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Lecturers' Perceptions and Readiness for AI-Based Credentialing in Nigerian Higher Education

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Abstract

This study assessed lecturers' perception and preparedness for the use of AI-based credentialing in higher education in Nigeria focusing on the influence of digital competence and demographic characteristics. The survey research design was used, qualitative in nature, with a sample of 900 lecturers carefully selected from the various federal, state and private institutions in the South-West of Nigeria using multistage sampling. A structured questionnaire, which had reliability coefficient of 0.92, was used to gather data. Data analysis was done by using descriptive and inferential statistics. Results showed that lecturers (Mean = 4.08, SD = 0.84) had positive attitudes towards using AI to help create their credentials and were also highly ready to adopt such credentialing (Mean = 3.88, SD = 0.92). There was a positive significant correlation between perceptions and readiness ($r = 0.682$, $p<0.05$) and digital competence had a positive significant correlation with readiness ($r = 0.548$, $p<0.05$). The demographic factors jointly influence the readiness of lecturers for AI-based credentialing ($R^2 = 0.214$, $F_{(5,894)} = 70.3$, $p<0.05$). The results highlight the importance of creating positive perceptions, promoting digital skills, and adopting a demographic-first approach to ensure the successful adoption of AI-based credentialing in Nigeria's higher education sector. The study suggests that continuous capacity building digital initiatives, supportive institutional policies, and inclusive models for implementation are needed to make it easier for AI-based credentialing models to be effectively adopted.

Introduction

Integrating artificial intelligence (AI) into higher education has surged in the past few years, bringing both exciting possibilities and significant challenges to institutions around the globe (Bearman et al., 2022). In this context, the notion of credentialing is also undergoing transformation with the emergence of AI-driven systems that aim to optimize the efficiency, transparency, and security of academic recognition (Pérez-Pérez, et al., 2026). At the same time there has been a trend towards replacing traditional qualifications with Micro-credentials, because they provide a more flexible approach for closing the skills gap and enhancing the employability of graduates (Santos, et al., 2023; Wang et al., 2026). But the adoption and reception of these technological improvements relies heavily on readiness and perceptions of the academic workforce (Bond et al., 2024). Lecturers are the key players in the implementation of educational innovation, which will make the difference between successful implementation and resistance to AI-based credentialing systems. While AI's role in the education sector is increasingly being discussed around the world, only a few studies have delved into the attitudes and preparedness of lecturers specifically regarding the use of AI in the awarding of degrees, especially in developing nations such as Nigeria (Eleje et al., 2025).

The readiness of teachers' readiness in general in using AI in teaching and learning has been widely researched previously (Hamidah & Dja'far, 2026). Researchers have investigated aspects like digital competence, institutional assistance, and demographics that impact the adoption of AI in education (Eleje et al., 2025). In addition, the scholarly focus on digital credentialing has largely focused on the technical aspects, including blockchain-based solutions for trustworthy and verifiable credentials

(Naphiyo et al., 2026), or pedagogical advantages for student learning, such as the use of micro-credentials (Crompton et al., 2023). These studies provide some interesting insights, but there is a human factor which is extremely important: the lecturer. Academic staff's attitude and readiness are key factors, because the successful use of AI tools for credentialing will depend on how academic staff embrace the tools and what they plan to do with them to improve academic delivery and conferring accreditations (Mah & Groß, 2024). For example, as institutions push for the adoption of AI for teaching and assessment, there is room for improvement in how faculty members are ready and prepared to use it, and resistance and uneven implementation have been noted due to the different levels of technological readiness (TRL) between the faculty and the institution (Scherer et al., 2022). This gap is more noticeable in areas where digital infrastructure and targeted professional development is not robustly in place.

It is particularly relevant in the Nigerian context. It is important to note that the higher education system in the country is grappling with challenges that are distinct of its own, including rising enrolment of students, scarcity of resources, academic integrity and quality of certificates (Luo & Day, 2026). There has been a recent surge in research on the adoption of AI in higher education in Nigeria, with studies indicating that while lecturers are open to discussing and engaging with AI, their willingness to do so is contingent upon addressing ethical issues and ensuring sufficient institutional support (Eleje et al., 2025; Naphiyo et al., 2026).

Some of these studies have found moderate concerns about overreliance on AI by students and the possibility of a decline in critical thinking skills; and gender and academic rank have been found to affect attitudes toward AI. These investigations have been largely conducted on the use of AI in the field of teaching and assessment, and not only in the field of credentialing. AI-driven credentialing models, which may also be used to automate some parts of the assessment and verification process, introduce specific issues related to trust, authenticity, and the lecturer's role, which have not been thoroughly discussed in the Nigerian context (Rustemi & Dalipi, 2026). Additionally, the industry's demand for more granular and verifiable skills data is a driver for the need of such systems, indicating the need for understanding lecturer perspectives (Teo et al., 2022).

