94			

a. Dependent Variable: Business Education Lecturers
b. Predictors: (Constant), Usefulness of Artificial Intelligent

Table 5b. Model Summary on the on the Relationship between Perceive Usefulness of Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States, Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.689[a]	.475	.469	4.88737

b. Predictors: (Constant), Usefulness of Artificial Intelligent

From Tables 5 above, the linear regression analysis shows that there is a significant relationship between perceive usefulness of Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States State, Nigeria. This is because the F = 11.300, (df 94, 93), P < 0.05 level of significance. Also, the computed p-value (0.000) which is less than the alpha value of 0.05 level of significant, the null hypothesis is therefore rejected. This means there was a relationship between perceived use of Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States State, Nigeria. with R-square value of (0.475), which indicates that, more than 48 % of teaching activities among Business education lecturers in colleges of Education was attributed to the perceived use of Artificial intelligent.

HO_2: There is no significant relationship between perceive ease of use of Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States, Nigeria

Table 6a: Test of Linear Regression Analysis on the Relationship between Perceive Ease of Use of Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States, Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3292.514	1	3292.514	156.928	.000[b]
	Residual	1951.233	93	20.981		
	Total	5243.747	94			

a. Dependent Variable: Business Education Lecturers

b. Predictors: (Constant), Ease of use of Artificial Intelligent

Table 6b. Model Summary on the on the Relationship between Perceive Ease of Use of Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States, Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792[a]	.628	.624	4.58050

b. Predictors: (Constant), Ease of use of Artificial Intelligent

From Tables 6 above, the linear regression analysis shows that there is a significant relationship between ease of use of Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States State, Nigeria. This is because the F = 13.720, (df 94, 93), P < 0.05 level of significance. Also, the computed p-value (0.000) which is less than the alpha value of 0.05 level of significant, the null hypothesis is therefore rejected. This means there was a relationship between ease of use of Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States State, Nigeria. with R-square value of (0.628), which indicates that, more than 63 % of teaching activities among Business education lecturers in colleges of Education was attributed to the ease of use of Artificial intelligent.

$H0_3$: There is no significant relationship between perceive affordability of Artificial intelligent tools and teaching among Business education lecturers in tertiary institutions in Taraba and Gombe States, Nigeria

Table 7a: Test of Linear Regression Analysis on the Relationship between Perceive Affordability of Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States State, Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4572.175	1	4572.175	708.397	.000[b]
	Residual	600.246	93	6.454		
	Total	5172.421	94			

a. Dependent Variable: Business Education Lecturers
b. Predictors: (Constant), Perceived affordability of Artificial Intelligent

Table 7b. Model Summary on the on the Relationship between Perceive Affordability of Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States State, Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.940[a]	.884	.883	2.54052

b. Predictors: (Constant), Perceived affordability of Artificial Intelligent

From Tables 7 above, the linear regression analysis shows that there is a significant relationship between perceived affordability of Artificial intelligent and teaching among Business

education lecturers in colleges of Education in Taraba and Gombe States State, Nigeria. This is because the F = 62.968, (df 94, 93), P < 0.05 level of significance. Also, the computed p-value (0.000) which is less than the alpha value of 0.05 level of significant, the null hypothesis is therefore rejected. This means there was a relationship between affordability of Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States State, Nigeria. with R-square value of (0.884), which indicates that, more than 88 % of teaching activities among Business education lecturers in colleges of Education was attributed to the affordability of Artificial intelligent tools.

$H0_4$: There is no significant relationship between perceive factors influencing willingness to use Artificial intelligent tools and teaching among Business education lecturers in colleges of education in Taraba and Gombe States, Nigeria

Table 8a: Test of Linear Regression Analysis on the Relationship between Perceive Factors Influencing Willingness to Use Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States, Nigeria

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5652.121	1	5652.121	649.078	.000[b]
	Residual	809.837	93	8.708		
	Total	6461.958	94			

a. Dependent Variable: Business Education Lecturers
b. Predictors: (Constant), Willingness to use Artificial Intelligent

Table 8b. Model Summary on the on the Relationship between Perceive Factors Influencing Willingness to Use Artificial Intelligent and Teaching among Business Education Lecturers in Colleges of Education in Taraba and Gombe States, Nigeria

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.935[a]	.875	.873	2.95092

b. Predictors: (Constant), Willingness to use Artificial Intelligent

From Tables 8 above, the linear regression analysis shows that there is a significant relationship between perceived factors influencing willingness to use Artificial intelligent tools and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States, Nigeria. This is because the F = 13.027, (df 94, 93), P < 0.05 level of significance. Also, the computed p-value (0.001) which is less than the alpha value of 0.05 level of significant, the null hypothesis is therefore rejected. This means there was a relationship between factors influencing willingness to use Artificial intelligent and teaching among Business education lecturers in colleges of Education in Taraba and Gombe States State, Nigeria. with R-square value of (0.875), which indicates that, more than 88 % of teaching activities among Business education lecturers in colleges of Education was attributed to the factors influencing willingness to use Artificial intelligent tools.

