ISRG Journal of Arts, Humanities and Social Sciences (ISRGJAHSS)

ISRG PUBLISHERS
Abbreviated Key Title: ISRG J Arts Humanit Soc Sci
ISSN: 2583-7672 (Online)
Journal homepage: https://isrgpublishers.com/isrgjahss
Volume – IV Issue - II (March – April) 2026
Frequency: Bimonthly

KNOWLEDGE, ATTITUDE, PRACTICES, AND CHALLENGES OF STUDENTS ON THE ARTIFICIAL INTELLIGENCE POLICY FOR RESEARCH: BASIS FOR POLICY ENHANCEMENT

Delilah R. Amit

Cagayan State University-Aparri Campus, Aparri, Cagayan, Philippines

| **Received:** 20.03.2026 | **Accepted:** 23.03.2026 | **Published:** 05.04.2026

***Corresponding author:** Delilah R. Amit

Abstract

This study sought to examine the knowledge, attitudes, practices, and challenges of students in relation to use of AI tools, with the goal of proposing enhancements to the Cagayan State University's existing AI policy. A mixed-method approach was employed, utilizing both descriptive-correlational analysis and thematic analysis. The structured survey-questionnaire, adapted from validated studies, ensured credibility and reliability of data. A sample of 353 respondents mainly 3rd year and 4th year students from Aparri and Lal-lo campus participated in the study. Additionally, frequency and percentage distribution were used to present the respondents' profiles and challenges. Weighted means were computed for the variables of knowledge (4-point Likert scale), attitude (5-point Likert scale), and practices (5-point Likert scale). Correlation analysis was conducted to determine significant differences and associations among variables. Meanwhile, thematic analysis was applied to interpret the free-text responses. Findings revealed that respondents with knowledge of AI tools also demonstrated positive attitudes toward their use in research, which resulted in more ethical and responsible practices. The study further identified several challenges, including insufficient training and orientation, lack of mentorship opportunities, and reduced confidence driven by concerns about potential misuse or academic dishonesty. Lastly, the results served as the basis for recommending enhancements to the institution's existing AI policy to better support responsible and effective AI integration in academic settings.

Keywords: Artificial Intelligence (AI), Attitude, Challenges, Knowledge, Practices, Policy enhancement

INTRODUCTION

Background of the study

It was evident that the rapid advancement of Artificial Intelligence (AI) has immensely impacted global industries, including education and academic research. These AI tools served as assistants in writing a more coherent academic paper. It aided in academic writing, content generation, paraphrasing, referencing, and citing. Its role was evidence in improving the academic

DOI: 10.5281/zenodo.19425977

performance of every student that has utilized it which transcended barriers in critical thinking skills and academic skills.

Global circumstances in college settings and research institutes were incorporating AI into curricula and research processes to navigate the needs of students for the digital age. The study of Guarin et al. (2025), highlighted in contrast that the usage of AI presents difficult challenges about ethical standards, academic integrity, and students' capacity to utilize new tools responsibly and ethically.

The World Bank report from 2022 has stated that the Commission on Higher Education (CHED) in the country highlighted that the new curricula must include the use of technology and digital integration. It encouraged digital adaptation and evolution through reformation of policies and introduction of initiatives that promoted 21st-century capabilities. However, there remained an issue, that despite the increasing demand for the use of AI and its easier accessibility, there was a need for standardized guidance that can help govern AI's ethical usage in student research (Santos et al., 2025). With this, AI tools and applications used for research and academic works were made without proper guidance, which leads to possible academic breaches. These breaches include plagiarism, unreliable information, and overreliance on automated systems, which begun to emerge within academic institutions, highlighting the need for immediate institutional intervention.

Cagayan State University is a university committed to produce quality and credible academic and/or scholarly outputs. This is the reason why it has an approved board resolution – Resolution No. 39, Series of 2025. This resolution is a mandate that approved the guidelines set by the University on the institutionalization of Turnitin and AI checkers – the existing AI guidelines of the university which was driven with its rationale to promote academic integrity in all levels of the academic institution. The guidelines include the threshold of similarity index and AI content for any research manuscript facilitated by the campus Knowledge and Technology Management (KTM) Coordinator. Additionally, the approved guidelines contain the fees to be paid and the responsible persons for its implementation.

However, the guidelines need sustainability. It must include feedback loops for its continual development, accessibility for undergraduate students who lacks resources, and capacity building programs decentralized to colleges to be included under the students' research subjects, and development of code of ethics for research purposes. These recommendations would be beneficial to researchers, students, faculty, and to the university.

The use of artificial intelligence tools is rampant. The researcher has observed that students frequently use AI tools for academic tasks including writing, paraphrasing, and data analysis. The problem was, when AI tools were used it occurs in the absence of standard guidelines including orientation. With this, students may exhibit different levels of knowledge, attitudes, practices, and even challenges when utilizing AI, which can either improve or jeopardize the quality and integrity of research results.

This investigation presented that there was a significant gap in empirical study into how students use AI tools particularly in research works. Existing literature focuses mostly on technology adaptation, as well as the use of online learning tools, but investigations into the knowledge, attitude, practices, and challenges (KAPC) associated with AI use in research was only few. The lack of localized data can limit academic institutions' commitment to maximize AI in academic setting through capacity-building efforts that were relevant and responsive to student demands.

Furthermore, there lacks a study which examined the relationship between students' demographic profiles and their level of knowledge, attitude, practices, and challenges in the use of AI tools for research. There was also a need to determine whether the lack of knowledge, the presence of bias in attitudinal variable, or even the context of external challenges have a substantial influence on how the students use AI in research. Institutions that fail to address these identified risks can lead to exploiting AI's potential in academic research.

To fill these gaps, this study looked into the students' knowledge, attitudes, practices, and challenges while using artificial intelligence for research. It also intends to identify if there was statistical relationship on the level of knowledge, attitude, practices, and challenges with the ultimate goal of enhancing the existing policy recommendations that guide ethical and successful AI application in higher education settings. Additionally, this study had determined if there was a relationship the level of knowledge, attitude, practices when grouped according to the profile variables and technological variables. With this, challenges were focused on the practice-based issues and problems encountered by the respondents as well as ethical dilemmas and over-reliance concerns.

To better picture the significance of the proposed AI policy, the result of the comparison has shown that compared to the existing AI policy of the university, the proposed enhancement is developmental and governance-oriented. It extends its existence not just to serve as a detection tool, but it regulates AI tools into using it more ethical and more responsible. Additionally, the proposed policy enhancement establishes a more comprehensive and governance monitoring framework and it promotes AI-capacity building and institutional readiness. Lastly, it transitions from a compliance-based system to a governance-based system that integrates AI into academic researches and activities for the benefit of the institution, the faculty and staff, and the students.