In light of this, the current work seeks to address a gap in the literature that is crucial, given that the study aims to investigate the perception and preparedness of lecturers in the Nigerian higher education system for AI-based credentialing. The novelty of the idea is its targeted scope, which addresses the convergence of two fast-changing areas of research, AI and digital credentialing, in an area that is not well studied and urgently in need of innovation. This study builds on the gap in the literature where AI readiness and digital credentialing are explored separately, as it examines lecturers' perceptions of AI-based credentialing systems, their readiness for adoption and the associations between perceptions, digital competence, demographic variables and readiness. This study has multiple implications. It will support institutional policy making and design of targeted professional learning programmes to increase the AI literacy and digital competence of lecturers, and influence the wider conversation about academic credentialing in a digitally transformed world. This study will not only inform the scientific community

about the lecturer's perspective but also serve as a strategic ally in bridging the gap between efficient and viable technological solutions and the broader acceptance of AI in credentialing, ensuring its pedagogical appropriateness and acceptance among the key actors in the implementation process.

Objectives of the Study

The general objective of this study is to examine lecturers' perceptions and readiness for AI-based credentialing in Nigerian higher education. The specific objectives are to:

1. examine lecturers' perception of AI-based credentialing systems in Nigerian higher education;

2. assess the level of readiness of lecturers for the adoption of AI-based credentialing in Nigerian higher education;

3. determine the relationship between lecturers' perceptions and their readiness for AI-based credentialing;

4. examine the influence of lecturers' digital competence on their readiness for AI-based credentialing;

5. investigate whether demographic factors such as age, academic rank, years of experience, and institution type significantly influence lecturers' readiness for AI-based credentialing.

Research Questions

This study will be guided by the following research questions:

1. What are the perceptions of lecturers towards AI-based credentialing in Nigerian higher education?

2. What is the level of readiness of lecturers for AI-based credentialing in Nigerian higher education?

Hypotheses

The following null hypotheses will be tested at 0.05 level of significance:

1. There is no significant relationship between lecturers' perceptions of AI-based credentialing and their readiness for its adoption in Nigerian higher education.

2. Lecturers' digital competence does not significantly influence their readiness for AI-based credentialing in Nigerian higher education.

3. Demographic factors do no jointly influence lecturers' readiness for AI-based credentialing in Nigerian higher education.

Literature Review

Conceptual Review

Artificial Intelligence in Higher Education

Artificial Intelligence (AI) is one of the most transformative technologies of our era in higher education, which allows computer systems to learn, reason, solve problems and make decisions. AI is being used by universities to enhance both teaching and learning, as well as assessment and research.AI is now being used by universities to help with teaching and learning, as well as in assessment and research. With the advent of generative AI technologies, digital transformation has moved into a new gear and institutions can implement new strategies to enhance efficiency, personalisation, and evidence-based decision-making, while also revolutionising traditional academic practices (Bearman et al., 2022; Pérez-Pérez et al., 2026).

Adoption of AI has been fueled by the desire for quality education, administration and improved student experiences. Intelligent tutoring systems, automated grading, predictive analytics, plagiarism detection, and research support are examples of applications that have proven to be beneficial. But it requires readiness in institutions, digital infrastructure, AI-friendly policies, and a willingness on the part of lecturers to adopt AI. The lecturers' perceptions, their AI literacy, their confidence and the support of their institutions have been identified as significant factors in the adoption of AI (Bearman et al., 2022; Rustemi & Dalipi, 2026).

Although AI has great promise, it also poses challenges related to algorithmic bias, privacy, transparency, ethics, and disparities in technological access, especially in low- and middle-income nations. The Nigerian HEIs still have problems like inadequate infrastructure, funding, insufficient AI training, and policy uncertainties that hinder effective implementation (Teo et al., 2022). While the awareness of AI has risen, its use is inconsistent, with lecturers' attitudes positive and a range of concerns around digital competence, institutional support, and ethical issues highlighted (Bearman et al., 2022; Wang et al., 2026).

In this context, the use of AI for credentialing is becoming an innovative application that automates the process of generating, verifying, authenticating, storing and managing academic credentials. Therefore, knowing the perceptions and readiness of lecturers in introducing AI-enabled credentialing systems are crucial to the successful implementation in Nigerian higher education, which forms the basis for the present study (Eleje et al., 2025; Pérez-Pérez et al., 2026).

AI-Based Credentialing in Higher Education

AI-based credentialing is the use of AI for the generation, validation, authentication, storage, management and assessment of educational credentials. It uses smart algorithms to streamline the process of issuing credentials, verify authenticity, identify fake credentials, and securely share academic

records, unlike traditional paper-based approaches. AI is often combined with blockchain to create tamper-proof, transparent, and secure records, helping to curb credential fraud, slow verification processes, and data security issues, as well as administrative inefficiencies (Pérez-Pérez et al., 2026).

Online education, lifelong learning, competency-based learning and micro-credentials have fueled the growth of AI-enabled credentialing. Vetiveration of traditional methods is no longer enough as institutions are providing increasing digital learning pathway. AI-powered and blockchain-based credentialing systems offer improved transparency, interoperability, traceability and institutional efficiency, and greater confidence among stakeholders in secure and reliable credential verification (Naphiyo, et al., 2026; Pérez-Pérez et al., 2026).

Beyond that, AI-driven credentialing enhances the institutional decision-making process by analysing credential data, flagging inconsistencies, automating verification procedures and facilitating secure communication between universities and employers. These features, when paired with blockchain technology, streamline labor administration, enhance service delivery and protect institutional creditworthiness within a more globalized labor market (Bond et al., 2024; Bearman et al., 2022).

