



Determinants of University Lecturers' Adoption of AI-Assisted Teaching Tools in Port Harcourt

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Abstract

This study examined the determinants of university lecturers' adoption of AI-assisted teaching tools in Rivers State, Nigeria. The study specifically investigated the level of adoption of AI-assisted teaching tools among Ignatius Ajuru University of Education lecturers and examined the influence of perceived usefulness and perceived ease of use on their adoption behavior. A descriptive survey research design was adopted. A sample of 297 lecturers was selected using a multistage sampling technique; however, only 193 valid responses were used for the analysis. Data were collected using a structured questionnaire titled Lecturers' Determinants and Adoption of Artificial Intelligence-Assisted Teaching Tools Questionnaire (LDAAITTQ). Mean and standard deviation were used to answer the research questions, while simple linear regression was employed to test the hypotheses at the 0.05 level of significance. Findings revealed a high level of adoption of AI-assisted teaching tools among lecturers, particularly in lesson preparation, content development, assessment design, and instructional delivery. Regression analysis showed that perceived usefulness has a significant influence on lecturers' adoption of AI-assisted teaching tools ($F = 30.031, p < 0.05, R^2 = 0.610$), indicating a strong predictive relationship. Similarly, perceived ease of use significantly influenced lecturers' adoption of AI-assisted teaching tools ($F = 23.083, p < 0.05, R^2 = 0.108$), though with a moderate effect. The study concluded that both perceived usefulness and perceived ease of use are significant determinants of lecturers' adoption of AI-assisted teaching tools. The study recommends that universities provide continuous training and capacity-building programmes to enhance lecturers' competence in using AI technologies for effective teaching and learning.

Keywords: AI-Assisted Teaching Tools, Technology Adoption, Perceived Usefulness, Perceived Ease of Use, Technology Acceptance Model (TAM).

Introduction

The advent of Information and Communication Technology (ICT) in the twenty-first century has triggered a profound global digital transformation, reshaping economic systems, social interactions, and educational structures across both developed and developing contexts (Adesanya & Johnson, 2024; Gambo et al., 2026). Within this broader transformation, Artificial Intelligence (AI) has emerged as a crucial technological advancement, increasingly influencing the way lecturers deliberately plan, organize, structure, present teaching and learning experiences and content to achieve intended learning objectives in higher education institutions. In modern universities, AI is no longer peripheral; rather, it is becoming increasingly embedded in teaching and learning processes, thereby redefining the professional responsibilities of lecturers.

AI-assisted teaching tools used in higher institutions include intelligent tutoring systems and automated assessment platforms, plagiarism detection software, adaptive learning environments, learning analytics dashboards, and generative AI applications, such as ChatGPT, which are fundamentally reshaping the methods and strategies lecturers use to facilitate learning in universities. These technologies enhance efficiency in lesson preparation feedback delivery, support personalized learning pathways, and expand lecturers' capacity to manage large and diverse classrooms. Empirical research has consistently demonstrated that AI contributes significantly to pedagogical innovation by enabling real-time academic support, improving instructional responsiveness, and strengthening assessment quality (Adiguzel et al., 2023; Holmes & Porayska-Pomsta, 2022). In this regard, AI adoption has become a central issue in contemporary higher education reform, particularly as institutions increasingly seek to align teaching practices with digital transformation agendas.

The adoption of AI-assisted teaching tools among academic staff is still emerging and remains uneven, with empirical evidence indicating moderate adoption but limited practical integration into teaching. Alabi et al. (2025) investigated lecturers' perception and adoption of Artificial Intelligence (AI) tools in tertiary institutions in Ondo State. Their findings revealed a very low level of AI adoption among lecturers and further revealed poor internet connectivity, poor funding, and lack of AI adoption among lecturers. They further identified poor internet connectivity, inadequate funding, and insufficient infrastructure as major barriers to AI use. Abubakar and Onasanya (2026) also showed that lecturers demonstrated moderate levels of behavioral intention and readiness for AI adoption. Amadi and Gwarah (2025) showed that the adoption of artificial intelligence-based tools can enhance effective teaching in Rivers State-owned universities. Nonetheless, despite the enormous potential of AI tools in education, their adoption by lecturers in Nigerian postsecondary institutions remains at an early stage (Ejeh & Igbokwe, 2025). Perceived ease of use and perceived usefulness could also influence lecturers' adoption of AI tools in the way they deliberately plan, organize, structure, and present teaching and learning experiences. Papakostas et al. (2023) posited that perceived usefulness and perceived ease of use are two fundamental constructs of the Technology Acceptance Model (TAM).