Discussion of Findings

The study found a significant relationship between perceived usefulness and the teaching activities of business education lecturers (p = 0.000). This implies that lecturers who view AI tools

as beneficial are more likely to integrate them into their pedagogical practices. This finding aligns closely with the empirical work of Emmanuel et al. (2024) , who reported that the integration of AI-based tools like ChatGPT significantly improved students' programming self-efficacy and computational thinking skills in Nigerian universities. Their study demonstrated that the perceived usefulness of AI tools enhances teaching outcomes, supporting the current result that usefulness drives adoption. Similarly, Somadina and Stephania (2024) confirmed in their study of science education programmes in North-Central Nigeria that AI applications improved teaching effectiveness, specifically in supporting lecturers to prepare course notes and assess students efficiently. The current study extends these findings to business education lecturers in Taraba and Gombe States, reinforcing the empirical evidence that perceived usefulness is a critical predictor of AI integration in Nigerian tertiary institutions. Furthermore, Lijia et al. (2020) reported in their review that AI has positively transformed teaching activities by automating tasks and personalizing learning experiences, which corroborates the current finding that lecturers perceive AI as useful for delivering content and organizing lessons.

The study revealed a significant relationship between perceived ease of use and teaching among business education lecturers ($p = 0.000$). This indicates that the simplicity and user-friendliness of AI tools determine their adoption rates. This finding corroborates the empirical study by Eze and Onah (2024) , who observed that vocational education lecturers in Enugu State adopted AI tools such as ChatGPT and chatbots mainly because they found them easy to use and supportive of instructional delivery. In the same vein, Harshil (2023) demonstrated through the UTAUT model that Effort Expectancy—analogous to perceived ease of use—significantly affects behavioral intention to adopt AI for qualitative data analysis. Although Harshil's study focused on data analysis, the underlying principle that ease of operation drives adoption aligns with the current finding regarding teaching tools. Additionally, Cormac et al. (2023) revealed that teachers' willingness to use AI tools in higher education depends heavily on how intuitive and accessible the technology is within their teaching context. Therefore, the present finding reinforces the empirical argument that simplifying AI applications and providing user support systems can accelerate AI adoption among lecturers.

The results showed a significant relationship between perceived affordability of AI tools and teaching among the respondents ($p = 0.000$). This indicates that cost considerations play a crucial role in determining lecturers' willingness to use AI tools. This finding agrees with Okoli (2022) , who noted that accessibility and affordability of ICT tools significantly influenced teachers' adoption of e-learning technologies in Nigerian tertiary institutions. Likewise, Nwana (2022) reported that inadequate availability and high cost of digital teaching tools hindered teachers' effective use of e-learning facilities in secondary schools in Anambra State. These results are further supported by Ogunleye et al. (2024) , whose systematic review emphasized the need for inclusive and affordable access to AI technologies for effective teaching and research in higher education. The implication of this finding, consistent with empirical evidence, is that institutional support, subsidies, and investment in AI infrastructures are essential for ensuring equitable access among lecturers.

The study equally revealed a significant relationship between factors influencing willingness to use AI tools and teaching ($p = 0.000$). This suggests that beyond usefulness, ease of use, and affordability, other motivational, institutional, and attitudinal factors determine the willingness of business education lecturers to adopt AI tools. This finding resonates with Onwuagboke et al. (2024) , who established that lecturers' awareness and familiarity with AI tools strongly influence their adoption in teaching and research. They also observed that less experienced lecturers tend to demonstrate greater willingness to experiment with AI than their older counterparts. Similarly, Cormac et al. (2023) identified that teachers' willingness to adopt AI is moderated by their perceptions of responsibility, ethical concerns, and institutional readiness. Furthermore,

Spivakovsky et al. (2023) emphasized the importance of institutional policies and frameworks that guide ethical and effective use of AI in teaching and research, noting that such support systems enhance educators' confidence and willingness to adopt AI tools. The findings also align with Zouhaier and Beatriz (2023) , who pointed out that AI adoption in higher education is driven by lecturers' awareness of its benefits in improving instructional quality and professional opportunities. Hence, the present study highlights that to strengthen lecturers' willingness to adopt AI, tertiary institutions in Taraba and Gombe States must create enabling environments through policy frameworks, awareness campaigns, and continuous professional development programs.

Conclusion

This study concludes that Generative AI tools hold significant promise for transforming teaching and research practices in business education, but realizing this promise requires deliberate, context-sensitive strategies that address perceptual, technical, and organizational dimensions. The findings advocate for a holistic approach to AI integration—one that combines technological provision with pedagogical support, ethical guidance, and institutional commitment—to ensure that AI adoption enhances rather than undermines the quality, equity, and integrity of higher education in Taraba and Gombe States.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were made:

1. School Management should encourage lecturers to utilize AI for lesson planning, content delivery, and student engagement strategies to maximize the perceived benefits identified in the study.
2. School Management should organize workshops focus on simplifying AI tool navigation and providing technical support to ensure lecturers find these technologies intuitive and effortless to incorporate into their daily teaching routines.
3. School Management should curate and promote high-quality open-source AI tools to ensure cost does not remain a barrier to equitable access among business education lecturers.
4. Educational authorities should develop clear institutional policies that support responsible AI use. This includes establishing technical support units, providing incentives for AI innovation, and creating an enabling environment that fosters lecturers' motivation and confidence to adopt AI tools in their teaching practices.

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