This study's significant contributions would be measured through the comprehensive and data-driven findings that it provided which can be used as point of reference in enhancing the institutional policies, training initiatives, and awareness campaigns or orientations encouraging ethical AI integration in research. Finally, it helps to strengthen the university's commitment in producing quality output while having the ability to navigate technological innovation in maintaining academic standards, particularly in the context of Philippine higher education.

Statement of the Problem

Generally, the study sought to determine the knowledge, attitude, and challenges of students on the AI policy for research as basis for enhancement.

Specifically, it sought to answer the following:

1. What is the profile of the respondents in terms of:

   1.a. Socio-demographic

   1.b. Learners

2. What is the level of knowledge of the respondents in the use of AI in research in terms of the following:

DOI: 10.5281/zenodo.19425977

2.a. The Role of AI Tools in Academic Writing

2.b. The Effectiveness of AI Tools in Content Generation

2.c. The Significance of AI Tools in Paraphrasing

2.d. The Importance of AI Tools in Academic Reference and Citation

3. What is the attitude of the students in the use of AI in research along the following domains?

3.a. Students' Research Engagement

3.b. Students' Interaction

3.c. Behavioral Intentions

3.d. Students' Satisfaction

3.e. Improve Students' Research Performance

4. What are the practices of the students in the use of AI in research?
5. What are the challenges encountered by the students in the use of AI in research?
6. Is there a significant difference on the level of knowledge, attitude, and practices on the use of AI in research when grouped according to profile variables?
7. Is there a significant association on the level of knowledge on AI with that of the attitude and practices of respondents?
8. What enhancements can be proposed on the existing policy based on the findings of the study?

Hypothesis of the Study

This study has tested the following null hypotheses using 0.05 alpha level:

1. There is no significant difference on the level of knowledge, attitude, and practices on the use of AI in research when grouped according to profile variables.
2. There is no significant association on the level of knowledge on AI with that of the attitude and practices of respondents.

Significance of the Study

The results of the study is expected to provide actionable insights to the following:

Commission on Higher Education. The findings of the study would present the perceptions and experiences of the respondents on the use of AI in research, which in turn can help the CHED to further improve reformed policies that would help to capitalize the advances of AI while ensuring academic integrity and ethical soundness of research.

Cagayan State University. This study would benefit the Cagayan State University with recent and relevant data highlighting the respondents' knowledge, attitude, practices, and challenges, which can be used to evaluate the university's ongoing effort in the pursuit of digital advancements, ethical orientation, and academic regulation.

University Research Development Committee. The policy recommendation as an expected output of this study can be utilized and improved by the research development committee as basis for related technological training concerning AI use in research. Results can be used to introduce trainings and orientations to students on the ethical use of AI in research. The policy recommendation would serve as guidelines in the process.

Faculty Members. Findings of this study would help to create classroom interventions, lead students through ethical AI use, and include AI literacy into teaching and mentoring approaches.

Professional Organizations. Policy recommendation can be utilized by the professional organizations to establish similar grounds on the promotion of AI use in research.

Students. The study's findings would assist students to gain a better understanding of how AI is properly being utilized in research, as well as encourage responsible, ethical, and effective use.

Policy Makers. Institutional and academic policymakers can benefit from the findings of the study as it would serve as a point of reference in crafting similar interventions governing AI use in higher education.

Researcher. This study allowed the researcher to narrow the gap on the use of AI in research; though the use of the variables of knowledge, attitude, practices, and challenges, this study would help the researcher to provide empirical data that can be used as reference in crafting the enhanced AI policy of the university.

Future Researchers. Future researchers would benefit from this study as this current investigation presented a clear methodology and empirical baseline for evaluating AI use in academic settings, in which results can be used for comparative studies or in-depth qualitative inquiries.

METHODOLOGY

Research Design

The study employed a mixed method approach through the use of descriptive-correlational design and thematic analysis (Villanueva,, 2022). Descriptive design aimed to evaluate and examine the respondents' knowledge, attitude, practices, and challenges encountered in employing Artificial Intelligence (AI) tools for academic research. While, correlational design focused in determining significant difference and association among study's core variables - knowledge, attitude, practices, and challenges. It allowed the researcher to examine if there were statistical relationships between the variables. Additionally, thematic analysis was used to analyze the respondents' assessment on the challenges they have encountered.

Respondents and Sampling Techniques

The focus of this were students from Cagayan State University who were more likely to engage in undergraduate thesis projects, capstone projects, and other related academic projects that needs intensive data-gathering or research. The respondents were more likely 3rd year to 4th year students from the campus of Aparri and Lal-lo for the Academic Year 2025-2026. The students from different programs and levels were considered as eligible respondents because they undertake academic projects which might require the application of Artificial Intelligence (AI) tools for research purposes.

Research Instruments

DOI: 10.5281/zenodo.19425977

The study utilized structured questionnaire adopted and patterned from analyzing validated surveys from past research on the utilization of Artificial Intelligence in academic work.

The instrument consisted of five parts designed to cover the following areas:

The first part was the respondents' profile. This section aimed to gather the socio-demographic profile variables of sex, age, year level, course, program, average monthly income; and the technological variables of ownership of device and commonly accessed or used AI tools for academic research.

The second part focused on students' knowledge of AI tools along the domains of the role of AI tools in academic writing, the effectiveness of AI tools in content generation, the significance of AI tools in paraphrasing, and the importance of AI tools in academic reference and citation. This section was adopted from the study of Guarin et. al. (2023).

The third part of the questionnaire focused on the respondents' attitude as regards to the use of AI in research along the following domains of students' research engagement, students' interaction, behavioral intentions, students' satisfaction, and improve students' research performance. This section was adopted with modification to the study of Fosner (2024).

The fourth part analyzed the respondents' assessment on the practices of the students as regards to the use of AI in research. (Khairuddin et al., 2024).

Lastly, fifth part explored the challenges encountered by the respondent's use of AI in research. This section was adopted to the study of Shimray & Subaveerapandiyan (2025).

Data Gathering Procedure

Before proceeding to the data-gathering phase of the study, an ethics clearance from the Cagayan State University Ethics Committee has been obtained with reference code CSU-IERB-2025-10-252. This signified that study conformed to the ethical standards as mandated by the university. After this, a request was submitted to the Dean of the Graduate School and to the Campus Executive Officer (CEO) of Cagayan State University - Aparri Campus and Lal-lo Campus.

The collection of information was carried out through face-to-face (F2F) interactions on the campus' premises. Each respondent was provided with an informed consent document detailing along with the study's key objectives with the voluntary nature of participation alongside confidentiality and data protection assurance. Participants were given 10-15 minutes to answer the survey questionnaire. Only participants with signed informed consent was allowed to take part in data-gathering for this study.

Counter-validating the responses provided, the triangulation approach was utilized. The survey questionnaire was the most crucial component in determining the level of understanding, knowledge, attitude, practices and challenges students have regarding Artificial Intelligence. Additionally, qualitative information was obtained to further support the study.