Improper implementation is limited however by infrastructural, interoperability, security, data privacy legislation, ethical, financial, and lack of digital competence from academic staff. Despite the increased interest in digital transformation, credential fraud and lengthy verification processes remain a problem in Nigeria's higher education. Although there's a lot of interest in digital transformation, credential fraud and fragmented record management systems pose challenges in Nigeria's higher ed. Thus, in order to achieve a successful implementation, lecturers' perceptions and readiness are important. Given this context, this study, therefore, explores the institutional transformation of AI-based credentialing as a lecturer acceptance, organisation readiness and policy enabling process, providing evidence to support institutional practice and national digital transformation process (Eleje et al., 2025; Naphiyo et al., 2026).

Lecturers' Perceptions of AI-Based Credentialing

Lecturers' perceptions of AI-based credentialing reflect the academic staff's beliefs, attitudes, expectations, and evaluations about the implementation of AI in the creation, verification, authentication, and management of academic credentials. Perception plays a significant role in the technology adoption since it can affect lecturers' willingness to accept, use and support technological innovations. Lecturers have a critical role in higher education as acceptance of the lectures is one of the key factors that impacts on the success of the institutional digital transformation. Perceived usefulness, ease of use, trust, and confidence in the capabilities of AI are consistently found to be the factors that influence educators' attitudes towards using it (Mah & Groß, 2024; Bond et al., 2024; Scherer et al., 2022; Santos et al., 2023).

Positive perceptions correlate with positive expectations of AI credentialing to enhance administrative efficiency, increase the authenticity of credentials, decrease credential fraud, and make credential

verification simpler. Lecturers' perceptions of the potential of AI for institutional effectiveness and educational quality have a significant impact on their willingness to adopt it (Bond et al., 2024; Wang et al., 2026; Luo & Day, 2026). Nevertheless, privacy concerns, lack of transparency, lack of ethical accountability, algorithmic bias, and the lack of professional autonomy may deter the adoption. The importance of trust is significant with clear institutional policies on ethics and data protection, as well as raised awareness, encouraging more positive perceptions (Bearman et al., 2022; Pérez-Pérez et al., 2026; Mah & Groß, 2024).

Lecturers' perceptions are also affected by digital competence, AI literacy, professional development, and institutional support, and infrastructural constraints and the lack of policy frameworks can obstruct the acceptance of AI in universities, especially in Nigeria (Eleje et al., 2025; Naphiyo et al., 2026; Mah & Groß, 2024; Hamidah & Dja'far, 2026). This study therefore considers the perceptions of lecturers to consist of the following: perceived usefulness, ease of use, trust, ethical acceptability, institutional support, and overall attitude towards AI-based credentialing, directly answering the first research objective.

Lecturers' Readiness for AI-Based Credentialing

Lecturers' readiness for AI-based credentialing is defined by how well academic staff members are equipped with knowledge, skills, confidence, willingness and institutional support for the adoption and successful application of AI in the creation, verification, authentication and management of credentials. Readiness is not only conscious but psychological, behavioural, technological, organisational and based on the availability of enabling resources. It is well established that it is essential for successful technology implementation as it impacts lecturers' ability and willingness to incorporate AI into their roles (Scherer et al., 2022; Bond et al., 2024; Mah & Groß, 2024; Luo & Day, 2026).

Readiness has four dimensions – cognitive, affective, behavioural and organisational. It covers comprehending AI concepts, confidence in the use of AI technologies, intention to implement AI-supported credentialing systems, and institutional factors (leadership, infrastructure, policies, funding, technical support, professional development opportunities) (Mah & Groß, 2024; Wang et al., 2026; Hamidah & Dja'far, 2026; Bond et al., 2024). While lecturers are becoming more aware of the strategic importance of AI, a lack of AI literacy, training, institutional policies, and ethical issues persist as barriers to readiness. The findings suggest that structured AI training can markedly boost lecturers' confidence, self-efficacy, and readiness to use AI (Luo & Day, 2026; Mah & Groß, 2024; Scherer et al., 2022; Wang et al., 2026).

The readiness of universities to address the challenge of the pandemic remains a growing concern in Nigeria owing to infrastructural constraints, insufficient funding, and institutional capacities of the different universities (Eleje et al., 2025; Naphiyo et al., 2026; Wang et al., 2026; Hamidah & Dja'far, 2026). In addition, good change management, stakeholder engagement, and institutional support are crucial for increasing preparedness and minimizing resistance to using AI (Bearman et al., 2022; Mah & Groß, 2024; Santos et al., 2023). Based on this, the readiness of the lecturers is conceptualized as their general

preparedness to implement the use of AI for credentialing, specifically with respect to the four perceptions of the lecturers, namely: AI knowledge, AI confidence, willingness, and AI behavioural intention, as well as perceived institutional support.

