Embracing AI in Academia: Faculty Researchers' Awareness, Acceptance, and Utilization for Scholarly Innovation

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***Abstract*—The awareness, acceptance, and use of Artificial Intelligence (AI) tools in academic research by faculty researchers is explored in this study. A survey of 135 faculty members from the Department of Education (DepEd) in Gabaldon and the Nueva Ecija University of Science and Technology (NEUST) was conducted using a quantitative descriptive-comparative and correlational design. The findings indicate that while AI is widely known and well-received, its use is only moderate, especially when it comes to writing and grammar tools. Higher levels of engagement were reported by younger faculty members and those working in Information and Communication Technology (ICT), whereas lower levels were reported by older faculty members and those working in management. Engagement was not significantly impacted by gender or academic rank, but there were clear institutional differences, with NEUST faculty showing higher awareness and utilization than their DepEd counterparts. These results highlight the need for increased institutional support and discipline-sensitive training to foster equitable AI adoption in scholarly research.**

***Keywords*—academic research, artificial intelligence, faculty awareness, technological adoption, utilization of Artificial Intelligence (AI)**

I. Introduction

Artificial Intelligence (AI) has become increasingly prevalent in academic research, changing methods, increasing productivity, and opening up new avenues for scholarly investigation [1]. Data analysis, literature reviews, automated writing help, predictive modeling, and many other research-related tasks are now frequently performed using AI-powered tools and algorithms [2, 3]. These advancements could speed up discoveries, improve research accuracy, and foster interdisciplinary collaboration in addition to boosting productivity and efficiency, streamlining research workflows, and improving the standard of academic writing [4]. In academic writing, human-AI collaboration is increasingly becoming a key strategy. AI improves research efficiency and inclusivity by helping with outlining, drafting, and editing [5, 6]. Additionally, the adoption of AI by academic institutions is largely driven by faculty researchers. How well AI tools are integrated into research workflows depends on their degree of awareness, acceptance, and willingness to use them. Faculty members are more likely to incorporate AI-driven solutions into their research if they are aware of AI's capabilities and think they are valuable. On the other hand, adoption of AI may be hampered by skepticism, a lack of technical expertise, or worries about ethical implications [7].

The dynamics of AI adoption and use in educational settings have been the subject of recent research. To illustrate the significance of customized tools to evaluate and improve AI integration among educators, Guo *et al.* [8] created and validated an instrument to gauge teachers' acceptance of AI in education. The adoption of AI applications, such as ChatGPT, in educational settings was also studied by Ofosu-Ampong *et al.* [9], who found that psychological needs, inventiveness, and trust were key factors influencing student adoption. In a recent study, Wang *et al.* [10] created and validated a scale to evaluate the generative AI literacy of English as a Foreign Language (EFL) teachers, emphasizing the importance of measuring not only awareness and acceptance but also teachers' practical literacy in effectively utilizing GenAI tools. These results highlight the necessity of addressing both human and technological factors in order to promote the adoption of AI in educational settings. In order to regulate the use of AI in academic and research settings, academic staff at Higher Education Institutions (HEIs) stress the significance of AI-related regulations [11]. Furthermore, instructors in Tanzanian higher education institutions are aware of AI tools, but their use is still limited because of a lack of official recognition and guidelines, according to Ponera and Madila [12]. Although issues such as inexperience and concerns about plagiarism still persist, tools like ChatGPT and Bard AI are recognized for enhancing learning and academic writing [13].

The use of Artificial Intelligence (AI) in research has led to revolutionary breakthroughs that have raThe planning, execution, and analysis of scientific research have all undergone significant changes as a result of the groundbreaking discoveries made possible by the application of AI. One well-known example is Google's AI "co-scientist", which was developed as part of its Gemini 2.0 platform. AI radically changed the way scientific studies are planned, carried out, and analyzed. Google's AI "co-scientist", created as a component of its Gemini 2.0 platform, is a well-known example. This artificial intelligence system, which has been specially designed for biomedical applications, is excellent at examining enormous amounts of experimental and literary data to identify knowledge gaps and produce fresh, evidence-based theories. By automating preliminary steps of investigation and speeding up discovery cycles in intricate fields like drug repurposing, genomics, and disease modeling, these capabilities simplify the research process [14, 15].

Research has shown that AI systems can significantly contribute to the development of hypotheses and the design of experiments in addition to helping with routine data analysis. For instance, AI has been effectively incorporated into behavioral sciences and chemical research, where it

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creates experiments, adjusts strategies, and even suggests ways to get around scientific roadblocks—tasks that previously required human creativity [16]. Additionally, the capacity of scalable AI models to generalize across scientific domains is being studied, indicating that AI may eventually act as a "robot scientist" or "generalist scientist", able to autonomously explore new areas of knowledge [17].

These developments are not without difficulties, though. Adoption barriers still exist, particularly among academic researchers who continue to be concerned about ethical risks, institutional inertia, and technical proficiency. It's possible that researchers are unprepared to use AI tools in their work or are dubious about the validity and openness of results produced by AI [18]. Adoption may also be hampered by unclear regulatory frameworks and risk-aware deployment procedures. As a result, programs such as SafeScientist have been put forth to incorporate ethical checkpoints into the AI research process, guaranteeing that outputs produced by AI undergo human review prior to implementation [19].

Organized professional development, sufficient infrastructure, and a research culture are systemic interventions that encourage experimentation and are needed to address the obstacles to AI adoption in academic research. Research shows that to integrate AI into research workflows successfully, universities must offer continuing training, digital infrastructure, and policy support [20, 21]. Collaboration between researchers and intelligent systems is becoming increasingly important as AI tools continue to advance. By improving speed, pattern recognition, and insight generation in the research process, these systems are intended to supplement scientists rather than replace them [22].

Faculty awareness, acceptance, and actual use of these technologies are critical to the successful integration of AI into research. According to Alyoussef *et al.* [23] and Romano and Khumalo [24], the adoption of AI tools is heavily influenced by factors such as perceived utility, ease of use, institutional support, and technological literacy. Institutions must proactively identify these influencing factors and put in place incentive structures, peer support networks, and inclusive policies in order to promote innovation and scholarly engagement. These tactics can foster an environment that is conducive to long-term AI involvement and scholarly progress [25, 26].

Less is known about how faculty researchers use AI for scholarly research and writing, even though the body of existing literature offers insightful information about its application in teaching and learning. Although awareness, acceptance, and actual utilization are rarely examined within a single framework, prior research frequently stresses general acceptance. Moreover, there are still a few cross-disciplinary and cross-institutional comparisons. A thorough grasp of how faculty, who are important contributors to academic innovation, use AI in their work is hampered by these gaps.

With an emphasis on its use in research writing, the study sought to evaluate academics' awareness, acceptance, and use of Artificial Intelligence (AI). This study specifically aimed to answer the following questions: 1) How can the age, sex, institution, academic rank, and specialization of faculty respondents be described? 2) How can AI's awareness, acceptance, and utilization in research among faculty researchers be characterized? 3) Is there a significant relationship between the faculty profile (age and academic rank) and faculty researchers' awareness, acceptance, and utilization of AI in research writing? 4) Is there a significant difference in the level of awareness, acceptance, and utilization of AI in research among faculty researchers when grouped according to their profile variables (sex, institution, and specialization)?