All information obtained were treated with utmost confidentiality. Each questionnaire was given a code for identification purposes. The researcher employed ethical practices throughout the research, which ensured that participants can decline or withdraw at any stage without any consequence. Responses were only used for research purposes in order to ensure privacy and anonymity. The confidentiality of data collection was maintained by following study protocols, respondent freedom, and reliability in data collection and evaluation.

Data Analysis Plan

The collected data from the respondents was analyzed by employing both descriptive and inferential statistical methods, according to the level of measurement of each variable and in relation to the objectives and hypotheses of the research. Below is the detailed presentation of the data analysis plan in accordance to the statement of the problem of the study:

For study objectives 1 and 2, the data describing the respondents' profile was summarized using descriptive statistics including frequency count and percentage distribution.

For study objectives 3, 4, and 5, weighted mean was used in the application of AI in academic research which was evaluated with regard to the intervals of knowledge, attitude, and practices associated with AI using designated Likert-scale.

To interpret the level of knowledge of the respondents**,** the 4-point Likert Scale below would be used:

Numeral Rating	**Mean Range Score**	**Interpretation**
4 3	3.25-4.00 2.50-3.24	Highly Knowledgeable Knowledgeable
2	1.75-2.49	Slightly Knowledgeable
1	1.00-1.74	Not Knowledgeable

To interpret the attitude of the respondents towards research**,** the scale below was used:

Numeral Rating	**Mean Range Score**	**Interpretation**
5 4	4.20-5.00 3.40-4.19	Very Positive Positive
3	2.60-3.39	Neutral
2	1.80-2.59	Slightly Negative
1	1.00-1.79	Negative

To interpret the practices of the respondents towards research**,** the scale below was used:

Numeral Rating	**Mean Range Score**	**Interpretation**
5 4	4.20-5.00 3.40-4.19	Always Practiced Often Practiced
3	2.60-3.39	Sometimes Practiced
2	1.80-2.59	Rarely Practiced
1	1.00-1.79	Never Practiced

For study objective 6, frequency and percentage distribution was used to determine the current challenges of the respondents on the use of AI in research.

For free text responses, thematic analysis was used in the presentation of qualitative responses. This part has gathered the challenges of the respondents on the use of AI in research. Similar

DOI: 10.5281/zenodo.19425977

method was presented on the study of Alejandro et al., (2024) and Bećirović et al. (2025). The results were used into a triangulated matrix comparing data from the level of knowledge, data from the attitude of the respondents, and data from the practices of the respondents.

Lastly, study objectives 7 and 8, null hypotheses of the study were tested using inferential statistics to identify possible differences and associations among the different variables. Pearson r (correlation) was utilized to determine if there were any statistical association among the knowledge, attitudes, and practices; as well as if there was a significant difference among the KAP variables when grouped according to socio-demographic profile and technological profile; if found, post-hoc tests would be conducted.

RESULTS AND DISCUSSIONS

Socio-demographic Profile of the Respondents

Table 1.1 presents the socio-demographic profile of the respondents. Results show that in terms of sex, the number of female respondents (n=208) is higher than male respondents (n=146). In terms of age, the highest proportion of respondents belong to the 18–19 age group (n=225), with a mean of 21.61. The majority are third-year students (n=207), primarily enrolled under the College of Hospitality Management (n=101), specifically in the Bachelor of Science in Hospitality Management program (n=101). Although for sex, the number of female respondents are higher than that of male, it does not represent the generalizability of the whole population of the university. Moreover, majority of the respondents are third-year students enrolled in Aparri Campus and Lal-lo Campus of which demographically speaking, the Bachelor of Science in Hospitality Management is greater in number. Relative to the findings, the study of Reyes et al. (2023) has explored the differences in gender perception of Higher Education Institution contextualizing why courses such Hospitality Management is often dominated by female students because of its nature.

Table 1.1. Socio-Demographic Variables

Variable Name	Indicator	Frequency (n=354)	Percentage
Sex	Male	146	41
	Female	208	59
Age	18-19	225	64
	20-21	110	31
	22-23	15	4
	24 and Above	4	1
Mean Age			21.61
Year Level	3rd Year	207	58
	4th Year	147	42
College	College of Teacher Education	46	13
	College of Business Entrepreneurship and Accountancy	37	10
	College of Industrial Technology	32	9
	College of Criminal Justice Education	22	6
	College of Fisheries and Aquatic Sciences	17	5
	College of Information and Computing Sciences	85	24
	College of Hospitality Management	101	29
	College of Agriculture	14	4
Program	Bachelor of Science in Accounting Information System	37	10
	Bachelor of Science in Industrial Technology	32	9
	Bachelor of Science in Criminology	22	6
	Bachelor of Science in Fisheries	17	5
	Bachelor of Science in Information Technology	85	24
	Bachelor of Science in Hospitality Management	101	29
	Diploma in Agricultural Technology	14	4
	Bachelor of Science in Secondary Education	40	11
	Bachelor of Elementary Education	6	2
Average Monthly Income	P 10,000 and Below	325	91.81
	P 10,001 - P 20,000	19	5.37
	P 20,001 - P 30,000	6	1.69
	P 30,001 - P 40,000	3	0.85
	P 40,001 - P 50,000	1	0.28

Technological Characteristics of the Respondents

Table 1.2 presents the technological variables of the study. It can be observed that in terms of device ownership, the majority of the respondents (n = 343) use smartphones. Additionally, the top three (3) commonly accessed AI tools by the respondents are ChatGPT (n = 284), CiCi (n = 149), and Gemini AI (n = 85). These AI tools are predominantly utilized for academic learning, including research purposes which are all accessible through smartphone devices and are all user-friendly for easier access and navigation.

Moreover, most respondents (n = 277) are aware of the university's AI policy. This is very important to ensure that the respondents are aware of the ethical guidelines and implications using AI tools in their academic activities.

The results imply that the increasing use of AI tools in education reflects the acceptance of digital trends and the ongoing transition toward AI-integrated learning environments. This shift underscores the need for standard policies and guidelines to ensure responsible use and uphold academic integrity.

Supporting this, Arguson et al. (2024) investigated the acceptability of AI tools among tertiary students and found strong interest and willingness to adopt these tools for academic learning.