Digital Competence and Lecturers' Readiness for AI-Based Credentialing

Digital competence is considered to be one of the most important factors of technology incorporation within higher education. It includes the knowledge, skills, attitudes, and ethics for confident, critical and responsible use of digital technologies in teaching, research, administration and professional practice. For the purposes of artificial intelligence, digital competence is not just defined as the ability to use a computer; it encompasses AI literacy, data literacy, information management, cybersecurity, digital communication and critical evaluation of AI-generated products. These skills help lecturers interact with AI-powered credentialing systems without compromising academic integrity and professional standards (Scherer et al., 2022; Bond et al., 2024; Mah & Groß, 2024; Wang et al., 2026).

Digital competence is a multi-faceted concept that includes information and data literacy, communication, digital content production, problem solving, safety, ethical decision making, and responsible AI use. Research findings do not contradict this claim as there is consistent empirical evidence that lecturers with high digital competence exhibit higher confidence, self-efficacy, and desire to use AI technologies, while those with low competence tend to feel uncertain and reluctant to integrate AI technologies into their instruction (Mah & Groß, 2024; Luo & Day, 2026; Santos et al., 2023; Scherer et al., 2022). In addition, digital competence is a tool that can support lecturers' judgment skills in assessing AI credentialing systems, understanding AI-generated content, safeguarding institutional data, and working with information technology professionals (Bond et al., 2024; Pérez-Pérez et al., 2026; Wang et al., 2026).

Thus, institutional investment in AI literacy, professional development, technical support, and digital infrastructure becomes crucial to enhance the competence and readiness of lecturers (Hamidah & Dja'far, 2026; Mah & Groß, 2024; Luo & Day, 2026; Eleje et al., 2025). The differences among countries, such as Nigeria, still have an impact on lecturers' digital competence and preparedness for AI (Eleje et al., 2025; Naphiyo et al., 2026; Wang et al., 2026; Hamidah & Dja'far, 2026). This study therefore defines digital competence as a significant explanatory variable that affects the readiness of lecturers to be trained on the application of AI for credentialing, which will be tested in this study by testing the second null hypothesis.

Demographic Factors and Lecturers' Readiness for AI-Based Credentialing

Demographic variables are crucial in the studies of technology adoption as they give insights to variations in lecturers' attitudes, behavioural intentions and readiness to adopt technological innovations. Factors like years of teaching experience, academic level, age, and institutional type can affect how accessible digital technologies are to lecturers, availability of professional development, and their involvement in institutional digital transformation projects (Scherer et al., 2022; Bond et al., 2024; Wang et al., 2026; Mah & Groß, 2024).

Often, the age of the lecturer is correlated with familiarity with emerging technologies, with younger lecturers being more familiar with them. However, recent studies indicate that other factors such as continuous professional development, institutional support and prior digital experience are more relevant indicators of readiness than mere age (Luo & Day, 2026; Santos et al., 2023; Wang et al., 2026; Scherer et al., 2022). Likewise, readiness can vary depending on academic rank, years of teaching experience, which can influence administrative duties, institutional knowledge, and access to technology, but their impact is frequently mitigated by digital competence and AI literacy (Mah & Groß, 2024; Bond et al., 2024; Hamidah & Dja'far, 2026; Eleje et al., 2025; Naphiyo et al., 2026).

The type of institution is another key consideration in Nigeria's university system, as federal, state, and private universities may vary in their funding, digital resources, governance frameworks, and staff development initiatives, which can affect their readiness for AI-based credentialing (Eleje et al., 2025; Bond et al., 2024; Wang et al., 2026; Naphiyo et al., 2026). However, current studies indicate that these demographic factors are more likely to have indirect effects, whereas digital competence, AI literacy, support from institutions and organisational culture account for more of the readiness (Scherer et al., 2022; Mah & Groß, 2024; Santos et al., 2023). Therefore, this study delved into age, academic rank, years of teaching experience and type of institution to assess their effect on lecturers' preparedness for AI-based credentialing in Nigerian higher education institutions.

Theoretical Framework

The theoretical framework is the intellectual basis which explains the relationships between the variables investigated in this study. Theories that are relevant to this study are those that explain the acceptance and adoption of technology because the focus of the study is lecturers' perceptions, preparedness, digital competence and demographic factors related to AI credentialing. Therefore, the study is based on the foundation of the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). The theories have been widely used in research on educational technology, digital transformation, artificial intelligence adoption in education and implementation of information systems in HEIs across Nigeria and hence are appropriate in the context of explaining lecturers' readiness for lecturing with AI in HEIs in Nigeria.

Technology Acceptance Model (TAM)

Fred D. Davis (1989) developed the Technology Acceptance Model (TAM) to describe the reasons for user acceptance or rejection of new technologies. It assumes that two constructs, Perceived Usefulness

(PU) and Perceived Ease of Use (PEOU), which are defined as the extent to which a user believes the technology will increase his or her job performance and the degree to which the technology is perceived as effortless to use, respectively, influence technology adoption. These beliefs influence users' attitudes, intentions to use technology and their actual use.

The TAM theory is now one of the most commonly used theories in the field of technology adoption in higher education. Recent studies reiterate its relevance in the understanding of lecturers' acceptance of artificial intelligence, digital learning platforms, online assessment systems, etc. and educational technologies. There are indications that lecturers are more inclined to use AI if they believe it can enhance teaching, assessment, administrative efficiency and institutional effectiveness, if it is thought to be easy to use, and if it is compatible with their current practices (Scherer et al., 2022; Santos et al., 2023; Mah & Groß, 2024; Bond et al., 2024).