The integration of AI-assisted teaching tools is commonly explained through established theoretical frameworks such as the Technology Acceptance Model (TAM), the Diffusion of Innovations (DOI) theory, and the Unified Theory of Acceptance and Use of Technology (UTAUT). TAM, in particular, emphasizes perceived usefulness and perceived ease of use as core determinants of technology adoption behavior (Davis, 1989). The Diffusion of Innovations (DOI) theory further explains technology adoption dynamics through factors such as relative advantage and compatibility, while UTAUT extends the model by incorporating performance expectancy, effort expectancy, and facilitating conditions as key predictors of behavioral intention in educational technology contexts. Collectively, these frameworks provide a robust lens for understanding lecturers' decisions to adopt or resist AI-enabled pedagogical tools.

Perceived usefulness (PU) refers to the extent to which an individual believes that using a particular technology will enhance job performance or instructional effectiveness (Davis, 1989). In the context of AI-assisted teaching, PU is a critical determinant of adoption, as lecturers are more likely to integrate AI tools when they perceive clear pedagogical benefits such as improved teaching efficiency, enhanced feedback mechanisms, and reduced administrative workload. AI-powered systems, particularly those with natural language processing and machine learning capabilities, provide rapid responses, automate repetitive tasks, and support personalised learning experiences, thereby strengthening instructional quality (Lorenzo et al., 2025). Studies have shown that users develop stronger intentions to adopt AI systems as reliable, efficient, and capable of improving task performance (Monib et al., 2025). In higher education, this perceived instructional value significantly influences lecturers' willingness to adopt AI tools in their teaching practices (Awal & Haque, 2025).

Similarly, perceived ease of use (PEOU) plays a crucial role in shaping how academic staff accept technology adoption for decision-making. PEOU refers to the degree to which a user believes that using a technology will be free of effort and cognitively manageable. User awareness and digital competence significantly influence this perception, as lecturers who understand the capabilities and limitations of AI systems are more likely to engage with them effectively (Al-Abdullatif, 2024). Variations in awareness levels among users can lead to differing expectations, thereby shaping their perceived usability of AI tools. When lecturers possess accurate knowledge of system functionality, they tend to develop more realistic expectations, which enhances their interaction experience and reduces resistance to adoption (Bilquise et al., 2024). Furthermore, the design quality of AI systems, which includes interface simplicity, responsiveness, and interaction flow, strongly influences perceived ease of use. Intuitive system design fosters confidence and reduces cognitive effort during use, thereby increasing intention to adopt (Jo, 2023). Additionally, the effectiveness of AI systems in generating accurate, relevant, and context-sensitive responses enhances user satisfaction and reinforces positive usability perceptions (de Andrés-Sánchez & Gené-Albesa, 2023).

In higher education, where lecturers often operate under time constraints and heavy workloads, ease of use becomes a critical factor influencing sustained engagement with AI-assisted teaching tools. In the context of Rivers State universities, where digital transformation in education is ongoing but unevenly implemented, understanding the determinants of lecturers' adoption of AI-assisted teaching tools becomes particularly significant. Variations in institutional support, technological infrastructure, and individual readiness further complicate adoption patterns, thereby necessitating empirical attention to how perceived usefulness and perceived ease of use influence lecturers' adoption of AI tools in teaching practice. University lecturers are expected to keep pace with rapidly evolving teaching technologies, yet the use of AI-assisted tools in universities in Port Harcourt remains limited and uneven. Although awareness and general attitudes toward artificial intelligence in education have been discussed, no clear explanation has been provided for why some lecturers adopt these tools while others do not, especially within the specific context of Port Harcourt. Important factors such as access to digital infrastructure, level of technical skills, institutional support, and personal readiness are often treated separately, leaving gaps and inconsistencies in understanding the real drivers of adoption. As a result, existing approaches do not provide a complete or practical basis for improving usage among lecturers. This situation affects lecturers who may find it difficult to modernize their teaching methods, as well as students whose learning experiences may not fully benefit from the effective use of

innovative technologies. Without clear, context-based evidence, universities and policymakers also lack the guidance needed to support effective integration. These unresolved issues make it necessary to investigate the determinants influencing lecturers' adoption of AI-assisted teaching tools in Rivers State.