Table 1.2. Technological Characteristics of the Respondents

Variable Name	Indicator	Frequency (n=354)	Rank
*Ownership of Device	Smartphone	343	1
	Laptop	71	2
	Tablet	11	3
	Android Phone	4	4
	Desktop	1	5.5
	Printer	1	5.5
*Commonly Accessed AI Tools	ChatGPT	284	1
	Cici	149	2
	Gemini AI	85	3
	Google	61	4
	Meta AI	54	5
	Quillbot	46	6
	Grammarly	20	7
	Perplexity	12	8
	Canva	9	9
	Blackbox	7	10
	Co-Pilot	6	11
	Gauth Math	3	12
	Mid Journey	2	16
	Brainly	2	16
	Agnes AI	2	16

DOI: 10.5281/zenodo.19425977

	E-google Bard	2	16
	Galaxy AI	2	16
	Synthesia	2	16
	Gamma	2	16
	Deep AI	2	16
	Capcut	1	20
	Character AI	1	20
	Photo Math	1	20
	Humanizer	1	20
	Bing	1	20
	TiktokTako	1	20
	Mendely	1	20
Awareness on AI Policy of the University	Yes	277	78
	No	77	22

**Multiple responses*

Level of Knowledge in the use of AI in research

A. The Role of AI Tools in Academic Writing

Table 2.1 presents the respondents' level of knowledge regarding the role of AI tools in academic writing. The results show an overall weighted mean of 2.93, with a qualitative description of "Knowledgeable," indicating that the respondents possess adequate understanding of how AI tools support academic writing. Notably, the highest mean score is 3.03, which suggests that the AI tools used by the respondents have helped them to efficiently conduct literature reviews and find relevant support for their studies. Meanwhile, the lowest mean score is 2.87, which indicates that the AI tools used by the respondents were less likely to assist in formulating their research problem or in selecting reputable publications.

These results imply that the majority of the respondents understand the role of AI tools in conducting literature

reviews, which are essential components of any research study. This finding aligns with the AI policy of Cagayan State University, which mandates the use of Turnitin to check similarity index and AI-generated content in academic papers to ensure originality and research integrity.

The study of Elkhatat et al. (2023) explained that although academic institutions use AI-detection tools there is still a need for training, awareness, and human oversight. This is further strengthened by the response of respondent no. 213 which explained that *"I would appreciate AI workshops and lectures on how certain AI tools are used.*

Table 2.1. The Role of AI Tools in Academic Writing

Statements	**Weighted Mean**	**Descriptive Value**
1. AI tools have improved my efficiency in conducting literature reviews.	3.03	Knowledgeable
2. AI tools have improved the quality of my academic writing.	2.97	Knowledgeable
3. Using AI tools has expedited the process of data analysis in my research.	2.90	Knowledgeable
4. AI tools have increased the creativity in my research work.	2.92	Knowledgeable
5. AI tools have aided in identifying potential research gaps.	2.87	Knowledgeable
6. AI tools have assisted in identifying potential journals for publication.	2.87	Knowledgeable
7. Using AI tools has expanded the scope of my research ideas.	2.94	Knowledgeable
8. AI tools have increased my confidence in meeting publication requirements.	2.92	Knowledgeable
9. AI tools have contributed to improving the overall academic rigor of my work.	2.91	Knowledgeable
Overall weighted mean	**2.93**	**Knowledgeable**

B. The Effectiveness of AI Tools in Content Generation

Table 2.2 highlights the respondents' level of knowledge regarding the effectiveness of AI tools in content generation. The results show an overall weighted mean of 2.93, with a qualitative description of "Knowledgeable." Among the indicators, the highest mean score of 3.03, indicating that AI tools helps respondents refine how they present and write the research findings. Meanwhile, the lowest mean score of 2.86 refers to the use of AI tools in helping avoid plagiarism. This suggests that respondents recognize that one of the negative impacts of overreliance on AI tools is the potential risk of plagiarism.

This implies that the respondents use AI tools in research as it is easy to use and is accessible in brainstorming and idea generation. The AI policy of the university has included countermeasures to mitigate plagiarism and over-reliance to AI tools, the policy explicitly states that excessive AI dependency without proper attribution can lead to disciplinary actions.

This finding is further supported by the study of Yusuf et al. (2024) which examined both the benefits and risks of AI tools and revealed that academic institutions need to implement ethical guidelines and policies to manage the responsible use of AI tools. This is further strengthened by the response of respondent no. 199 which stated that *"I would benefit from proper training and guidance on how to use AI responsibly in research. clear school policies and access to reliable tools would help me understand how to use AI without risking plagiarism or misinformation. and support from teachers and online resources would also guide me in applying AI effectively while maintaining academic integrity.*

DOI: 10.5281/zenodo.19425977

Table 2.2. The Effectiveness of AI Tools in Content Generation

Statements	Weighted Mean	Descriptive Value
1. Using AI tools has increased the accuracy of my research findings in comparison to findings of other studies.	3.00	Knowledgeable
2. AI tools have helped in generating better research findings.	3.04	Knowledgeable
3. AI tools like ChatGPT have facilitated the identification of relevant research sources.	2.97	Knowledgeable
4. I find AI tools user-friendly and easy to navigate.	3.03	Knowledgeable
5. I trust the suggestions and recommendations provided by AI tools.	2.87	Knowledgeable
6. AI tools have facilitated the integration of diverse research perspectives.	2.90	Knowledgeable
7. AI tools have helped in avoiding plagiarism in my academic work.	2.86	Knowledgeable
8. I feel more confident in conducting statistical analyses with AI-powered tools.	2.88	Knowledgeable
9. AI tools have contributed to increasing the impact of my research.	2.88	Knowledgeable
10. I believe AI tools have simplified the process of formatting manuscripts.	2.89	Knowledgeable
11. AI tools have helped in generating insightful visual representations of data.	2.88	Knowledgeable
12. I believe AI tools have positively influenced my decision-making in research.	2.95	Knowledgeable
Overall weighted mean	**2.93**	**Knowledgeable**

C. The Significance of AI Tools in Paraphrasing

Table 2.3 presents the respondents' level of knowledge regarding the significance of AI tools in paraphrasing. The overall weighted mean for this dimension is 2.94, with a qualitative description of "Knowledgeable." The highest mean score is 3.09, which indicates that AI tools have enhanced the organization and structure of research papers. This suggests that respondents use AI tools to improve their academic writing style, which is essential in research writing. Meanwhile, the lowest mean score is 2.84, which refers to the improvement of the overall quality of the academic output. This implies that respondents value originality and understand that the final research paper must remain the researcher's original work, with AI tools serving only as supplementary support.

This result implies that the respondents primarily use AI tools to enhance their academic writing skills, as these tools helps to provide clarity of sentences and structure of paragraphs to coherently and comprehensively package a study. Relative to this, the AI policy of the university emphasizes that although AI tools have been integrated in the writing process, the paper should still maintain high originality and quality even after going through AI-detection checking.