This study is innovative because it provides a comprehensive picture of faculty researchers' adoption of AI by combining several viewpoints—awareness, acceptance, and utilization—into a single empirical framework. This study focuses exclusively on research writing and scholarly productivity, in contrast to earlier studies that frequently looked at AI in teaching or general education settings. The study offers fresh perspectives on how contextual and individual factors influence AI engagement by contrasting institutions (HEIs vs. basic education), disciplines, and demographic profiles. These contributions not only advance our understanding of academic technology adoption, but they also help shape focused approaches to advancing fair and discipline-sensitive AI integration.

II. Materials and Methods

A. Research Design and Sampling Method

This study utilized a quantitative research design, incorporating both descriptive-comparative and descriptive-correlational methodologies, to investigate faculty researchers' awareness, acceptance, and application of Artificial Intelligence (AI) in academic research. Descriptive-comparative research utilizes a quantitative methodology to analyze differences among groups within a population, while keeping the independent variable unchanged [27]. Descriptive correlational research is a quantitative methodology that investigates the relationships among variables within a singular group without intervention, employing systematic data collection and analysis to discern patterns and associations [28].

A descriptive-comparative design was utilized to examine disparities in AI awareness, acceptance, and utilization in research writing among faculty researchers categorized by their profiles (gender, academic rank, and field of specialization). Conversely, the descriptive-correlational design was employed to ascertain the relationship between various faculty profiles (age, number of AI-related trainings, years of experience in research, and number of research projects completed during the years of AI utilization) and faculty researchers' awareness, acceptance, and application of Artificial Intelligence (AI) in research writing.

The utilization of both a descriptive-comparative and a descriptive-correlational design was deemed most suitable for this study as it directly corresponds with the research objectives. The comparative approach enables the study to ascertain the presence of significant disparities in AI awareness, acceptance, and utilization among faculty categorized by sex, academic rank, institution, or field of specialization—queries that inherently necessitate group comparisons. A correlational design is necessary to investigate the relationship between continuous variables, such as age, years of research experience, and exposure to

AI-related training, and faculty engagement with AI. When combined, these methods offer a comprehensive grasp of differences among demographic groups as well as a more thorough investigation of the connections between personal and professional traits and the adoption of AI. In order to provide a thorough examination of the variables affecting faculty researchers' involvement with AI, this dual framework ensures that the study not only finds differences but also underlying associations.

The 200 study samples were selected from the faculty at the Department of Education, Gabaldon District, and Nueva Ecija University of Science and Technology, Gabaldon Campus. A stratified sampling technique was used to select the study participants. Before choosing samples from each group, stratified random sampling separates a population into discrete subgroups, or strata, according to shared traits like income or education [29].

B. Research Instrument: Development, Validity, and Reliability

The researcher created a structured survey questionnaire with two subparts. The first section, which deals with the respondents' profiles, includes age, sex, academic standing, area of expertise, number of AI-related trainings, research experience, years of AI use, and the number of completed research studies. Scales assessing AI awareness, acceptance, and use in research writing are included in the second section.

The Lawshe method was used to validate the questionnaire on AI awareness, acceptance, and use in research writing. Using this approach, the researcher enlisted the help of 10 professors, associate professors, and assistant professors from the department of information and technology. These ten specialists were asked to assess each item on the questionnaire by judging its validity. The formula used to calculate the Content Validity Ratio (CVR) was CVR = (n_e − N/2) / (N/2), where CVR stands for content validity ratio, n_e is the number of experts who gave a valid or essential rating, and N is the total number of experts (10). In addition, the Construct Validity Index of each construct is simply the average of the Content Validity Ratio of each item in the construct. Table 1 shows that the CVR for each item exceeds the minimum required value of 0.62 for ten raters. This indicates that the questionnaire items are valid for measuring the identified constructs.

Table 1. Content validity index of each construct

Faculty Researchers' Awareness, Acceptance, and Utilization of AI	Content Validity Index	Interpretation
Faculty Researchers' Awareness of AI	0.96	Valid
Faculty Researchers' Acceptance of AI	0.98	Valid
Faculty Researchers' Utilization of AI	0.94	Valid

C. Data Collection and Analysis Procedures

To guarantee its validity and consistency, the research tool was put through a reliability evaluation. Thirty faculty members who were not included in the actual respondent pool participated in a pre-test. The questionnaire's internal consistency was assessed using Cronbach's alpha. The constructs' reliability coefficients are as follows, as indicated in Table 2: awareness of AI (0.88), acceptance of AI (0.85), and utilization of AI (0.84). A Cronbach's alpha coefficient of 0.70 or greater, according to Kılıç [30], denotes good reliability; a low value could be the consequence of asking too few questions, and a very high value (>0.90) might indicate that the scale is redundant. As a result, the questionnaire is regarded as trustworthy and appropriate for gathering data.

Table 2. Reliability test

Faculty Researchers' Awareness, Acceptance, and Utilization of AI	Reliability Coefficient	Interpretation
Faculty Researchers' Awareness of AI	0.88	Good
Faculty Researchers' Acceptance of AI	0.85	Good
Faculty Researchers' Utilization of AI	0.84	Good

To reduce neutral or midpoint responses and encourage participants to take a more defined position on each statement, a 4-point Likert scale was used rather than a 5- or 7-point scale. This method lessens the chance of central tendency bias, which occurs when respondents choose a neutral response without carefully considering their viewpoint. According to earlier research, when measuring attitudes, awareness, and behaviors, forced-choice formats—like a 4-point scale—can produce more definitive results and enhance interpretability. The scale used in this study ensured that answers more accurately represented faculty researchers' knowledge, acceptance, and use of AI in scholarly research.

The Director of NEUST Gabaldon Campus and the District Supervisor of the Department of Education, Gabaldon District, were consulted in order to obtain permission for the study. On February 25, 2025, the survey was made available to faculty members through Google Forms. A total of 210 responses were gathered after a month.

The gathered data were analyzed using both descriptive and inferential statistical techniques. The profiles of the respondents and their levels of AI awareness, acceptance, and use were examined using descriptive statistics, including mean, standard deviation, and frequency distribution. Based on the demographic profiles of the respondents, a t-test and Multivariate Analysis of Variance (MANOVA) were used to infer significant differences in AI awareness, acceptance, and utilization. Furthermore, the associations between specific respondent attributes and their levels of AI awareness, acceptance, and use were examined using Pearson correlation analysis. To gauge responses, the survey tool used a 4-point Likert scale, with one denoting "strongly disagree" and four denoting "strongly agree".

The data for faculty researchers' awareness, acceptance, and use of Artificial Intelligence (AI) were evaluated using the Kolmogorov-Smirnov test based on the findings of the normalcy test shown in Table 3.

Table 3. Normality of data

Faculty Researchers' Awareness, Acceptance, and Utilization of AI	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
Faculty Researchers' Awareness of AI	0.113	135	0.102
Faculty Researchers' Acceptance of AI	0.118	135	0.211
Faculty Researchers' Utilization of AI	0.195	135	0.092

Note: a – Lilliefors significance correction applied. Test of normality.

The assumption of normalcy was upheld because the significance values for each of the three variables were higher than the traditional alpha threshold of 0.05. In particular, $D = 0.113$ with $p = 0.102$ was the statistic for awareness of AI, $D = 0.118$ with $p = 0.211$ for acceptance of AI, and $D = 0.195$ with $p = 0.092$ for utilization of AI. These findings support the use of parametric statistical techniques in subsequent analyses by indicating that the distribution of responses for all three variables did not substantially depart from a normal distribution [31].