This study aims to examine the determinants of university lecturers' adoption of AI-assisted teaching tools in Port Harcourt. Specifically, the study sought to:

1. examine the level of adoption of AI-assisted teaching tools among Ignatius Ajuru University of Education lecturers in Port Harcourt.
2. determine the influence of perceived usefulness on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.
3. investigate the influence of perceived ease of use on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.

The following research questions guided the study:

1. What is the level of adoption of AI-assisted teaching tools among university lecturers in Port Harcourt?
2. What is the influence of perceived usefulness on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt?
3. What is the influence of perceived ease of use on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt?

The following hypotheses were tested at the 0.05 level of significance:

1. There is no significant influence of perceived usefulness on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.
2. There is no significant influence of perceived ease of use on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.

Methodology

The study adopted a descriptive survey research design. The design was considered appropriate because it facilitates the systematic collection of data on the determinants of university lecturers' adoption of AI-assisted teaching tools without manipulating any of the study variables. It is suitable for investigating opinions, perceptions, and behavioral intentions of respondents as they naturally occur. The sample size was guided by Krejcie and Morgan (1970), which showed that for a population of approximately 1500, a sample size above 297 is statistically adequate for generalization. Consequently, a sample size of 297 lecturers was considered appropriate for the study. A multistage sampling technique was employed for the selection of respondents.

At the first stage, purposive sampling was used to select Ignatius Ajuru University of Education because it possesses a substantial academic staff population and provides an appropriate context for investigating the determinants of lecturers' adoption of AI-assisted teaching tools. At the second stage, proportionate stratified sampling was used to allocate the sample across the faculties of the university according to the number of lecturers in each faculty, thereby ensuring adequate representation of all faculties. At the third stage, a simple random sampling technique was employed to select individual lecturers from each faculty. This ensured that every lecturer had an equal chance of being selected while minimizing sampling bias. Data were collected using a structured questionnaire titled Lecturers' Determinants and Adoption of Artificial Intelligence-Assisted Teaching Tools Questionnaire (LDAAITTQ). The instrument was designed clearly and systematically and divided into four sections. Section A elicited demographic information of respondents such as gender, academic qualification, and institutional affiliation. Section B contained ten items that assessed lecturers' level of adoption of AI-assisted teaching tools. Section C comprised items measuring perceived usefulness of AI-assisted teaching tools, while Section D focused on perceived ease of use as determinants of lecturers' adoption of AI-assisted teaching tools. All items in Sections B, C, and D were structured on a four-point Likert scale of Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2), and Strongly Disagree (SD = 1), which allowed respondents to indicate the extent of their agreement with each statement. To ensure validity, the instrument was subjected to face and content validation by two experts in Test, Measurement and Evaluation from the Department of Educational Foundations and Counselling at Adeyemi Federal University of Education. Their inputs ensured clarity, relevance, and adequacy of the items in addressing the study objectives. The reliability of the instrument was established using Cronbach's Alpha,

which yielded a coefficient of 0.82, indicating high internal consistency. A total of 297 copies of the questionnaire were administered to lecturers in Ignatius Ajuru University of Education. However, only 193 copies were properly completed, returned, and found suitable for analysis. These 193 valid responses, therefore constituted the final sample size used for the statistical analysis of the study. The response rate was considered adequate for drawing meaningful conclusions regarding the determinants of university lecturers'

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 adoption of AI-assisted teaching tools in Rivers State. Data analysis was conducted using Mean scores and standard deviations to answer the research questions, while simple linear regression analysis was employed to determine the extent to which perceived usefulness and perceived ease of use influence lecturers' adoption of AI-assisted teaching tools. All hypotheses were tested at the 0.05 level of significance.