The study of Mahmud and Saud (2024) further agreed that AI paraphrasing tools help improve vocabulary, provide clearer sentence structures without changing the original meaning. Respondent no. 1 explained that he or she was motivated to use AI tools due to the reason *"Correcting grammar and easy to generate explained presentation."*

Table 2.3. The Significance of AI Tools in Paraphrasing

Statements	Weighted Mean	Descriptive Value
1. AI tools like Grammarly and Quilbot have enhanced the organization and structure of my research papers.	3.09	Knowledgeable
2. I believe AI tools have positively impacted my research productivity.	2.90	Knowledgeable
3. AI tools have made collaboration with co-authors more efficient.	2.88	Knowledgeable
4. I feel AI tools have enhanced the overall quality of my research output.	2.84	Knowledgeable
5. AI tools have helped in paraphrasing and summarizing research content effectively.	3.00	Knowledgeable
6. AI tools have improved my ability to present complex data effectively.	2.89	Knowledgeable
7. I find AI tools helpful in suggesting relevant keywords for my research.	3.01	Knowledgeable
8. AI tools have increased the speed of initial draft creation in my research.	2.94	Knowledgeable
Overall weighted mean	**2.94**	**Knowledgeable**

D. The Importance of AI Tools in Academic Reference and Citation

Table 2.4 reveals the respondents' level of knowledge regarding the importance of AI tools in academic referencing and citation. This dimension obtained an overall weighted mean of 2.80, with a qualitative description of "Knowledgeable." The highest mean

DOI: 10.5281/zenodo.19425977

score of 2.84 indicates that respondents utilizes AI tools in citation and referencing. This suggests that respondents are aware of the university's ethical guidelines and use AI tools appropriately to avoid plagiarism through proper citation practices. Meanwhile, the lowest mean score of 2.76 states that there are AI tools (e.g. Mendeley and Zotero) in which the respondents are unfamiliar of. This limited exposure results in lower confidence in using these platforms compared with more widely recognized AI tools such as ChatGPT.

The results imply that respondents utilize AI tools to accurately cite studies that support the current investigation. This further indicates their awareness of the proper use of AI tools for content generation while ensuring adherence to ethical standards. In relation to this, the university's AI policy ensures that the research outputs are not flagged for excessive similarity or AI-generated content through the use of AI-detection tools such as Turnitin.

Respondent no. 17 agreed that *"I am motivated to use AI tools because they make research faster and more efficient, especially when summarizing articles or generating ideas."* Moreover, the study of Pellegrina and Helmy (2025) argues that one of the risks in using AI tools for referencing and citation is the potential production of inaccurate or fabricated information. Thus, human verification remains necessary to avoid plagiarism and ensure the accuracy and credibility of academic work.

Table 2.4. The Importance of AI Tools in Academic Reference and Citation

Statements	Weighted Mean	Descriptive Value
1. I feel more confident in citing sources accurately due to AI tools like Mendeley and Zotero.	2.76	Knowledgeable
2. I feel more confident in citing sources accurately due to AI tools.	2.84	Knowledgeable
3. AI tools like Zotero have helped in managing references and citations effectively.	2.79	Knowledgeable
Overall weighted mean	**2.80**	**Knowledgeable**

E. The Role of AI Tools in Grammar Correction

Table 2.5 presents the respondents' level of knowledge regarding the role of AI tools in grammar correction, with an overall weighted mean of 2.93 and a qualitative description of "Knowledgeable." It can be observed that the highest mean score is 3.02, which indicates that AI tools have improved the academic writing style of the respondents. This finding is consistent with the results from the variable practices, which revealed that AI tools are often used for grammar correction to improve writing skills.

Meanwhile, the lowest mean score is 2.86, which states that respondents also use AI tools for citation; however, the accuracy of generated citations does not always align with established citation guidelines. This finding suggests that human intervention remains essential to ensure proper formatting and adherence to academic standards.

The result implies that the respondents perceive significantly positive the use of AI tools in ensuring the coherence, clarity, and comprehensibility of academic papers such as research, minimizing the errors to better write research paper. Relative to the result, the AI policy of the university require certain thresholds to ensure the originality and quality of work, particularly that AI tools are integrated in academic writing and that training and orientation is also needed.

The study of Deep and Chen (2025) highlighted that the use of AI tools in academic writing has helped to improve grammar and logic flow by offering suggestions. However, it cannot always detect tone; hence, overreliance may lead to misleading feedbacks or suggestions. Respondent no. 48 further agreed that *"I am motivated to use AI tools because they help me save time, organize ideas, and improve my writing. However, I sometimes feel discouraged due to concerns about accuracy and the risk of becoming too dependent on AI."*

Table 2.5. The Role of AI Tools in Grammar Correction

Statements	Weighted Mean	Descriptive Value
1. AI tools like Grammarly Go have reduced errors in my academic writing.	3.02	Knowledgeable
2. AI tools have improved the clarity and coherence of my research papers using Grammarly Go	2.96	Knowledgeable
3. I believe AI tools have reduced the time required for proofreading and editing.	2.97	Knowledgeable
4. Using AI tools has improved the overall structure of my research manuscripts.	2.89	Knowledgeable
5. Using AI tools has improved the citation style consistency in my papers.	2.86	Knowledgeable
6. AI tools have helped in enhancing the readability of my research papers.	2.96	Knowledgeable
7. I trust the accuracy of grammar and spell check features in AI tools.	2.92	Knowledgeable
8. AI tools have facilitated better communication of my research findings.	2.88	Knowledgeable
Overall weighted mean	**2.93**	**Knowledgeable**

F. Summary of Level of Knowledge

Table 2.6 presents the summary of the respondents' level of knowledge. It can be observed that the categorical mean is 2.92, with a qualitative description of "Knowledgeable." The highest mean score has a weighted mean of 2.94, which indicates heightened knowledge on the importance of paraphrasing. This

DOI: 10.5281/zenodo.19425977

result indicates that respondents use AI tools to enhance sentence structure and improve paragraph organization, suggesting that paraphrasing functions as a key strategy to refine academic writing style. Conversely, the lowest mean score has a weighted mean of 2.80, which pertains to the importance of AI tools in academic referencing and citation. Compared to the other dimensions, this relatively lower result suggests that respondents are less confident in using AI tools for citation accuracy. This implies that training and orientation, as part of human intervention, are still necessary to ensure compliance with citation standards and to strengthen users' citation competencies.

The result implies that the respondents possess level of knowledge on the use of AI tools in research. The highest mean indicates that the respondents utilize AI tools for paraphrasing ensuring that the research paper is clear and coherent in manner. While the lowest mean indicates a need for further training and support to utilize AI better to mitigate plagiarized content. Overall, the results imply that in relation to the AI policy of the university using the different dimensions of the level of knowledge, albeit it is statistically high, there is still a need to reinforce guidelines on the use of AI tools in academic writing highlighting the need for constant human intervention and training to properly and ethically use AI tools in academic research.

The study of Ateeq et al. (2024) emphasizes the risks of AI tools when used in academic paper, it is the reason why there is a need for intensive training and policy oversight. This is further strengthened by the response of respondent no. 38 which stated that there is a need for *"Training on data privacy, plagiarism, and research ethics."*

Table 2.6. Summary of Level of Knowledge

Statements	Weighted Mean	Descriptive Value
1. The Role of AI Tools in Academic Writing	2.93	Knowledgeable
2. The Effectiveness of AI Tools in Content Generation	2.93	Knowledgeable
3. The Significance of AI Tools in Paraphrasing	2.94	Knowledgeable
4. The Importance of AI Tools in Academic Reference and Citation	2.80	Knowledgeable
5. The Role of AI Tools in Grammar Correction	2.93	Knowledgeable
Categorical mean	**2.92**	**Knowledgeable**

Attitude in the use of AI in research

A. Students' Research Engagement

Table 3.1 presents the respondents' attitudes toward AI tools under the dimension of students' research engagement, resulting in an overall weighted mean of 3.69, interpreted as "Positive." Among the indicators, the highest mean score is 3.71, which indicates that AI tools have increased the research engagement of the respondents. This suggests that AI tools have helped enhance the productivity and learning processes of the students.