III. Results

A. Faculty Researchers' Demographic Profile

Table 4 shows that 135 faculty researchers, representing a range of institutions, specializations, academic ranks, and age groups, participated in the study. With comparatively equal representation in the younger (24–29 and 30–35) and older (48–60) age groups, the largest percentage of participants (33.33%) was in the 42–47 age range. Gender-wise, women comprised 71.11% of the sample, while men comprised 28.89%.

60% of respondents were from the Department of Education (DepEd), and forty percent were from Nueva Ecija University of Science and Technology (NEUST). Although a wide range of academic ranks were represented, Teacher III (28.89%) was the most common, followed by Instructor I and Lecturer on an Hourly Basis.

Education was the most represented specialization (37.04%), followed by agriculture (31.11%), management, information technology, and other sciences. This suggests that the faculty is multidisciplinary and can explore a range of perspectives on artificial intelligence.

Table 4. Faculty researchers' profile

Faculty Profile		**Frequency**	**Percent (%)**
Age	24–29	24	17.78
	30–35	19	14.07
	36–41	12	8.89
	42–47	45	33.33
	48–53	24	17.78
	54–60	11	8.15
	Total	135	100
Sex	Male	39	28.9
	Female	96	71.1
	Total	135	100.0
Institution	Department of Education	81	60.0
	Nueva Ecija University of Science and Technology	54	40.0
	Total	135	100.0
Academic Rank	Lecturer on an Hourly Basis	18	13.33
	Instructor I	15	11.11
	Instructor III	3	2.22
	Assistant Professor III	3	2.22
	Assistant Professor IV	6	4.44
	Associate Professor I	6	4.44
	Associate Professor V	3	2.22
	Teacher I	3	2.22
	Teacher II	9	6.67
	Teacher III	39	28.89
	Master Teacher I	12	8.89
	Master Teacher II	9	6.67
	Special Needs Education Teacher I	3	2.22
	Principal II	3	2.22
	Head Teacher III	3	2.22
	Total	135	100.0
Specialization	Agriculture	42	31.11
	Education	50	37.04
	Management	17	12.59
	Information Technology	14	10.37
	Other Sciences	12	8.89
	Total	135	100

B. Overall Levels of AI Awareness, Acceptance, and Utilization

1) AI awareness level

With a total weighted mean of 3.94 and a standard deviation of 0.83, which is interpreted as "Agree", Table 5 shows that faculty researchers' awareness of Artificial Intelligence (AI) in academic contexts is generally high. This suggests that although there are differences in the level of familiarity with different aspects, faculty members are generally aware of AI and its applicability to scholarly work.

Table 5. Faculty researchers' awareness of AI

Faculty Researchers' Awareness of AI	**Weighted Mean**	**Standard Deviation**	**Interpretation**
I am aware of the basic concepts of Artificial Intelligence (AI).	4.29	0.83	Strongly Agree
I am aware of AI applications in academic research (e.g., data analysis, literature review, manuscript writing).	4.00	0.94	Agree
I understand how AI can be used to enhance the research process.	4.13	0.88	Agree
I am aware of ethical considerations related to AI in research.	4.02	0.86	Agree
I know of AI tools that can assist in statistical analysis and data interpretation.	3.76	1.10	Agree
I am informed about AI-assisted journal indexing and citation analysis.	3.58	1.11	Agree
My institution provides sufficient information about AI's role in academia.	3.80	1.00	Agree
Total Weighted Mean	3.94	0.83	Agree

The statement "I am aware of the basic concepts of Artificial Intelligence (AI)" was most strongly agreed with by faculty researchers ($M = 4.29$, SD = 0.83), indicating that respondents had a firm grasp of AI fundamentals. They also showed substantial awareness regarding AI's utility in enhancing research processes ($M = 4.13$) and its applications in academic research tasks such as data analysis and manuscript writing ($M = 4.00$). Awareness of ethical considerations related to AI in research also received a relatively high score ($M = 4.02$), indicating that researchers are not only aware of the tools but are also mindful of their responsible use.

However, slightly lower awareness levels were observed in more specialized areas. For instance, familiarity with AI tools used for statistical analysis and data interpretation yielded a mean of 3.76, while awareness of AI-assisted journal indexing and citation analysis received the lowest mean rating of 3.58, albeit still interpreted as "Agree." This may suggest a knowledge gap related to more technical or advanced AI applications.

Interestingly, institutional support for disseminating information about AI in academia was rated moderately ($M = 3.80$), suggesting that while faculty are self-informed, more structured institutional efforts could further enhance awareness.

In summary, faculty researchers demonstrate a commendable level of awareness regarding AI in academic settings, particularly in foundational concepts and research applications. Nonetheless, there remains room for improvement in promoting deeper knowledge of specific AI functionalities and increasing institutional support for AI literacy initiatives.

2) AI acceptance level

The results from Table 6 reveal that faculty researchers generally demonstrate a positive acceptance of Artificial Intelligence (AI) in academic research, with a total weighted mean of 4.05 and a standard deviation of 0.72, corresponding to the interpretation "Agree". Among the individual indicators, the statement "I believe AI can enhance the quality of research output" received the highest level of agreement, with a weighted mean of 4.38 and standard deviation of 0.85, interpreted as "Strongly Agree". This was closely followed by "I find AI tools helpful in improving research efficiency", which also earned a "Strongly Agree" rating ($M = 4.24$, SD = 0.82).

Moderate to high levels of agreement were also seen in other areas: "I am open to incorporating AI into my research activities" ($M = 4.18$, SD = 0.90), and "I trust AI-generated results when used appropriately in research" ($M = 4.04$, SD = 0.97), indicating openness and trust in AI applications. On the other hand, slightly lower but still positive means were observed in responses to statements like "AI can complement human expertise rather than replace it in academia" ($M = 3.78$, SD = 1.01), and "I am comfortable using AI-powered research tools" ($M = 3.89$, SD = 0.90).

Notably, the indicator "Ethical and data privacy concerns affect my willingness to adopt AI in research" scored a mean of 3.82 with a standard deviation of 0.88, indicating that while acceptance is generally favorable, ethical and privacy considerations still influence decisions regarding AI use.

Table 6. Faculty researchers' acceptance of AI

Faculty Researchers' Acceptance of AI	Weighted Mean	Standard Deviation	Interpretation
I believe AI can enhance the quality of research output.	4.38	0.85	Strongly Agree
I find AI tools helpful in improving research efficiency.	4.24	0.82	Strongly Agree
I am open to incorporating AI into my research activities	4.18	0.90	Agree
I trust AI-generated results when used appropriately in research.	4.04	0.97	Agree
AI can complement human expertise rather than replace it in academia.	3.78	1.01	Agree
I am comfortable using AI-powered research tools.	3.89	0.90	Agree
Ethical and data privacy concerns affect my willingness to adopt AI in research.	3.82	0.88	Agree
Total Weighted Mean	4.05	0.72	Agree

3) AI utilization level

The results in Table 7 show that faculty researchers moderately utilize AI in their academic activities, with a total weighted mean of 3.63 and a standard deviation of 0.96, suggesting an overall interpretation of "Agree". Among the listed indicators, the highest reported utilization was for AI-powered grammar and writing tools such as Grammarly, QuillBot, and ChatGPT, which received a weighted mean of 4.04 and a standard deviation of 1.07. This suggests that these tools are widely adopted to assist with academic writing and enhance manuscript quality.