Results

Table 1: Mean and standard deviation of the level of adoption of AI-assisted teaching tools among university lecturers in Port Harcourt.

S/N	Statements	SA	A	D	SD	Mean	Std	Decision
1	I use AI-assisted teaching tools to prepare lecture notes and instructional materials for my courses	69 (35.8)	60 (31.1)	17 (8.8)	47 (24.4)	2.78	1.17	Agree
2	I integrate AI-powered applications such as ChatGPT, Grammarly, or similar tools in developing teaching content	78 (40.4)	37 (19.2)	21 (10.9)	57 (29.5)	2.70	1.27	Agree
3	I regularly rely on AI tools to simplify administrative teaching tasks such as grading and attendance management.	58 (30.1)	59 (30.6)	27 (14.0)	49 (25.4)	2.65	1.16	Agree
4	I apply AI technologies to assess students' academic performance and provide feedback.	23 (11.9)	98 (50.8)	27 (14.0)	45 (23.3)	2.51	0.98	Agree
5	I use AI-assisted platforms to personalise learning experiences for students based on their individual needs	56 (29.0)	58 (30.1)	29 (15.0)	50 (25.9)	2.62	1.16	Agree
6	I employ AI-powered tools to facilitate student engagement and interaction during classroom instruction.	71 (36.8)	59 (30.6)	14 (7.3)	49 (25.4)	2.79	1.19	Agree
7	I use AI-assisted teaching tools for research supervision and academic mentoring of students	33 (17.1)	95 (49.2)	21 (10.9)	44 (22.8)	2.61	1.02	Agree
8	I use AI-assisted tools to design assignments, quizzes, and Examination questions for students.	102 (52.8)	60 (31.1)	18 (9.3)	13 (6.7)	3.30	0.90	Agree
9	I use AI-assisted teaching tools to improve the quality and efficiency of my teaching practices	73 (37.8)	57 (29.5)	22 (11.4)	41 (21.2)	2.84	1.15	Agree
10	I intend to continue using AI-assisted teaching tools as part of my regular teaching activities	73 (37.8)	61 (31.6)	33 (17.1)	26 (13.5)	2.94	1.04	Agree
Grand Mean (Figures in Parentheses are %)						2.77	1.10	Agree

Table 1 shows the mean and standard deviation of the level of adoption of AI-assisted teaching tools among university lecturers in Port Harcourt. The grand mean of 2.77 and standard deviation of 1.10 indicate a high level of adoption of AI-assisted teaching tools among the lecturers. This implies that lecturers generally adopt AI tools in preparing lecture notes, developing teaching content, simplifying administrative tasks, assessing students, and improving teaching effectiveness. The highest mean score of 3.30 was recorded for the use of AI-assisted tools in designing assignments, quizzes, and examination questions for students, showing that lecturers strongly adopt AI for assessment preparation. This was followed by the use of AI-assisted teaching tools to improve the quality and efficiency of teaching practices, with a mean of 2.84, and the use of AI-powered tools to facilitate student engagement and classroom interaction, with a mean

of 2.79. The intention to continue using AI-assisted teaching tools as part of regular teaching activities was also recorded at a high mean of 2.94. However, the lowest mean score of 2.51 was recorded for the application of AI technologies in assessing students' academic performance and providing feedback, indicating relatively lower adoption in this area. The result shows that university lecturers in Port Harcourt demonstrate a high level of adoption of AI-assisted teaching tools in their teaching practices.

Table 2: Mean and Standard Deviation of the influence of perceived usefulness on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.