Meanwhile the lowest mean score is 3.68, which pertains to the role of AI tools in increasing participation and interaction in research activities. Although this rating remains statistically high, it is comparatively lower than the other indicators, suggesting that AI tools alone may not be sufficient to motivate students to actively participate in or engage with research-related activities. Therefore, human guidance and intervention remain essential in fostering a strong research culture among students.

These findings indicate that respondents generally demonstrate a positive attitude toward the use of AI tools, recognizing their value in supporting academic and research-related activities. This positive perception suggests that AI tools contribute to increasing students' motivation, confidence, and engagement in research tasks. Moreover, the respondents' positive attitude aligns with the university's initiative to integrate AI into academic instruction, as long as usage remains ethical, transparent, and responsible. Familiarity with institutional AI guidelines appears to help students understand that such technologies are intended to enhance learning and not to replace original thought and authorship.

This finding is consistent with the study of Robinos et al. (2024), which examined both student and teacher attitudes toward AI in academic learning and writing, and similarly reported generally positive perceptions regarding the benefits and usefulness of AI tools in educational contexts. Relatively, respondent no. 53 stated that *"Encourages me to engage in research tasks includes the potential for enhancing productivity, such as quickly analyzing large datasets, generating ideas, or automating repetitive tasks like literature reviews."*

Table 3.1. Students' Research Engagement

Statements	Weighted Mean	Descriptive Value
1. Using AI tools-infused learning practices enhances my research engagement.	3.71	Positive
2. AI tools help me create learning experiences in research collaborations.	3.69	Positive
3. Using AI tools increases my active involvement in the research process.	3.69	Positive
4. Using AI tools increases my participation and interaction in research activities.	3.68	Positive
5. Students' Research Engagement	3.69	Positive
Overall weighted mean	**3.69**	**Positive**

B. Students' Interaction

Table 3.2 shows the respondents' attitudes toward AI tools under the dimension of students' interaction, which yielded an overall weighted mean of 3.65, interpreted as "Positive." Among the indicators, the highest mean score is 3.71, highlighting the respondents' overall positive interaction with AI tools. This suggests that the respondents demonstrate a favorable attitude when engaging with AI tools during academic tasks.

Meanwhile, the lowest mean score is 3.61, which pertains to the respondents' willingness to explore the benefits and full potential

DOI: 10.5281/zenodo.19425977

of AI tools. This indicates that their level of interest and attitude toward AI literacy is not as strong as reflected in other indicators. Therefore, integrating intensive training and comprehensive orientations in the classroom setting becomes essential to improve students' familiarity, confidence, and meaningful engagement with AI tools.

The results indicate that the respondents recognize the paramount contribution of AI tools in research-related activities implying that these tools help in promoting information exchange and research engagement. Although the results are statistically high, some respondents remain less willing to invest time and effort due to possibility of unfamiliarity on the use of AI tools. To address such gaps, the AI policy of the university requires mandatory training and orientation to students and faculty members to ensure proper use of AI tools enforcing ethical and responsible utilization.

The study of Mabborang et al. (2025) found that AI tools significantly enhanced student interaction and engagement. Respondent no. 150 agreed that *"The things that motivates me from using the AI tools is that I can widen my knowledge when it comes to research, I can learn things that I've never learned before, it can also help me to improve my research and guide me."*

Table 3.2. Students' Interaction

Statements	Weighted Mean	Descriptive Value
1. I agree that AI tools interaction can seamlessly handle questions related to research.	3.66	Positive
2. I am willing to interact with AI tools in the future to keep myself up to date on the latest trends of research.	3.63	Positive
3. I am willing to devote my time and efforts to exploring the benefits of AI tool interaction.	3.61	Positive
4. I feel comfortable getting information using AI tools. I feel free to ask questions while using AI tools.	3.66	Positive
5. Students' Interaction	3.71	Positive
Overall weighted mean	**3.65**	**Positive**

C. Behavioral Intentions

Table 3.3 presents the respondents' attitudes toward AI tools under the dimension of students' behavioral intentions, resulting in an overall weighted mean of 3.55, interpreted as "Positive." The highest mean score is 3.61, which indicates that the respondents utilize AI tools to propose solutions to existing problems and issues related to research. These concerns may include writing format, grammar, sentence structure, and paragraph organization, which are among the most common reasons respondents turn to AI tools.

Meanwhile, the lowest mean score of 3.50, which pertains to the respondents' intention to use AI frequently. This indicates that this low response, respondents are aware of the potential negative effects of overdependence on AI tools and exercise caution in their usage.

This result indicates that the respondents primarily utilize AI as a support in their research writing using the ability of the tool to provide coherent explanations and solutions to address problems related in research. This suggests that respondents intend to use AI tools as support in the rigorous academic writing process. This is the reason why the AI policy of the university includes structured use in research process by requiring AI-detection reports to ensure originality and quality of work.

One of the respondents also suggested that there is a need for *"Clear Institutional Policy and Guidelines"* This is further supported by the study of Funa and Gabay (2025) which highlighted the role of institutional policies and guidelines in integrating AI tools in academic processes and activities such as research.

Table 3.3. Behavioral Intentions

Statements	Weighted Mean	Descriptive Value
1. I will use AI tools to solve problems related to my research.	3.61	Positive
2. I plan to use the AI tools frequently.	3.50	Positive
3. I will recommend others to use AI tools for research and academic matters.	3.53	Positive
4. Behavioral Intentions	3.58	Positive
Overall weighted mean	**3.55**	**Positive**

D. Students' Satisfaction

Table 3.4 highlights the respondents' attitudes toward AI tools under the dimension of students' satisfaction,

which resulted in an overall weighted mean of 3.65, interpreted as "Positive." The highest mean score is 3.68, which indicates that the respondents are satisfied with how AI tools have positively influenced their research engagement.

Meanwhile, the lowest mean score is 3.62, which refers to the respondents' satisfaction to the results yielded by AI tools when used in research. Although still statistically high, this score is lower compared to the other indicators, suggesting that respondents are not fully confident or satisfied with AI-generated outputs due to the possibility of errors and associated risks.

The result implies that the respondents demonstrate a positive level of satisfaction on the use of AI in research. This suggests that the students perceive that AI tools significantly contribute to their research experience and satisfaction. Although the results are high, it can still be observed that there are areas where the respondents may feel less satisfied with outcomes of integrating AI tools in research. The AI policy of the university mandates orientation and training for students, faculty members, and researchers on the proper and ethical use of AI tools which contributes to students' positive experiences, as guidance reduces uncertainty and enhances confidence in using AI tools for research-related tasks.