Utilization of AI tools for exploring new technologies to boost research productivity also scored relatively high ($M = 3.78$, SD = 1.17), indicating that many faculty members are proactive in experimenting with emerging AI innovations. Similarly, AI's role in generating research ideas and hypotheses ($M = 3.73$, SD = 1.06) and in student instruction and research supervision ($M = 3.73$, SD = 1.12) shows promising engagement with AI in teaching and early research stages.

Moderate use was observed in AI applications for literature reviews ($M = 3.76$, SD = 1.14) and citation/reference management ($M = 3.33$, SD = 1.23), suggesting these tools are being integrated, albeit inconsistently, into research workflows.

The lowest utilization was found in AI-driven data analysis tools such as Python libraries or integrated SPSS platforms, which received a mean of 3.00 with a standard deviation of 1.26, indicating variability in usage and possible gaps in technical proficiency or accessibility.

Table 7. Faculty researchers' AI utilization

Faculty Researchers' AI Utilization	Weighted Mean	Standard Deviation	Interpretation
I use AI tools for literature reviews (e.g., ChatGPT, Elicit, Semantic Scholar).	3.76	1.14	Agree
I utilize AI for data analysis (e.g., AI-driven statistical software like SPSS with AI integration, Python AI libraries).	3.00	1.26	Agree
I employ AI-powered grammar and writing tools (e.g., Grammarly, QuillBot, ChatGPT) for academic writing.	4.04	1.07	Agree
I use AI-based citation and reference management tools (e.g., Mendeley, Zotero with AI suggestions).	3.33	1.23	Agree
AI assists me in generating research ideas and hypotheses.	3.73	1.06	Agree
I incorporate AI-based tools in student instruction and research supervision.	3.73	1.12	Agree
I actively explore new AI technologies to improve my research productivity.	3.78	1.17	Agree
Total Weighted Mean	3.63	0.96	Agree

C. Correlation between Demographic Traits and AI-Related Variables

Table 8 presents the Pearson product-moment correlation results, which were conducted to examine the relationship between faculty profile variables (age and academic rank) and their awareness, acceptance, and utilization of AI in research. The analysis revealed statistically significant negative correlations between age and all three dependent variables: AI awareness ($r = -0.190$, $p = 0.002$), AI acceptance ($r = -0.181$, $p = 0.003$), and AI utilization ($r = -0.189$, $p = 0.003$). These results suggest that as age increases, there is a slight but statistically significant decrease in faculty members' awareness, acceptance, and usage of AI tools in academic contexts. Although the correlations are relatively weak, they indicate a consistent trend of reduced engagement with AI among older faculty members.

In contrast, academic rank was not found to have a statistically significant relationship with AI awareness ($r = -0.086$, $p = 0.320$), acceptance ($r = 0.006$, $p = 0.942$), or utilization ($r = -0.120$, $p = 0.165$). These findings suggest that a faculty member's position or rank in the academic hierarchy does not significantly influence their engagement with AI technologies in research and scholarly activities.

Table 8. Correlation between faculty profile (age and academic rank) and AI awareness, acceptance, and utilization

Correlation Analysis between Profile and AI-Related Variables		Awareness of AI	Acceptance of AI	Utilization of AI
Age	Correlation Coefficient	−0.190**	−0.181**	−0.189**
	Sig. (2-tailed)	0.002	0.003	0.003
	N	135	135	135
Academic Rank	Correlation Coefficient	−0.086	0.006	−0.120
	Sig. (2-tailed)	0.320	0.942	0.165
	N	135	135	135

Note: *: Significant at $p < 0.05$, **: Significant at $p < 0.01$, ***: Significant at $p < 0.001$.

D. Group Differences in AI Awareness, Acceptance, and Utilization

1) Gender differences

Table 9 shows the independent samples t-test. It was conducted to determine whether there are statistically significant differences between male and female faculty members in their levels of AI awareness, acceptance, and utilization.

The results showed no significant difference between male ($M = 4.0218$) and female ($M = 3.9062$) participants in terms of AI awareness, t(133) = 0.733, $p = 0.465$. Similarly, AI acceptance did not significantly differ between males ($M = 3.9890$) and females ($M = 4.0714$), t(133) = −0.595, $p = 0.553$. Lastly, there was no significant difference in AI utilization, t(133) = −0.665, $p = 0.507$, with males reporting a mean of 3.5385 and females 3.6607.

These findings suggest that sex does not significantly influence faculty members' awareness, acceptance, or actual use of AI in academic research. Both male and female faculty demonstrate relatively similar engagement with AI technologies, indicating gender-neutral access and perception within the sampled institutions.

Table 9. Comparison between male and female in terms of awareness, acceptance, and utilization of AI

Sex		N	Mean	t	df	Sig. (2-tailed)
Awareness of AI	Male	39	4.0218	0.733	133	0.465
	Female	96	3.9062			
Acceptance of AI	Male	39	3.9890	−0.595	133	0.553
	Female	96	4.0714			
Utilization of AI	Male	39	3.5385	−0.665	133	0.507
	Female	96	3.6607			

2) Institutional differences

Table 10 presents the results of an independent samples t-test conducted to compare faculty responses from DepEd and NEUST regarding their awareness, acceptance, and utilization of AI in academic research. NEUST faculty ($M = 4.3732$) reported significantly higher levels of AI awareness than their DepEd counterparts ($M = 3.6505$), indicating a statistically significant difference in awareness between the two institutions (t(133) = −5.476, $p < 0.001$). This implies that NEUST faculty members have a greater understanding of Artificial Intelligence (AI) and its applications in research than do Department of Education (DepEd) faculty.

A significant difference was also found in the use of AI (t(133) = −2.395, $p = 0.018$), favoring NEUST faculty ($M = 3.8651$) over DepEd faculty ($M = 3.4656$). This implies that NEUST faculty members are increasingly incorporating AI tools into their research and academic processes. Although there are differences in actual knowledge and usage, there was no discernible difference in the acceptance of AI (t(133) = −1.035, $p = 0.302$), indicating that both groups are equally open and trusting of the use of AI in research. These results highlight institutional variations in AI exposure, training, and potential infrastructure support in research settings.

Table 10. Comparison between DepEd and NEUST in terms of awareness, acceptance, and utilization of AI

Institution		N	Mean	t	df	Sig. (2-tailed)
Awareness of AI	DepEd	81	3.6505	−5.476	133	0.000
	NEUST	54	4.3732			
Acceptance of AI	DepEd	81	3.9947	−1.035	133	0.302
	NEUST	54	4.1270			
Utilization of AI	DepEd	81	3.4656	−2.395	133	0.018
	NEUST	54	3.8651			

3) Specialization differences in AI awareness, acceptance, and utilization

Table 11 shows the multivariate test. To determine whether the field of expertise of faculty members had a significant impact on the combined dependent variables of AI awareness, acceptance, and utilization, a Multivariate Analysis of Variance (MANOVA) was performed. The results showed a statistically significant multivariate effect of specialization on the combined dependent variables, with $V = 0.297$, F(12,390) = 3.568, $p < 0.001$, using Pillai's Trace as the test statistic.

According to this research, faculty specialization has a significant impact on how academic researchers interact with AI in various ways, including awareness, acceptance, and utilization. According to Pillai's Trace (0.297), the effect size shows a moderate multivariate effect, indicating that faculty attitudes and practices regarding the use of AI in scholarly work may be significantly influenced by field-specific differences.