S/N	Statements	SA	A	D	SD	Mean	Std	Decision
1	I believe AI-assisted teaching tools improve the quality of my teaching.	69 (35.8)	60 (31.1)	17 (8.8)	47 (24.4)	2.86	1.07	Agree
2	The use of AI-assisted teaching tools helps me accomplish teaching tasks more quickly.	78 (40.4)	37 (19.2)	21 (10.9)	57 (29.5)	2.99	1.10	Agree
3	AI-assisted teaching tools enhance my effectiveness in lesson preparation and delivery.	58 (30.1)	59 (30.6)	27 (14.0)	49 (25.4)	2.67	1.12	Agree
4	I find AI-assisted teaching tools useful for improving students' understanding of the course content.	23 (11.9)	98 (50.8)	27 (14.0)	45 (23.3)	2.40	1.14	Agree
5	The use of AI tools increases my productivity in Managing academic responsibilities.	56 (29.0)	58 (30.1)	29 (15.0)	50 (25.9)	2.54	1.20	Agree
6	AI-assisted teaching tools help me provide faster and more accurate feedback to students.	71 (36.8)	59 (30.6)	14 (7.3)	49 (25.4)	3.31	0.86	Agree
7	AI-assisted teaching tools make assessment and Grading more efficient.	33 (17.1)	95 (49.2)	21 (10.9)	44 (22.8)	2.68	0.96	Agree
8	The usefulness of AI-assisted teaching tools encourages me to integrate them into my teaching practice.	102 (52.8)	60 (31.1)	18 (9.3)	13 (6.7)	3.42	0.87	Agree
9	AI-assisted teaching tools help me address diverse learning needs among students more effectively.	73 (37.8)	57 (29.5)	22 (11.4)	41 (21.2)	2.69	1.05	Agree
10	AI-assisted teaching tools improve the quality of my teaching.	73 (37.8)	61 (31.6)	33 (17.1)	26 (13.5)	2.84	1.04	Agree
Grand Mean						2.86	1.07	Agree

(Figures in Parentheses are %)

Table 2 shows the mean and standard deviation of the influence of perceived usefulness on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt. The grand mean of 2.86 and standard deviation of 1.07 indicate that perceived usefulness has a high influence on lecturers' adoption of AI-assisted teaching tools. This implies that lecturers generally perceive AI-assisted teaching tools as beneficial for improving teaching quality, enhancing lesson preparation and delivery, increasing productivity, and making assessment and feedback more efficient. The highest mean score of 3.42 was recorded for the statement that the usefulness of AI-assisted teaching tools encourages lecturers to integrate them into their teaching practice, showing that usefulness strongly motivates adoption. This was followed by the statement that AI-assisted teaching tools help provide faster and more accurate feedback to students with a mean of 3.31, and that the use of AI-assisted teaching tools helps lecturers accomplish teaching tasks more quickly with a mean of 2.99. Also, addressing diverse learning needs among students recorded a mean of 2.88, indicating positive perception of its usefulness. However, the lowest mean score of 2.40 was recorded for the statement that AI-assisted teaching tools improve students' understanding of course content, indicating relatively lower perception in this area. The result shows that perceived usefulness is a strong determinant of university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.

Table 3: Mean and Standard Deviation of the influence of perceived ease of use on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.

S/N	Statements	SA	A	D	SD	Mean	Std	Decision
1.	I find AI-assisted teaching tools easy to learn and use in my teaching activities	68 (35.2)	68 (35.2)	15 (7.8)	42 (21.8)	2.84	1.13	Agree
2.	Interacting with AI-assisted teaching Tools require little mental effort on my part	92 (47.7)	41 (21.2)	19 (9.8)	41 (21.2)	2.95	1.20	Agree
3.	I can easily understand how to operate most AI-assisted teaching tools for instructional purposes	53 (27.5)	63 (32.6)	27 (14.0)	50 (25.9)	2.62	1.14	Agree
4.	The simplicity of using AI-assisted Teaching tools encourage me to adopt them in teaching	46 (23.8)	60 (31.1)	35 (18.1)	52 (26.9)	2.52	1.13	Agree
5.	I find it easy to integrate AI-assisted Teaching tools into my regular activities	55 (28.5)	67 (34.7)	28 (14.5)	43 (22.3)	2.69	1.11	Agree
6.	AI-assisted teaching tools are user-friendly and convenient for lessons preparation and delivery	71 (36.8)	55 (28.5)	14 (7.3)	53 (27.5)	2.75	1.22	Agree
7.	I can quickly become skilful at using AI-assisted teaching tools for academic tasks.	42 (21.8)	63 (32.6)	45 (23.3)	43 (22.3)	2.54	1.07	Agree
8.	Technical difficulties rarely discourage me from using AI-assisted teaching tools.	101 (52.3)	60 (31.1)	19 (9.8)	13 (6.7)	3.29	0.90	Agree
9.	The availability of simple instructions makes AI-assisted teaching tools easier for me to adopt	73 (37.8)	57 (29.5)	21 (10.9)	42 (21.8)	2.83	1.16	Agree
10.	I am more likely to use AI-assisted teaching tools when they are easy to operate and manage	73 (37.8)	60 (31.1)	35 (18.1)	25 (13.0)	2.94	1.04	Agree
Grand Mean						2.80	1.11	Agree