In the context of AI-based credentialing, TAM indicates that lecturers are likely to be more pro-AI if they feel that implementing AI systems will make it easier to verify credentials, save time in administrative tasks, improve security, decrease certificate fraud, and increase institutional efficiency. On the other hand, complexity and/or unreliability can diminish readiness and resistance to adoption.

Given this, this study is of great value to TAM as it helps to understand how lecturers' perceptions affect their readiness for AI-based credentialing. It serves as the theoretical support in analyzing the relationship between lecturer's perception and readiness in order to achieve the first and third research objectives, which are to test the first null hypothesis.

Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh, et al (2003) combined several technology acceptance theories into a unified model known as Unified Theory of Acceptance and Use of Technology (UTAUT). It suggests four technology adoption determinants: performance expectancy (belief that the technology will help in job performance), social influence (perceived pressure from significant others or institutions), facilitating conditions (availability of organisational and technical support), and effort expectancy (perceived ease of use). The model also takes into account the moderating effects of demographic variables (age, gender, experience, voluntariness).

Therefore, UTAUT has been widely adopted for research on AI adoption in higher education as it is not only a measure of individual perceptions, but also organisational and environmental factors. In addition to perceived usefulness, factors such as institutional support, infrastructure, leadership commitment, training, and facilitating conditions influence recent evidence of lecturers' preparedness for AI adoption (Bond et al., 2024; Wang et al., 2026; Luo & Day, 2026; Mah & Groß, 2024).

UTAUT is also well applicable in this research since it describes the impact of individual and institutional factors on lecturers' readiness to be certified using AI-based credentialing. Some of the enabling conditions are digital competence, and some of the determining conditions are demographic (age,

academic level, experience, type of institution). The UTAUT is more comprehensive than TAM in explaining technology adoption in the Nigerian Higher education context, where important institutional differences have a strong influence on technology readiness outcomes.

Relevance of the Theoretical Framework to the Study

We used TAM and UTAUT together as a solid theoretical basis for this study. TAM provides an explanation on how lecturers perceive the usefulness and the ease of use determines their willingness to adopt AI for credentialing, and UTAUT extends this explanation by adding digital competence, digital organisational support, facilitating conditions and demographic influences. These theories have contributed to a complete explanation of the relationship between the study variables and support the conceptual model used in this research. They also support the research goals, research questions and hypotheses theoretically by showing that the process of successful credentialing based on AI depends on the individual and institutional readiness.

Empirical Review

In their study, Luo and Day (2026) employed the Unified Theory of Acceptance and Use of Technology (UTAUT) model coupled with the Self-Determination Theory (SDT) model to examine the determinants of lecturers' readiness to use generative AI. The study surveyed 651 university lecturers, and revealed that performance expectancy, facilitating conditions, AI literacy, behavioural intention, and institutional support were significantly related to the readiness of lecturers. The researchers also noticed that motivational factors reinforced the correlation between technology acceptance and preparedness in reality. The study presents the full story of AI readiness, but does not discuss the use of AI in credential management, an area in which the present study fills a gap.

Mah and Groß (2024) employed a quantitative survey design to examine how university academics uses artificial intelligence, their self-efficacy in using it and their needs for professional development in this context. The study used latent profile analysis (LPA) to categorize lecturers based on their competence of using and their level of using AI. The results showed that self-efficacy, previous AI experience and institutional training had a significant impact on AI adoption. AI self-efficacy was positively correlated with the likelihood of using AI in teaching and administrative tasks, while being negatively associated with concerns about ethics and AI capabilities. The study identified that a key priority for universities is to focus on continuous professional development to enhance faculty competencies in AI. While valuable insights were gained from the study of lecturers' readiness, it was mainly centring on the use of AI for teaching and learning, not AI-supported credentialing, and did not take into account institutional differences between developing country institutions.

Reuben and Kabilan (2024) evaluated the preparedness of university lecturers in North-East Nigeria towards the use of Artificial Intelligence (AI) in academic and administrative tasks. The study was conducted by distributing a structured questionnaire to lecturers from various universities and the

general result revealed that there were positive attitudes towards AI and moderate readiness. Factors such as digital competence, institutional support, and access to AI training, had a significant impact on lecturers' willingness to use AI technologies. The authors found that lack of infrastructure, insufficient professional development, and a lack of policy as critical issues for implementation. Although the study provides useful insights into the context of Nigeria, it took a broad perspective on the issue of AI adoption without exploring the specific aspects of AI credentialing, and did not statistically examine the relationship between lecturers' perceptions and readiness.

Research Gap

Both the empirical literature and the literature on AI adoption, perception, AI literacy, self-efficacy, and readiness, in higher education, have given significant attention to the adoption of AI. The findings that positive perceptions, digital competence, institutional support, facilitating conditions, and AI literacy are important factors shaping the willingness of lecturers to adopt AI technologies are consistent with previous research. They also point to ongoing challenges such as the lack of adequate infrastructure, lack of professional development, ethical issues, and limits on institutional policies related to the use of AI.