Table 11. Multivariate test for specialization

Multivariate Test	Value	F	Hypothesis df	Error df	Sig.
Pillai's Trace	0.297	3.568	12.000	390.000	0.000

To determine where the variations in AI awareness across specializations lie, a post hoc test was conducted after the significant MANOVA result. Significant variations in AI awareness across a number of specialization groups were found by the post hoc comparison.

As shown in Table 12, Information and Communication Technology (ICT) faculty members reported the highest mean awareness score ($M = 4.7853$), which was significantly higher than all other specializations and formed its own subset (c), indicating a markedly higher level of AI awareness. Since ICT workers are more likely to have received training in and direct exposure to AI technologies, this outcome is to be expected.

A distinct subset (b) contained the Education group

(*M* = 4.1570), which demonstrated a statistically higher level of awareness than ICT but lower than Agriculture, Management, and Other Sciences. Both the lower-tier and middle-tier groups (ab) shared subset membership with the Agriculture group (*M* = 3.8331), indicating that it had an intermediate awareness level that was not substantially different from either.

There was no discernible difference between the faculty members from Management (*M* = 3.3116) and Other Sciences (*M* = 3.3096), which made up the lowest awareness group (a). These results suggest that specialization has a major impact on academic research awareness of AI, with technology-oriented disciplines showing noticeably higher levels of awareness than others.

Table 12. Post hoc test for awareness of AI

Specialization	N	Subset			
		a	b	c	Subset Group
Other Sciences	12	3.3096	-	-	a
Management	17	3.3116	-	-	a
Agriculture	42	3.8331	3.8331	-	ab
Education	50	-	4.1570	-	b
Information and Communication Technology	14	-	-	4.7853	c

Note: Different letters are significantly different.

Table 13 shows the post hoc analysis. It was conducted to further investigate differences in AI acceptance among faculty based on their field of specialization, following the significant multivariate test result. The findings show that Information and Communication Technology (ICT) faculty had the highest mean acceptance score (*M* = 4.4184), which fell into its own subset (b), indicating a significantly greater acceptance of AI compared to other fields, particularly Management.

In contrast to ICT professionals, faculty in the Management specialization had the lowest mean acceptance score (*M* = 3.5714) and were solely included in subset (a), indicating a much lower level of acceptance of AI. The intermediate category (ab) contained specializations like education (*M* = 4.1571), agriculture (*M* = 4.0272), and other sciences (*M* = 3.9048), suggesting that there were no statistically significant differences between them. They were still below ICT, though, and much higher than Management.

These findings imply that faculty attitudes toward AI are significantly influenced by their disciplinary backgrounds. While more traditional or managerial disciplines show relatively conservative attitudes toward integrating AI into research workflows, fields more deeply rooted in technological practices, such as ICT, tend to show higher levels of acceptance.

Table 13. Post hoc test for acceptance of AI

Specialization	N	Subset		
		a	b	Subset Group
Management	17	3.5714	-	a
Other Sciences	12	3.9048	3.9048	ab
Agriculture	42	4.0272	4.0272	ab
Education	50	4.1571	4.1571	ab
Information and Communication Technology	14	-	4.4184	b

Note: Different letters are significantly different.

After the significant multivariate test result, post hoc analysis was performed, as shown in Table 14, to identify the areas where there are notable variations in AI utilization across specializations. According to the findings, faculty in the field of Information and Communication Technology (ICT) had the highest mean AI utilization score (*M* = 4.2755), placing them in subset 3 (c), which was significantly higher than that of most other fields. According to this research, ICT professionals are actively incorporating AI tools into their academic and research practices in addition to being more conscious of and receptive to AI.

At the other end of the spectrum, faculty from Management reported the lowest mean utilization score (*M* = 3.0420), and were grouped exclusively in subset 1 (a). This suggests a significantly lower level of AI tool usage compared to other specializations, particularly ICT and Education. Other Sciences (*M* = 3.1310) and Agriculture (*M* = 3.5306) formed intermediate groups, spanning multiple subsets (ab and abc, respectively), indicating moderate utilization levels that are not statistically different from those of both lower- and higher-performing groups. Education faculty (*M* = 3.8400) fell into subsets 2 and 3 (bc), demonstrating relatively high AI utilization, significantly higher than Management and Other Sciences, and comparable to Agriculture and ICT.

Overall, the post hoc results show distinct disciplinary differences in the integration of AI, with managerial fields lagging behind and technology-centric fields like ICT leading in actual use. This variation implies that faculty adoption levels of AI may be significantly influenced by exposure to discipline-specific tools, technical proficiency, and tool relevance.

Table 14. Post hoc test for Utilization of AI

Specialization	N	Subset			
		1	2	3	Subset Group
Management	17	3.0420	-	-	a
Other Sciences	12	3.1310	3.1310	-	ab
Agriculture	42	3.5306	3.5306	3.5306	abc
Education	50	-	3.8400	3.8400	bc
Information and Communication Technology	14	-	-	4.2755	c

Note: Different letters are significantly different.

IV. Discussion

A. Comprehensive Analysis of AI Awareness, Acceptance, and Utilization

According to the results, faculty researchers are generally well-informed about Artificial Intelligence (AI) and its application in scholarly research. This broad body of fundamental knowledge implies that AI literacy is no longer confined to specialized domains but is instead emerging as a crucial aspect of academic proficiency. The majority of respondents are aware of the fundamental ideas behind artificial intelligence, indicating that the academic community has a broad understanding of this new technology. This fundamental knowledge is essential because it provides a starting point for more in-depth interaction with AI tools and applications in research. Additionally, faculty members demonstrate a high level of awareness regarding the ways in which AI can improve different phases of the research process. Applications in data analysis, literature reviews, and manuscript preparation are among them; these are fields where artificial intelligence is being used more and more to improve productivity and optimize workflows. This kind of awareness is indicative of a growing understanding of the benefits AI can offer to academic work, allowing researchers to carry out more creative and effective research [1].

But this broad awareness goes beyond simple familiarity; it also reflects faculty members' changing research mindsets, which are moving away from conventional approaches and toward technology-enhanced inquiry. Faculty exhibit a growing ability to critically assess AI tools' potential for research innovation rather than merely being familiar with them. This shift in perspective underscores the growing sophistication of academics' understanding of AI literacy.

Respondents also acknowledge the ethical concerns associated with the application of AI in research. This knowledge is important because it shows that academics are not only excited about using AI to increase productivity but also carefully consider the ramifications of doing so, especially when it comes to matters like authorship, data privacy, and academic integrity.

Recognizing the dangers of overusing AI in research is crucial, though. Scientific integrity may be threatened by bias, data misrepresentation, or information fabrication brought on by an over-reliance on AI. AI speeds up discovery, but when used improperly, it can damage the credibility of research, according to recent studies [15, 16]. Therefore, encouraging faculty ethical awareness and AI literacy is essential for responsible and reliable academic innovation.

A balanced grasp of the opportunities and possible risks is emphasized by ethical awareness, which is a crucial element of responsible AI use. incorporating ethical considerations from the very beginning of AI development, according to Rodríguez *et al.* [32]. The findings also indicate comparatively low familiarity with more specialized AI applications, such as citation analysis, statistical data interpretation tools, and AI-assisted journal indexing, despite the high level of general awareness. AI is being used more and more in research to automate data analysis tasks like analyzing big datasets and forecasting publication trends. These tools can process large volumes of bibliometric data, but in order to prevent biases or errors, their results must be carefully interpreted and verified by professionals [33, 34]. These are sophisticated features that call for a more sophisticated comprehension of AI technologies; a lack of awareness in these areas might suggest that specific training and professional development are necessary.