(Figures in Parentheses are %)

Table 3 shows the mean and standard deviation of the influence of perceived ease of use on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt. The grand mean of 2.80 and standard deviation of 1.11 indicate that perceived ease of use has a strong influence on lecturers' adoption of AI-assisted teaching tools. This implies that lecturers generally consider AI-assisted teaching tools easy to learn, simple to operate, and convenient to integrate into their teaching activities. The highest mean score of 3.29 was recorded for the statement that technical difficulties rarely discourage lecturers from using AI-assisted teaching tools, showing that ease of use strongly supports continued adoption. This was followed by the statement that interacting with AI-assisted teaching tools requires little mental effort, with a mean of 2.95, and that lecturers are more likely to use AI-assisted teaching tools when they are easy to operate and manage, with a mean of 2.94. Also, finding AI-assisted teaching tools easy to learn and use recorded a mean of 2.84, indicating a positive perception of usability. However, the lowest mean score of 2.52 was recorded for the statement that the simplicity of using AI-

assisted teaching tools encourages adoption in teaching, indicating relatively lower influence in this area. The result shows that perceived ease of use is a strong determinant of university lecturers' adoption of AI-assisted teaching tools in Port Harcourt.

Hypotheses

Table 4: Regression Analysis on the Influence of Perceived Usefulness on University Lecturers' Adoption of AI-Assisted Teaching Tools

Variables	R	R ²	β	t	F	Sig.	Decision
Perceived Usefulness	0.781	0.610	0.781	5.480	30.031	0.000	Significant

Table 4 shows that for perceived usefulness, an $F(1,191) = 30.031$, $p = 0.000$ ($p < 0.05$) indicates that there is a statistically significant influence of perceived usefulness on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt. The R^2 value of 0.610 indicates that perceived usefulness explains 61.0% of the variation in lecturers' adoption of AI-assisted teaching tools, meaning that perceived usefulness contributes a substantial proportion to the adoption of AI-assisted teaching tools among the lecturers. The beta coefficient of 0.781 further shows a strong positive influence of perceived usefulness on lecturers' adoption. Therefore, the null hypothesis stating that there is no significant influence of perceived usefulness on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt is rejected.

Table 5: Regression Analysis on the Influence of perceived ease of use on University Lecturers' Adoption of AI-Assisted Teaching Tools

Variables	R	R ²	β	t	F	Sig.	Decision
Perceived Ease of Use	0.328	0.108	0.328	4.804	23.083	0.000	Significant

Table 5 shows that for perceived ease of use, an $F(1,191) = 23.083$, $p = 0.000$ ($p < 0.05$) indicates that there is a statistically significant influence of perceived ease of use on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt. The R^2 value of 0.108 indicates that perceived ease of use explains 10.8% of the variation in lecturers' adoption of AI-assisted teaching tools, meaning that perceived ease of use contributes a moderate proportion to the adoption of AI-assisted teaching tools among the lecturers. The beta coefficient of 0.328 further shows a positive influence of perceived ease of use on lecturers' adoption. Therefore, the null hypothesis stating that there is no significant influence of perceived ease of use on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt is rejected.

Discussion

The findings of the study in Table 1 revealed that university lecturers in Rivers State demonstrate a high level of adoption of AI-assisted teaching tools in their teaching practices. This suggests that lecturers have moved beyond mere awareness of artificial intelligence tools to actual classroom and academic application, particularly in lesson preparation, content development, student engagement, assessment design, and the overall improvement of teaching effectiveness. The finding also indicates that lecturers show a strong intention to continue using AI-assisted teaching tools as part of their regular instructional activities, reflecting growing acceptance of AI integration in higher education.