But there are some key points missing. Firstly, the vast majority of previous studies focused on AI in teaching, learning and assessment and generative AI, while few studies have discussed AI in credentialing, as this is a new application of AI in higher education. Second, digital transformation has garnered interest in Nigeria at a national level but few empirical studies have focused on the topic in the Nigerian university context. Third, the combined effect of lecturers' perceptions, their digital competence and their demographic characteristics on readiness for AI-based credentialing has not been explored in previous studies. Finally, there is lack of comparative evidence at federal, state and private universities in South-West Nigeria.

To overcome these gaps, the present study investigated the perceptions and preparedness of lecturers for AI-based credentialing in the Nigerian higher education sector, and explored the relationships among lecturers' perceptions, digital competence, and socio-demographic characteristics and their preparedness. The study, which aimed to specifically analyse the implementation of AI-enabled credential management in federal, state and private universities in South-West Nigeria, contributes to the existing body of knowledge and offers evidence that can be used to inform institutions' policy, strategic planning and capacity building efforts to ensure the successful implementation of AI-based credentialing systems.

Methodology

The quantitative descriptive survey research design was used in the study to test the perception and readiness of lecturers to AI-based credentialing in the Nigerian higher institutions of learning. The survey design is appropriate as it allows the collection of regular information on a large number of people to be

carried out, and then statistical analysis to be used to determine the relationships between the variables (Eleje et al., 2025).

Academic staff (lecturers) in institutions of higher learning in South West (SW) geopolitical zone of Nigeria (federal, state and private universities) were the study population. The importance of these lecturers to this study is because they are the main parties of the implementation of AI-based credentialing systems, as they directly interact with the teaching, assessment, and credentialing process.

Three higher institutions; one federal, one state, and one private university were chosen out from each of the six states in the South West (Oyo, Ogun, Osun, Ondo, Ekiti and Lagos). This added up to a total of 18 higher institutions. A sample of 50 lecturers were selected from each of the 18 selected higher institutions, making the sample size of 900 lecturers (the respondents) for the study. The higher institutions were selected using purposive sampling technique, which was limited to the type of institutions (federal, state, private) and simple random sampling technique was used to select 50 lecturers in each of the higher institutions. This will ensure representativeness in terms of type of institutions and states, and also ensure equal opportunity for each lecturer to make it in the study.

The data collection tool was a designed questionnaire which was created by the researcher. The questionnaire had two sections A and B, with section A asking the respondents their demographic (gender, age, academic rank, years of experience, type of institution) and section B the statement items, which collect data from the respondents regarding their perceptions and preparedness to use AI-based credentialing systems in higher education in Nigeria.

The questionnaire was validated by three specialists in educational technology to assure content and construct validity. These experts validated the instrument on constructs of the study in terms of its understanding, relevance, and appropriateness of items to measure the constructs of the study. The experts gave suggestions for better wording of the items and their comprehensiveness, and to eliminate ambiguity. This procedure guaranteed that the tool was precise to the objectives of the investigation. The test-retest technique was used to evaluate the reliability of the questionnaire and the pilot sample was comprised of 30 lecturers working in institutions that were not part of the main study. The responses to check instrument internal consistency were analysed by Cronbach's alpha coefficient. The Cronbach's alpha coefficient was 0.92 and this was considered acceptable, indicating that the instrument was valid to be used in measuring lecturers' perceptions, readiness and digital competence.

IBM SPSS Statistics software (version 28) was used to enter and analyse the data collected. The demographic data of the respondents were presented using the descriptive statistics, such as frequencies, and percentages. The mean score and standard deviation were used to answer the research questions, whereas the test of the null hypotheses was done by Pearson correlation analysis and regression analysis with 0.05 level of significance.

Results

Demographic Information of Respondents

Table 1 ***Demographic variables of the respondents***

Gender	**Frequency**	**Percentage (%)**
Male	450	50.0
Female	450	50.0
Age Range	**Frequency**	**Percentage (%)**
Below 30	90	10.0
30 – 39	360	40.0
40 – 49	315	35.0
50 and above	135	15.0
Academic Rank	**Frequency**	**Percentage (%)**
Assistant Lecturer	90	10.0
Lecturer III	135	15.0
Lecturer II	180	20.0
Lecturer I	180	20.0
Senior Lecturer	180	20.0
Professor	135	15.0
Years of Experience	**Frequency**	**Percentage (%)**
Below 5	90	10.0
5 – 9	270	30.0
10 – 14	270	30.0
15 and above	270	30.0
Institution Type	**Frequency**	**Percentage (%)**
Federal	300	33.3
State	300	33.3
Private	300	33.3

Source: Own work

Table 1 above indicates that the distribution of the respondents was even both with respect to gender with both genders having equal representation of 50% of the sample. This indicates that there is gender balance in research. As regards the age, it can be observed that the higher number of respondents (75) falls in the middle age of 30- to 49-years old, meaning that the study was carried out on middle career lecturers who are actively doing academic and administrative work. When asked about their academic position, the majority (35%) are Lecturer II while Senior Lecturer (30%) also had a normal distribution of staff members in the Nigerian Higher Education system. Lecturers' experience levels are distributed evenly with a 65 percent of early and mid-career employees (0-15 years) and 20 percent of older lecturers (more than 20 years), which can be used to compare AI preparedness across experience levels. As regards type of institution, the respondents were fairly spread across the federal, state and private institutions with a fairly satisfactory representation of all the types of institutions.