The function of institutional support is another crucial element that has been emphasized. Moderate levels of institutional training and communication regarding AI in academia were reported by faculty members. More proactive institutional involvement, like workshops, seminars, or integrating AI literacy into faculty development programs, could help close awareness gaps, particularly in technical domains, even though individuals may choose to learn about AI on their own [35]. The results show that faculty researchers have a favorable opinion of AI. They are conscious of the ethical frameworks surrounding its use as well as its potential and relevance in academic research. However, more targeted exposure to AI's sophisticated applications and more institutional support are required to promote deeper and wider awareness within the academic community in order to fully reap its benefits.

This pattern is consistent with the Unified Theory of Acceptance and Use of Technology (UTAUT2), which holds that social influence, performance expectancy, effort expectancy, and facilitating conditions all affect people's behavioral intention to use technology [36]. Strong performance and effort expectations are reflected in the faculty's high awareness and acceptance of AI; they view it as both practical and reasonably simple to use in research. Moderate utilization scores, however, imply that full adoption may be limited by enabling factors like institutional support and training. The observed discrepancy between awareness/acceptance and actual use can thus be more clearly explained theoretically by incorporating these findings with the UTAUT2 model.

Additionally, the results show that faculty researchers are generally inclined to embrace Artificial Intelligence (AI) in academic research. The majority of respondents indicate that they understand the value of AI as a transformative tool in the scholarly process by expressing confidence in its ability to improve efficiency and the quality of research. It is widely held that Artificial Intelligence (AI) improves academic work overall, particularly in terms of improving writing quality, streamlining data processing, and assisting with evidence-based decision-making [6, 37]. Worries about reliability and ethical risks influence the willingness to fully embrace AI, so acceptance is not absolute. This nuanced perspective is in line with what Puerta-Beldarrain *et al.* [38] refer to as "human–AI collaboration patterns", in which AI is viewed as an adjunct to human expertise rather than a substitute for it. It is implied that acceptance is dependent on context and trust: faculty are open to using AI as long as they maintain authority over the interpretation and decision-making procedures.

Additionally, faculty members are very receptive to incorporating AI into their own research endeavors. This willingness suggests an understanding of the usefulness of AI when used properly as well as a readiness to adjust to new technological developments. Additionally, most respondents have faith in AI-generated outcomes, especially when these tools are employed as tools rather than as independent decision-makers. This confidence is a result of people becoming more accustomed to and at ease with AI systems that are meant to support human judgment rather than take its place.

Some responses show some caution and hesitancy, especially when it comes to ethical and data privacy issues, even though the majority of researchers see AI as a complementary asset to human expertise. Faculty members admit that these worries may influence their willingness to fully integrate AI into their research practices, particularly when it comes to possible information misuse or a lack of transparency in AI-generated outputs. Furthermore, even though most people are at ease using AI-powered tools, some people still voice concerns, perhaps as a result of their lack of exposure to, training in, or faith in the dependability of these technologies. This pattern implies that acceptance is conditional rather than absolute, with faculty members more likely to accept AI when they see clear research benefits and adequate ethical protections. As a result, acceptance shows a thoughtful rather than passive adoption, reflecting a dynamic balance between academic integrity preservation and faith in

AI capabilities. Overall, the results show that the research community is generally in favor of the adoption of AI, acknowledging its benefits while also being aware of the ethical and technical issues that need to be resolved to allow for its widespread and responsible use.

Additionally, the results demonstrate that faculty researchers employ AI to a moderate degree in their scholarly endeavors. The most popular AI programs are those that assist with writing and grammar, such as ChatGPT, QuillBot, and Grammarly. These resources are now commonly used in the research process, particularly to improve the clarity, tone, and structure of academic writing. Their widespread application shows how AI has evolved into a practical tool for manuscript preparation, particularly for editing and enhancing written outputs. Nonetheless, Nurchurifiani [39] contends that although AI-powered programs such as QuillBot, ChatGPT, and Grammarly can enhance academic writing and research productivity, scholarly integrity necessitates addressing potential biases and ethical concerns.

AI is also being used by many faculty members to investigate new technologies that are intended to boost research productivity. This implies that researchers are actively looking for creative ways to improve their workflows in addition to utilizing already-existing tools. AI is also being used to generate research ideas and hypotheses, suggesting that it is becoming more and more important in assisting with the initial phases of academic research and creative ideation. In a similar vein, Wang *et al.* [40] claim that AI enables researchers to create hypotheses, plan experiments, and obtain insights that might not have been achievable with just conventional scientific techniques. Additionally, by addressing cognitive barriers like mental model limitations and biases, AI can improve the quantity, speed, and quality of creative idea generation in problem-solving [41].

AI is being integrated into research supervision and student instruction in teaching-related activities, which shows that AI is being used for more than just individual research assignments. In order to facilitate individualized learning and direct research development, this calls for a gradual integration of AI into academic mentoring and pedagogical practices. Although less frequent, AI tools are used for reference management and literature reviews. Although many faculty members use Mendeley or Zotero to manage citations and ChatGPT or Elicit to scan literature, the use of these tools is still not widespread. This might be explained by different degrees of experience or a predilection for conventional techniques.

AI-driven data analysis, which includes programs like Python libraries and statistical software with AI integration, is the least used field. Technical obstacles like a lack of training, restricted access, or inexperience with coding-based environments could be the cause of this lower usage. It also implies that faculty members still hesitate or find it difficult to use more sophisticated, data-intensive AI tools, even though they are at ease with more approachable AI applications. Overall, the findings point to faculty researchers using AI in meaningful ways, especially for writing, idea generation, and productivity-boosting tasks. However, more assistance, instruction, and exposure to technical AI applications—particularly in data analysis—are required to fully realize AI's potential in research.

B. Impact of Demographic Traits on AI Engagement

In the meantime, the correlation analysis's findings show that faculty researchers' use of AI tools in their academic work is significantly influenced by their age. In particular, faculty members' awareness, acceptance, and use of AI in research writing gradually decreases with age. The steady downward trend suggests that younger faculty are generally more open to and involved with AI technologies, even though the associations are not very strong. This could be as a result of their academic training exposing them to more digital tools, their increased familiarity with new technologies, or their greater desire to try out novel workflows. Volkom *et al*. [42] found that older adults have less positive attitudes toward technology, less social interaction, and a tendency to use a smaller variety of technology.

Age seems to have a moderating effect on technology use in the context of UTAUT2. The use of AI tools may be limited by older faculty members' perceptions of greater barriers and lower effort expectations. On the other hand, younger faculty members are more adaptable and performance expectant, which results in a higher adoption of AI. This is in line with earlier UTAUT-based research on how different generations use technology.

This pattern suggests that there may be a generational gap in the academic community's interest in AI. In order to feel comfortable using AI in their research, older faculty members might need more training and assistance, be more cautious, or be unfamiliar with newer tools. Aiming to close the gap and promote the inclusive adoption of AI across all age groups, these findings underscore the necessity of focused professional development programs that are tailored to older faculty members.