This finding aligns with the study of Amadi and Gwarah (2025), which reported that the adoption of artificial intelligence-based tools enhances effective teaching in Rivers State-owned universities. Their study emphasized that AI tools improve instructional delivery, academic productivity, and teaching efficiency, which supports the present finding that lecturers actively utilise AI tools for designing assignments, preparing instructional materials, and improving classroom engagement. Similarly, Abubakar and Onasanya (2026) found that lecturers demonstrated moderate levels of behavioral intention and readiness for AI adoption, suggesting a positive disposition toward integrating AI into teaching practices. This is consistent with the present study, where lecturers expressed a strong intention to sustain the use of AI-assisted teaching tools. However, the present finding contrasts with Alabi et al. (2025), who found a very low level of AI adoption among lecturers in tertiary institutions in Ondo State. Their study attributed this low adoption to poor internet connectivity, inadequate funding, and lack of institutional infrastructure to support AI implementation. The difference between their findings and the present study may be explained by institutional variation, differences in access to digital resources, and the increasing exposure of lecturers in Port Harcourt to AI-based instructional technologies.

The result also aligns with Bilquise et al. (2024), who found that variations in awareness levels among users shape their expectations and influence perceived usability of AI tools. Their study explained that when lecturers possess accurate knowledge of how AI systems function, they develop more realistic expectations, which improves interaction experience and reduces resistance to adoption. This is reflected in the present study, where lecturers agreed that interacting with AI-assisted teaching tools requires little mental effort and that the availability of simple instructions makes these tools easier to adopt.

Similarly, the finding supports Jo (2023), who emphasised that the design quality of AI systems, including interface simplicity, responsiveness, and smooth interaction flow, strongly influences perceived ease of use. According to the study, intuitive system design fosters user confidence and reduces cognitive effort, thereby increasing intention to adopt technology. This corresponds with the present finding where lecturers indicated that technical difficulties rarely discourage them from using AI-assisted teaching tools and that they are more likely to adopt such tools when they are easy to operate and manage.

The findings of the study in Table 2 revealed that perceived usefulness has a strong and significant influence on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt. Lecturers generally perceive AI-assisted teaching tools as beneficial for improving teaching quality, enhancing lesson preparation and delivery, increasing productivity, and making assessment and feedback more efficient. This indicates that when lecturers believe that AI tools contribute positively to their instructional performance and academic responsibilities, they are more willing to integrate such tools into their teaching practices.

The result in Table 4 further showed that perceived usefulness significantly predicts adoption, leading to the rejection of the null hypothesis. This finding is consistent with the position of Lorenzo et al. (2025), who explained that AI-powered systems, particularly those supported by natural language processing and machine learning capabilities, improve instructional quality by providing rapid responses, automating repetitive tasks, and supporting personalized learning experiences. Their study emphasized that the practical benefits of AI systems encourage greater acceptance and usage among educators. This supports the present finding that lecturers are more likely to adopt AI-assisted teaching tools when they perceive them as useful for simplifying teaching tasks and improving instructional outcomes.

The result also aligns with Monib et al. (2025), who found that users tend to develop stronger acceptance intentions when they perceive AI systems as reliable, efficient, and capable of improving task performance. This suggests that usefulness serves as a major motivational factor in technology adoption. In the present study, lecturers strongly agreed that the usefulness of AI-assisted teaching tools encourages them to integrate such tools into their teaching practice, which reinforces the argument that perceived usefulness is a central determinant of adoption behavior.

Similarly, the finding supports the study of Awal and Haque (2025), which established that in higher education contexts, the perceived instructional value of AI tools significantly influences lecturers' willingness to adopt them in teaching practices. Their study highlighted that lecturers are more likely to embrace AI technologies when such tools demonstrate clear academic relevance, particularly in lesson preparation, feedback provision, and classroom efficiency. This is reflected in the present study, where lecturers perceived AI-assisted teaching tools as highly useful for providing faster and more accurate feedback to students and for accomplishing teaching tasks more quickly.