Similar study conducted by Archana et al. (2025) revealed that the students who uses AI tools are aware that issues may arise due to accuracy issues and dependability in AI-generated content. Respondent no. 178 agreed that *" I sometimes feel discouraged due*

DOI: 10.5281/zenodo.19425977

to my limited knowledge and training on how to use AI responsibly. I also worry about issues like plagiarism, inaccuracy of information, and the fear that relying too much on AI might reduce originality in my work."

Table 3.4. Students' Satisfaction

Statements	Weighted Mean	Descriptive Value
1. Using AI tools positively influences my satisfaction with research engagement.	3.68	Positive
2. I am satisfied with the outcomes of using AI tools in my research.	3.62	Positive
3. The AI tool is effective for gathering and constructing data in research.	3.66	Positive
4. I am satisfied with using the AI tools as research tool.	3.62	Positive
5. Students' Satisfaction	3.68	Positive
Overall weighted mean	**3.65**	**Positive**

E. Improve Students' Research Performance

Table 3.5 highlights the respondents' attitudes toward AI tools under the dimension of improving students' research performance, resulting in an overall weighted mean of 3.69, interpreted as "Positive." Among the indicators, the highest mean score is 3.77 indicating that AI tools have enhanced the respondents' knowledge and information in research writing. This suggests that AI tools are advantageous, as it contribute to a better understanding of the research context.

Meanwhile, the lowest mean score is 3.64 pertaining to the positive influence of AI tools on overall research effectiveness. The respondents believe that AI tools alone cannot fully improve research performance and that guidance from mentors and other experts in the field remains essential.

The results imply that the respondents perceive a positive attitude regarding the use of AI tools in improving their research performance. The findings further suggest that AI tools are beneficial in enhancing the respondents' research skills thereby resulting to improved research performance. Relatively, the respondents understand the importance of AI tools in strengthening productivity, improving knowledge acquisition, and supporting performance in research-related activities. With the institutional policy at hand, the university ensures that with the integration of AI tools in academic setting, helps students to develop competencies to be used effectively.

This is further supported by the study of Buniel et al. (2025) which explained that students who utilize AI tools in research properly and responsibly have been reported to have higher research productivity and this productivity often leads to improvements in research skills and self-efficacy. This is further agreed by respondent no. 185 which highlighted that *"I am motivated to use AI tools in research because they can quickly analyze large datasets and identify patterns that would take me much longer to find on my own. This efficiency allows me to focus on the more creative and analytical aspects of research."*

Table 3.5. Improve Students' Research Performance

Statements	Weighted Mean	Descriptive Value
1. The use of AI tools contributes to an improvement in my research productivity.	3.67	Positive
2. I feel the AI tools help me improve my knowledge and information.	3.77	Positive
3. I feel the AI tool helps me improve my experience and performance.	3.69	Positive
4. AI tools have a positive influence on my overall research effectiveness.	3.64	Positive
5. Improve Students' Research Performance	3.67	Positive
Overall weighted mean	**3.69**	**Positive**

F. Summary of Attitude Towards the Use of AI in Research

Table 3.6 presents the summary of the respondents perceived attitudes toward the use of AI in research. The results show a categorical mean of 3.64, interpreted as "Positive." The highest mean score is 3.69 indicating that the respondents have a positive attitude toward students' research engagement and research performance. This suggests that the respondents believe AI tools can enhance these dimensions.

Meanwhile, the lowest mean score of 3.55, which pertains to the respondents' intentions in using AI tools in research. Although still statistically high, this score is lower compared to the other dimensions, indicating that respondents do not over-rely on AI tools and view them primarily as supportive instruments in their research-related activities.

The result implies that the respondents have an overall positive attitude towards the use of AI in research, suggesting positive feedback as well on the acceptance of the institutional policy of the university as regards to AI. Relatively, the results indicate that the respondents perceive AI as beneficial in their research engagements and activities increasing efficiency and effectiveness of research-related processes. Utilizing the institutional policy of the university, it reinforces the need for responsible and ethical use of AI tools highlighting the proper boundaries to mitigate errors and risks upon using.

The study of Obenza et al. (2024) found that university students exhibit high level of understanding and positive attitude towards the use of AI tools in higher education contexts. Relative to the findings, respondent no. 203 explained that *"I am motivated by the potential of AI tools to streamline research processes and uncover new insights."*

Table 3.6. Summary of Attitude Towards the Use of AI in Research

Statements	Weighted Mean	Descriptive Value
1. Students' Research Engagement	3.69	Positive

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2. Students' Interaction	3.65	Positive
3. Behavioral Intention	3.55	Positive
4. Students' Satisfaction	3.65	Positive
5. Students' Research Performance	3.69	Positive
Categorical mean	**3.64**	**Positive**

Practices Towards the Use of AI in Research

Table 4 shows that the respondents "Often Practice" the use of AI tools in research, as reflected in the overall weighted mean of 3.58. The highest-rated practice (WM = 3.80) is statement no. 14, which pertains to the use of AI for grammar correction. This indicates that respondents primarily use AI tools to enhance their academic writing skills.

Meanwhile, the lowest-rated item corresponds to statement no. 10, which refers to the use of AI tools for ethics and compliance monitoring. This suggests that students are aware of the potential negative impacts of overreliance on AI tools and recognize the importance of adhering to the university's ethical and standard guidelines in research.

These results imply that respondents frequently rely on AI tools for grammar correction to achieve clear and coherent academic writing. This further suggests that AI tools are primarily used to enhance clarity and improve the presentation of written information, resulting in more comprehensible data or findings. The respondents' practices also align with the university's policy emphasizing AI as a supplementary tool, ensuring that it does not replace the originality of student work.

This finding supports the study of Khalifa and Albadawy (2024), which revealed that students mainly use AI tools to assist with grammar, structure, citations, and compliance with academic standards. Their study confirms that AI is predominantly utilized to improve sentence construction and grammatical accuracy among students. This is further strengthened by respondent no. 144 which highlighted that *"AI helps me summarize articles and check grammar, which saves time."*

Table 4. Practices Towards the Use of AI in Research

Statements	**Weighted Mean**	**Descriptive Value**
1. Research paper writing and editing	3.55	Often Practiced
2. Literature review and synthesis	3.57	Often Practiced
3. Data analysis and visualization	3.49	Often Practiced
4. Statistical analysis	3.51	Often Practiced
5. Knowledge extraction and discovery	3.63	Often Practiced
6. Hypothesis generation and testing	3.58	Often Practiced
7. Data collection and management	3.54	Often Practiced
8. Survey design and analysis	3.58	Often Practiced
9. Experimental design	3.50	Often Practiced
10. Ethics and compliance monitoring	3.47	Often Practiced
11. Data cleaning	3.49	Often Practiced
12. Paraphrasing	3.77	Often Practiced
13. Referencing and citation	3.63	Often Practiced
14. Grammar correction	3.80	Often Practiced
15. Content generation	3.65	Often Practiced
Overall weighted mean	**3.58**	**Often Practiced**

Challenges Encountered Towards the Use of AI in Research

Table 5 presents the challenges encountered by the respondents in using AI tools in research. The highest-ranked challenge is statement no. 1, with 214 responses, which highlights concerns regarding the reliability and accuracy of AI tools. Concerns about reliability and accuracy as regard to the use of AI arises due to awareness of the respondents on the potential risks associated with using AI. This implies that the respondents utilize AI tools and are also aware of its negative implications brought by misuse and other related concerns.