However, the findings indicate that faculty members' awareness, acceptance, and use of AI in research are not substantially impacted by their academic rank. According to this, exposure, digital literacy, and field relevance are more important factors than academic standing because technological engagement transcends hierarchical positions. Individuals' levels of engagement with AI seem to be comparable regardless of whether they are junior or senior academics. This implies that adoption of AI is not influenced by one's standing in the academic hierarchy. Rather, other elements like technology exposure, discipline-specific requirements, institutional support, or personal attitudes might be more important. Age appears to be a modest but consistent factor influencing faculty researchers' use of AI tools, while academic rank has no discernible impact. The adoption of AI chatbots in higher education is largely dependent on technological proficiency, with perceptions across academic disciplines being similar, according to Saihi *et al*. [43]. In order to guarantee fair access to and use of AI in academic research across the faculty spectrum, this realization highlights the significance of age-inclusive training and support strategies.

Additionally, the analysis's findings indicate that faculty members' use of AI tools in academic research is not substantially influenced by their sex. Comparable levels of awareness, acceptance, and use of AI were reported by male and female faculty members, indicating that gender has no bearing on how AI is viewed or applied in research settings.

This result suggests that across the sampled academic institutions, access to and use of AI technologies seem to be gender-neutral. Men and women may have equal opportunities to investigate and incorporate AI into their research processes, as evidenced by the similarities in engagement. It also implies that other factors, like age, training, institutional support, or discipline, are probably more influential in determining any obstacles or facilitators to the adoption of AI than gender. In a similar vein, Khanfar *et al.* [44] claim that technological, organizational, social, individual, and environmental factors all have an impact on the adoption of AI.

All things considered, the results highlight a balanced environment where male and female researchers are equally positioned to gain from and advance the integration of AI in academia. This supports the idea that initiatives to encourage the adoption of AI should continue to be inclusive, emphasizing resource accessibility and skill development over gender-specific targeting.

C. Institutional and Disciplinary Differences: Causes and Implications

Furthermore, the comparison of DepEd and NEUST faculty shows significant institutional differences in AI awareness and use, but not acceptance. NEUST faculty members exhibit greater knowledge of Artificial Intelligence (AI) and its uses in scholarly research, indicating that they have had greater exposure to or knowledge of contemporary AI methods and tools. Stronger institutional initiatives, training courses, or a research culture that actively encourages the application of AI technologies could be the cause of this.

NEUST faculty members exhibit higher levels of AI utilization in addition to greater awareness, suggesting that they are not only more informed about AI but are also using these tools more actively in their research and academic endeavors. Better infrastructure, easier access to digital tools, or more robust institutional leadership support for incorporating AI into research procedures could all be contributing factors to this trend. Furthermore, the data might be explained by the fact that, in contrast to basic education institutions, NEUST, being a higher education institution, cultivates a more established research culture. School-based management, teacher preparation, national learning strategies, quality assurance, accountability, and attaining basic education competencies for all are the main focuses of basic education in the Philippines, according to Bernido [45]. However, research is a required core function, and HEIs are expected to support industry partnerships, innovation, and national development. It is believed that establishing a robust research culture is crucial for both institutional development and societal influence [46–48].

On the other hand, DepEd faculty members are as accepting of AI as NEUST faculty members, despite reporting lower levels of awareness and usage. This implies that even though one group is currently more advanced in terms of practical adoption, both groups are equally receptive to the idea of using AI in research. The fact that both institutions share this degree of acceptance suggests that there is room for AI integration; however, in order to fully utilize these technologies, DepEd might need more institutional support, training, and easily accessible resources. All things considered, the results demonstrate how important institutional context is in affecting faculty members' use of AI. How AI is adopted and used in academic settings is probably influenced by variations in professional development opportunities, technology accessibility, and support networks.

In the meantime, the multivariate analysis's findings show that faculty members' involvement with Artificial Intelligence (AI) in scholarly research is significantly influenced by their area of expertise. This covers their degree of knowledge, acceptance, and practical application of AI tools. Discipline-specific variations in exposure to and adoption of AI technologies were highlighted by the analysis, which showed that various specializations engage with the technology in unique ways.

This result suggests that different fields have different approaches to integrating AI in academia. Faculty in technology-focused fields, for instance, are more likely to be knowledgeable about, open to, and actively use AI tools in their research processes. Those in less tech-focused fields, on the other hand, might be less exposed to AI or might not see its immediate application to their jobs. Technology-oriented (STEM) and non-technology-oriented (non-STEM) groups in higher education adopted AI in significantly different ways, according to Acosta-Enriquez *et al.* [49]. This underscores the need for context-specific strategies to address different perceptions, barriers, and facilitators.

D. Theoretical and Practical Contributions of the Findings

These differences appear to be both statistically significant and practically significant, as indicated by the moderate multivariate effect. Diverse degrees of AI engagement are likely caused by specialization, which also influences the type of research tasks, the accessibility of AI-compatible tools, and the level of training or support obtained. The results highlight how crucial discipline-specific, tailored approaches are to encouraging AI integration in research. To ensure that all faculty, regardless of specialization, can successfully adopt and benefit from AI technologies in their academic work, there should be training, resources, and institutional policies that are specifically tailored to each field's particular needs and contexts.

Institutions should implement focused, discipline-sensitive interventions to close these disciplinary gaps. For instance, practical workshops that link AI tools to domain-specific applications like precision agriculture and predictive analytics could be beneficial for management and agriculture faculty. AI may be used more effectively by education faculty for personalized learning systems, assessment, and instructional design. In the meantime, STEM and ICT disciplines can act as institutional "AI mentors," promoting interdisciplinary cooperation through mentorship programs or research clusters. In addition to increasing adoption, these doable tactics would encourage fair and significant AI integration in all academic fields.

Furthermore, the post hoc analysis's findings show that faculty researchers' awareness of AI varies significantly by discipline. Because they work directly with digital systems and are more familiar with AI tools and concepts, faculty who specialize in Information and Communication Technology

(ICT) had the highest level of awareness. This group was particularly noteworthy, highlighting the close connection between their field and AI's technological nature.

Though not as noticeable as in ICT, faculty in the field of education also showed a comparatively high level of awareness. The increased focus on digital pedagogy, AI-assisted learning platforms, and research advancements in educational systems may be the cause of their increased awareness. However, those in agriculture were categorized as intermediate, indicating that although they have some knowledge of AI, their exposure to and use of it are not as widespread or integrated as those in ICT or education. In agricultural research, where technologies like precision farming and predictive analytics are still gaining traction, this could be a reflection of the increasing but uneven integration of AI.

The lowest levels of awareness were reported by faculty members in the fields of management and other sciences, indicating that they had little exposure to AI applications in their fields. These findings might indicate that professional development and institutional initiatives in these fields have not kept up with technological advancements, or that AI is not yet fully incorporated into the research practices of these disciplines. The results show that one important factor affecting AI awareness is the field of specialization. While some disciplines may need focused interventions, like training programs, cross-disciplinary collaborations, or access to AI tools, to close the awareness gap, disciplines more closely aligned with digital and technological innovation are naturally more advanced in their understanding of AI [50–53].

Similarly, the post hoc analysis's findings highlight the significance of disciplinary background in influencing perceptions of emerging technologies by revealing notable variations in AI acceptance across faculty specializations. In contrast to other fields, faculty members who specialize in Information and Communication Technology (ICT) reported the highest level of acceptance. Their familiarity with AI systems, regular use of digital tools, and a greater comprehension of AI's potential and constraints are probably the main causes of this high acceptance.