The finding also strengthens the assumptions of the Technology Acceptance Model (TAM), which identifies perceived usefulness as one of the strongest predictors of technology adoption. According to the model, individuals are more likely to accept and use a technology when they believe it enhances their job performance. The strong positive influence of perceived usefulness observed in this study confirms this theoretical position and suggests that lecturers' adoption of AI-assisted teaching tools is largely driven by performance expectations and practical instructional benefits. The finding of the study in Table 3 revealed that perceived ease of use has a strong and significant influence on university lecturers' adoption of AI-assisted teaching tools in Port Harcourt. Lecturers generally consider AI-assisted teaching tools easy to learn, simple to operate, and convenient to integrate into their teaching activities. This suggests that when lecturers experience less difficulty in understanding and using AI tools, their willingness to adopt and sustain the use of such technologies in teaching increases. The result in Table 5 further showed that perceived ease of use significantly predicts adoption.

This finding is consistent with Al-Abdullatif (2024), who reported that user awareness and digital competence significantly influence perceived ease of use, as lecturers who understand the capabilities and limitations of AI systems are more likely to engage with them effectively. This supports the present finding that lecturers are more willing to adopt AI-assisted teaching tools when they find them easy to learn and operate. Familiarity with the functionality of AI systems reduces uncertainty and increases confidence in usage, thereby promoting sustained adoption. The study also agrees with de Andrés-Sánchez and Gené-Albesa (2023), who noted that the effectiveness of AI systems in generating accurate, relevant, and context-sensitive responses improves user satisfaction and strengthens positive usability perceptions. When AI systems respond efficiently and support teaching activities without excessive complexity, lecturers are more likely to integrate them into regular academic tasks. This further explains why perceived ease of use emerged as a significant determinant of adoption in the present study.

The finding equally reinforces the assumptions of the Technology Acceptance Model (TAM), which identifies perceived ease of use as one of the major predictors of technology acceptance. The model suggests that users are more likely to adopt a system when they believe it requires minimal effort to operate. The significant positive influence observed in this study confirms that lecturers' adoption of AI-assisted teaching tools is strongly shaped by the simplicity, convenience, and user-friendliness of the technology.

Conclusion

The findings conclude that university lecturers in Rivers State exhibit a high level of adoption of AI-assisted teaching tools in their instructional practices. These tools are commonly used for preparing lecture materials, developing teaching content, designing assessments, facilitating classroom engagement, and enhancing the overall efficiency of teaching and learning processes. This reflects a growing integration of artificial intelligence into academic activities within the university system. Perceived usefulness emerged as a significant determinant of adoption, showing that lecturers are more inclined to use AI-assisted teaching tools when they believe such tools improve teaching quality, enhance productivity, support faster feedback, and make instructional tasks more efficient. This highlights that the functional value of AI tools plays a critical role in shaping lecturers' acceptance and sustained usage. Perceived ease of use was also found to significantly influence adoption, indicating that lecturers are more likely to embrace AI-assisted teaching tools when they are simple to operate, easy to learn, and convenient to integrate into classroom activities. Usability factors such as user-friendliness, clarity of instructions, and minimal technical difficulty strengthen lecturers' confidence and willingness to adopt these technologies.

Recommendations

Based on the findings, the following recommendations were made:

1. Universities should organise continuous training and capacity-building programmes to equip lecturers with the necessary skills for effective use of AI-assisted teaching tools in teaching and research activities.
2. Institutional management should improve digital infrastructure by ensuring reliable internet access, stable electricity supply, and availability of relevant AI-based teaching platforms to support effective adoption.
3. Awareness campaigns and sensitization programmes should be implemented to highlight the benefits of AI-assisted teaching tools in improving teaching quality, assessment efficiency, and student engagement.
4. Developers and ICT units in universities should prioritize the design and deployment of AI tools that are user-friendly, simple to navigate, and supported with clear operational guidelines to enhance usability.
5. Government and educational stakeholders should increase funding and policy support for the integration of artificial intelligence technologies in higher education to promote sustainable adoption.
6. Lecturers should engage in continuous professional development and digital literacy enhancement to improve their competence and maximize the benefits of AI-assisted teaching tools in academic delivery.

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