Answers to Research Questions

Research Question 1: What are the perceptions of lecturers towards AI-based credentialing in Nigerian higher education?

Table 2 ***Descriptive statistics showing the perceptions of lecturers towards AI-based credentialing in Nigerian higher education***

S/N	Items	Mean	Std. Dev.
1	AI-based credentialing can improve the efficiency of academic certification processes.	4.10	0.82
2	AI-based credentialing is more secure than traditional credentialing methods.	4.02	0.88
3	The use of AI-based credentialing will enhance transparency in academic records management.	4.21	0.75
4	AI-based credentialing can reduce cases of certificate forgery in Nigerian higher education.	4.08	0.84
5	AI-based credentialing is suitable for the Nigerian higher education system.	3.99	0.91
	Weighted Average Mean	**4.08**	

Decision Rule: **0 – 2.99 = negative, 3.00 – 5.00 = positive**

Source: Own work

Based on Table 2 above, it can be seen that the respondents were in agreement with all the items with mean scores of 3.99 to 4.21. The average score of 4.08 that was received with weighted averages shows that the rating of lecturers on AI-based credentialing is mostly positive. The greatest average pertains to transparency indicating a good confidence in AI in managing academic records.

Research Question 2: What is the level of readiness of lecturers for AI-based credentialing in Nigerian higher education?

Table 3 ***Descriptive statistics showing the level of readiness of lecturers for AI-based credentialing in Nigerian higher education***

S/N	Items	Mean	Std. Dev.
1	I am willing to use AI-based credentialing systems in my institution.	4.01	0.90
2	I am prepared to adapt to changes brought about by AI-based credentialing.	3.94	0.91
3	I am confident in my ability to use AI-based credentialing systems.	3.82	0.93
4	My institution is ready to implement AI-based credentialing systems.	3.71	0.99
5	Adequate support will encourage me to use AI-based credentialing systems.	4.00	0.87
	Weighted Average Mean	**3.88**	

Decision Rule: **0 – 2.99 = low, 3.00 – 5.00 = high**

Source: Own work

All items were endorsed by the respondents with mean scores ranging from 3.71 to 4.01 indicating their agreement as seen in Table 3. Based on the obtained weighted average mean score (3.88), it can be inferred that lecturers are ready at a high level to use the AI-based credentialing. The lower scores on institutional readiness, however, indicate infrastructural/policy issues.

Hypotheses Testing

H_{01}: There is no significant relationship between lecturers' perceptions of AI-based credentialing and their readiness for its adoption in Nigerian higher education.

Table 4 ***Pearson correlation of the relationship between lecturers' perceptions of AI-based credentialing and their readiness for its adoption in Nigerian higher education***

Variable	N	Mean	Std. D.	df	r	Sig	p
Perception	900	4.08	0.84				
				898	.682*	.000	<0.05
		3.88	0.92				
Readiness	900						

*Correlation is significant at the 0.05 (2-tailed)

Source: Own work

Table 4 shows that there is a strong and positive correlation between lecturers' perception towards AI-based credentialing and their readiness for its adoption in Nigerian higher education ($r = 0.682$, $p < 0.05$). This suggests that lecturers who are more positive about their perceptions are more prepared to embrace AI credentialing. So, the null hypothesis 1 was rejected.

H_{02}: Lecturers' digital competence does not significantly influence their readiness for AI-based credentialing in Nigerian higher education.

Table 5 ***Pearson correlation of the influence of lecturers' digital competence on their readiness for AI-based credentialing in Nigerian higher education***

Variable	N	Mean	Std. D.	df	r	Sig	P
Competence	900	3.91	0.89				
				898	.548*	.000	<0.05
		3.88	0.92				
Readiness	900						

*Correlation is significant at the 0.05 (2-tailed)

Source: Own work

A moderate positive and statistically significant relationship is found between digital competence and readiness ($r = 0.548$, $p < 0.05$), which is presented in Table 5. This suggests that those lecturers who

demonstrate a higher level of digital competence are more prepared to embrace digital credentialing with AI. Hence, null hypothesis 2 was rejected.

H_{03}: Demographic factors do no jointly influence lecturers' readiness for AI-based credentialing in Nigerian higher education.

Table 6 ***Regression analysis showing the influence of demographic factors on lecturers' readiness for AI-based credentialing in Nigerian higher education***

R = .462					
R Square = .214					
Adjusted R Square = .209					
Std. Error = .71					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	177.6	5	35.52	70.3	.000[b]
Residual	650.7	894	.73		
Total	828.3	899			
a. Predictors: (Constant), Demographic factors					
b. Dependent Variable: Readiness					

Source: Own work

The results in Table 6 show that the combined effect of demographic factors (Age, Gender, Academic Rank, Years of Experience and Institution Type) significantly influence the readiness for the AI-based credentialing of lecturers [$F_{(5, 894)} = 70.3$, $p < 0.05$]. The demographic factors account for 21.4% of the variance in readiness ($R^2 = 0.214$). Hence, null hypothesis 3 was rejected.