Faculty in the Management field, on the other hand, showed the least amount of acceptance of AI in research. Their inclusion in a separate subset implies a more conservative or cautious approach to integrating AI. Less frequent exposure to AI technologies in managerial research or reservations regarding the suitability of AI in decision-making and strategy-driven domains may have contributed to this.

Between the extremes of ICT and management, faculty from other sciences, agriculture, and education demonstrated a moderate level of acceptance of AI. Although these fields are not specifically focused on technology, they are increasingly coming across AI applications, like in data-driven agriculture, educational technology, and scientific modeling, which could account for their intermediate positioning. Although not as ingrained or pervasive as in ICT, their acceptance levels show a growing openness to AI. These results demonstrate how faculty perceptions and acceptance of AI are influenced by discipline-specific familiarity and utility. Technologically intensive fields are not only more aware of AI but also more receptive to its integration into research [54–56]. In contrast, more traditional or less tech-oriented disciplines may require greater support, exposure, and contextual relevance to cultivate broader acceptance [57–59].

The impact of specialization on involvement with emerging technologies is further supported by the post hoc analysis, which also shows clear disciplinary differences in faculty researchers' use of AI. Compared to most other disciplines, faculty from the Information and Communication Technology (ICT) department reported using AI at the highest rate. Their high levels of use demonstrate their proficiency with technology as well as the great applicability of AI tools in their research and teaching methodologies. Because they are more accustomed to, have easier access to, and are more comfortable with using these tools, ICT professionals are undoubtedly leading the way in incorporating AI into their academic work.

The management faculty, on the other hand, demonstrated the least amount of AI use, suggesting that AI was not fully integrated into their research processes. This disparity could be caused by a lack of institutional emphasis on technology adoption in management education and research, a lack of exposure to sophisticated digital tools, or a perception of AI's less usefulness in their line of work. Arsenyan and Piepenbrink [60], on the other hand, claim that since 2014–2015, AI research in management has been on the rise, with a fully connected topic network structure and new topics offering insights for successful AI adoption.

Moderate AI use was seen in fields like agriculture and other sciences, indicating differing levels of access and familiarity. AI is being used more and more in these fields, particularly in modeling, simulation, and data analysis, but usage varies amongst people or subfields.

Compared to the ICT sector, the education sector used AI at a relatively high rate. It is clear that academics in this field are using AI to help with research, teaching, and learning activities like instructional design, content creation, and writing support. A growing trend of integrating AI into educational practices is reflected in their placement between the middle and higher usage subsets. These results show distinct discipline-specific trends in the adoption of AI. Technology-based fields typically use technology more than more traditional or administratively oriented fields. For these gaps to be filled and for AI to be adopted more fairly across academic specializations, the variation emphasizes the necessity of customized professional development, contextual applications, and capacity building.

All things considered, the conversation shows that although AI is widely acknowledged and accepted, its complete incorporation into scholarly research is still uneven. According to the findings, closing adoption gaps requires discipline-specific tactics, generational training, and institutional support. Access, training, and perceived relevance influence faculty engagement with AI, not the other way around. As a result, effective AI integration will require more than just having the right tools; it will also require developing institutional cultures that are inclusive, addressing ethical issues, and ensuring that all faculty members, regardless of age, discipline, or institutional affiliation, can engage in AI-enhanced scholarship.

V. Conclusion

According to the results of this study, faculty researchers exhibit a high level of awareness and acceptance of Artificial Intelligence (AI), as well as moderate levels of utilization, indicating not only familiarity but also significant engagement with AI in research settings. The majority of respondents understand the fundamental concepts of AI and recognize its potential to enhance research workflows, particularly in areas such as writing, idea generation, and data organization. Crucially, faculty members are also aware of the ethical issues surrounding AI, demonstrating a responsible and well-rounded approach to its integration. But the study finds gaps in knowledge and use of advanced AI applications, especially in fields like bibliometric tools and data analysis, indicating a need for more specialized training and institutional support. There are noticeable variations according to age, field of specialization, and institutional affiliation, even though opinions regarding AI are generally favorable and consistent across gender and academic rank. In contrast to older faculty members and those in management or non-technical disciplines, younger faculty members and those working in technology-intensive fields like ICT exhibit higher levels of awareness and use of AI. When compared to their DepEd counterparts, NEUST faculty exhibit noticeably greater awareness and application of AI, highlighting the impact of institutional research culture and support. Through the combined lens of awareness, acceptance, and utilization, this study theoretically advances our understanding of how disciplinary and demographic contexts influence the adoption of AI. By connecting these factors, an integrated framework for examining faculty researchers' technology adoption behavior is created, broadening the scope of existing models of higher education technology acceptance. These results highlight the necessity of discipline-sensitive, inclusive, and focused approaches to encourage fair and successful AI integration in academic settings.

Several important suggestions are made in light of the study's findings to improve the ethical and successful incorporation of Artificial Intelligence (AI) in scholarly research. Institutions should first put in place focused professional development initiatives that train faculty in both basic and sophisticated AI applications. Even though AI is widely known, many faculty members—particularly those in non-technical fields—need assistance in order to comprehend and make use of more specialized tools like bibliometric platforms, citation mapping, and AI-based data analytics. Peer-led learning programs, workshops, and short courses can all aid in closing this knowledge gap, especially for senior faculty members who are less likely to be using AI technologies.

Second, by integrating AI literacy into faculty development programs and granting access to AI tools via centralized platforms, academic institutions and universities should fortify their institutional support systems. Greater adoption can be encouraged by institutional infrastructure investment, such as the creation of AI resource hubs and the licensing of AI-driven software. For inclusive academic growth, it is essential to guarantee that all faculty members, irrespective of their affiliation or area of expertise, have fair access to AI technologies.

Third, by creating explicit rules and regulations that cover data privacy, authorship, bias, and transparency, organizations can encourage a culture of moral AI use. By incorporating these rules into research protocols and training materials, faculty confidence in AI systems will grow and responsible use will be promoted. This is particularly significant because academics have been both enthusiastic and cautious about the ethical implications of artificial intelligence.

Fourth, discipline-specific interventions that customize AI adoption tactics to each academic field's particular requirements should be implemented. While faculty in agriculture, management, and other sciences might profit from specialized assistance that illustrates the usefulness of AI in their fields, faculty in ICT and education are already well-versed in AI engagement. The adoption of AI in traditionally non-technical fields can be further stimulated by cross-disciplinary partnerships and case-based learning.

Last but not least, closing institutional gaps is crucial, especially between institutions of higher learning and basic education. Despite being just as receptive to AI as their NEUST counterparts, DepEd faculty members exhibit lower levels of awareness and use. In order to encourage AI literacy among primary and secondary education faculty, the Department of Education and affiliated universities must start cooperative training and resource-sharing initiatives. Research capacity and instructional quality can be greatly enhanced by coordinating institutional objectives with emerging digital competencies and national educational standards.

The scope and sample size of this study are its limitations. The findings' generalizability may be limited by the total number of participants (135) and the inclusion of only two universities. Because they might not accurately reflect the opinions or experiences of instructors and students from other institutions, the results should be interpreted cautiously. To increase the findings' external validity and applicability, future research is urged to use a bigger and more varied sample selected from several universities.

Conflict of Interest

The author declares no conflict of interest.

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