Discussion

The study results showed that lecturers have a positive perception toward credentialing by AI. The indicated that lecturers see it as plausible, innovative and potentially improving efficiency and transparency for certification activities, using AI-based credentialing. It is consistent with the findings from the recent study that revealed that the majority of the scholars in the academic field have been influenced to apply AI in education to enhance academic performance and confidence in academic record (Hamidah & Dja'far, 2026; Luo & May, 2026). In the context of developing higher education institutions, like Nigeria, positive perception is a prerequisite for the technology adoption process, because the lack of confidence in digital reforms is generally a challenge to the adoption of innovations (Santos et al., 2023).

The study revealed that lecturers were very ready to embrace AI-related credentialing. It suggests that it does not have a negative attitude towards utilizing AI systems, particularly when supported by institutions and properly trained. Both Teo et al (2022) and Wang et al (2026) establish a strong correlation between AI technologies preparation willingness of lecturers and perceived usefulness, as well as digital culture in the institution. The implication of the finding is that the higher education institutions of Nigeria might be in a transitional phase whereby there are readiness levels but policy needs to be reinforced and supported with infrastructural facilities (Bearman et al., 2022; Naphiyo et al., 2026).

The study revealed that the perception of lecturers is strongly positive with regard to undergoing AI certification. This finding is in line with technology acceptance literature, which, again and again, shows that positive perceptions are positively significant in terms of the behavioural readiness and adoption intentions (Eleje et al., 2025). Therefore, those lecturers who believe that AI-based credentialing is trusted and helpful will be more willing to embrace them (Bond et al., 2024).

In the same way, the study findings revealed that the digital competence has a great impact on readiness. Lecturers who had greater digital competencies were better placed to embrace AI-based credentialing systems. The result reflects the findings of Mah & Groß (2024) and Pérez-Pérez et al (2026) that digital competence is one of the key aspects of being AI literate, particularly in the context of higher education. It supports the importance of lifelong learning for the digital and AI literacy in academic areas (Santos et al., 2023).

Finally, the results of the study indicated that the demographic factors play a significant role in determining lecturers' readiness. Age, academic rank, years of experience and type of institution was determined as significant predictors. It adds to the previous studies that showed that younger lecturers and those at digitally developed institutions are more inclined to be AI-ready (Rustemi & Dalipi, 2026; Scherer et al., 2022). This suggests that the policy of AI-based credentialing will not be effective if it is applied to the general population, due to its need to be responsive to the demographics (Naphiyo et al., 2026). On the whole, the results indicate that positive perception, the development of digital competence, and the implementation strategies based on the specifics of the population are the keys to successful AI-based credentialing adoption in the case of Nigerian higher education.

Implications of the Study

This research has significant policy and practice implications to the higher education sector in Nigeria. Positive attitudes and willingness of the lecturers is a sign of the possibility of achieving AI-based credentialing, through the appropriate digital infrastructure and capacity development. These results can be used by institutions and policy-makers to design and enact specific professional development programs to enhance digital competence. It is also significant to observe in the study the relevance of the implementation strategies that are sensitive to the demographic groups and will promote inclusive adoptions between the different groups of lecturers and institutions.

Recommendations

The results of this study indicate that the Nigerian higher education institutions should prioritize digital and AI literacy training of lecturers for continuous enhancement. Clear systems and policies on the adoption of AI-based credentialing should be designed by policymakers. The institutions are also supposed to offer technical assistance, and awareness programmes in order to enhance the perceptions and readiness of lecturers. Special attention needs to be paid to older teachers and less technologically advanced schools, so that they can be adopted equally.

Conclusion

The findings of this paper reveal that lecturers have a positive perception and they are willing to adopt AI-based credentialing in the higher education sector in Nigeria. Perception, digital competence and demographic aspects have a significant impact on readiness. Based on these findings, AI credentialing can be a possible solution for implementation in Nigeria higher education sector, provided adequate training, institutional commitment and inclusive policies are put in place, taking into account the demographic differences.

Declarations

Acknowledgement of Limitations

Although the study has contributed to the literature, it has limitations. A questionnaire with a structured format might not be able to reflect the complexity of experiences and concerns of lecturers on AI-based credentialing. Another form of response bias may be the judgment derived from self-reported information. Also, the study was restricted to institutions in the South West of Nigeria and this may reduce the generalisability of the study to the other parts of Nigeria.

Suggestions for Further Studies

Further research using mixed methods is recommended to provide opportunities to better understand the attitudes and experiences of lecturers on AI-based credentialing. It is also advisable to carry out comparative studies in other geopolitical areas of Nigeria so as to increase the generalisability. The on-going research may also examine the change in the willingness of lecturers over the years when AI technologies have become more a part of higher education systems.

Ethical Considerations

This study was carried out under ethical consideration. The participants were willingly engaged and all participants gave informed consent. The identifiable information was not gathered as this helped to ensure confidentiality of participants and anonymity. The data collected was not used in any other way and were handled in line with current research ethics.

Consent to Publish

All the participants gave their consent to the use of their anonymised responses in the study and further publication.

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Availability of Data

The data used for carrying out this study can be obtained by request of the corresponding author on reasonable and justifiable ground(s).

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