Meanwhile, the lowest-ranked challenge is statement no. 9, with 84 responses, which pertains to resistance to change. This suggests that the respondents are generally open to integrating AI tools in research, provided they are used ethically and responsibly. This also implies that the respondents accepts the presence of AI and its use for researches and other academic-related activities.

The results imply that although respondents frequently use AI tools in their academic research, concerns regarding their reliability and accuracy remain. This further suggests that respondents are aware of the potential risks and limitations associated with AI tools. This is evident in platforms such as Turnitin, which has been reported as problematic following its recent update. Overreliance on AI tools may compromise accuracy, posing threats to the credibility of academic output. Aligned with these concerns, the university uses Turnitin to detect AI-generated content and determine similarity indexes. However, issues surrounding the reliability and credibility of such detection systems affect not only students but also academic institutions.

Thompson (2025) noted in his published report that after Turnitin's recent update, many users, including professionals, have raised concerns about its effectiveness as an AI detection tool. These issues have also gained widespread attention across various social media platforms. Respondent no. 187 further explained that issues include *"Fear of dishonesty and concern of reliability and accuracy."*

DOI: 10.5281/zenodo.19425977

Table 5. Challenges Encountered Towards the Use of AI in Research

Statements	Frequency	Rank
1. Concerns about reliability and accuracy	214	1
2. Concerns about data privacy and security	203	2
3. Lack of knowledge or skills	191	3
4. Limited support or documentation	152	4
5. Lack of Access to AI Tools	134	5
6. Ethical concerns	125	6
7. High cost of AI tools	119	7
8. Integration challenges with existing systems	112	8
9. Resistance to change	84	9

**Multiple Response*

Significant Difference on Knowledge when Grouped According to Profile

The results in Table 6 indicate that among the different profile variables, sex and awareness of the AI policy exhibit significant differences in respondents' knowledge when grouped according to profile. This suggests that these two variables play an influential role in how respondents utilize and understand AI tools in their academic activities.

The significant difference based on sex implies that sex-related factors such as confidence in using AI tools, level of understanding, and user preferences may contribute to variations in knowledge. Meanwhile, the significant difference associated with awareness of the AI policy underscores the importance of institutional guidelines in promoting ethical standards and responsible use. Respondents who are aware of the university's AI policy appear to possess greater knowledge and understanding, indicating that such policies support proper and ethical use of AI in academic tasks.

Similar finding was revealed by Generale et al. (2024) in which "female [respondents] scored slightly higher in AI ethics, while male students displayed greater confidence in AI application." In summary, the result highlights the importance of intensive training for the students regardless of sex to reinforce the proper use of AI tools to increase AI literacy and skills. Respondent no. 199 further agreed that *"I would benefit from proper training and guidance on how to use AI responsibly in research. clear school policies and access to reliable tools would help me understand how to use AI without risking plagiarism or misinformation. and support from teachers and online resources would also guide me in applying AI effectively while maintaining academic integrity."*

Table 6. Significant Difference on Knowledge when Grouped According to Profile

Grouping Variable	F or t-value	p-value	Statistical Inference
Sex	3.484	0.001	**Significant**
Age	1.195	0.312	Not Significant
Year Level	-1.301	0.194	Not Significant
College	.878	0.524	Not Significant
Program	1.723	0.092	Not Significant
Average Monthly Income	.367	0.832	Not Significant
Number of Owned Devices	1.356	0.256	Not Significant
Commonly Accessed Tool	.087	0.986	Not Significant
Campus	.971	0.333	Not Significant
Awareness on AI Policy	4.279	0.000**	**Significant**

*** - Significant*

Significant Difference on Attitude when Grouped According to Profile

Table 7 indicates that among the different profile variables, only awareness of the AI policy shows a significant difference in respondents' attitudes when grouped according to profile. This suggests that respondents who are aware of the university's AI policy tend to demonstrate a more positive attitude toward the use of AI tools. Their acceptance of AI also reflects a willingness to follow the ethical guidelines set by the institution.

Awareness plays a key role in shaping respondents' perceptions of the usefulness of AI tools in academic tasks by providing clear guidelines that enhance confidence and reduce risks. This finding further implies that academic institutions, such as Cagayan State University, should implement thorough and comprehensive orientations and training sessions for both faculty members and students, integrating these discussions into classroom activities. Additionally, ensuring that AI policy materials are readily accessible at all times can help cultivate more positive student attitudes toward AI, ultimately supporting its proper and ethical use.

The study of Sova et al. (2024) further supports this finding, revealing that formal training in the use of AI tools enhances students' knowledge and understanding, which in turn leads to a more positive attitude and perception toward AI. Respondent no. 203 further strengthened this finding by stating that *"I need comprehensive training programs that focus on the ethical use of AI in research, along with access to reliable AI tools and resources that ensure academic integrity."*

Table 7. Significant Difference on Attitude when Grouped According to Profile

Grouping Variable	F or t-value	p-value	Statistical Inference
Sex	1.679	0.094	Not Significant

DOI: 10.5281/zenodo.19425977

Age	.940	0.421	Not Significant
Year Level	.001	0.979	Not Significant
College	.869	0.531	Not Significant
Program	1.192	0.303	Not Significant
Average Monthly Income	.284	0.888	Not Significant
Number of Owned Devices	1.917	0.126	Not Significant
Commonly Accessed Tool	.409	0.802	Not Significant
Campus	-.685	0.494	Not Significant
Awareness on AI Policy	2.794	0.006**	**Significant**

** - *Significant*

Significant Difference on Practices when Grouped According to Profile

Table 8 shows that among the different profile variables, only awareness of the AI policy shows a significant difference in respondents' practices when grouped according to profile. This result implies that respondents who are informed about the AI policy of the university tend to demonstrates ethical and responsible, ethical, and proper use of AI tools in academic activities such as research. Policy awareness serves as a tool to guide students in understanding proper usage and ethical considerations when engaging with AI tools. Relatively, this finding highlights the paramount effects of strengthening the AI policy of academic institutions to improve the right practices of students in using AI tools more ethically, effectively, and in alignment with institutional standards.

Relative to the findings, respondent no. 204 highlighted that *"Clear institutional policies, mandatory training focused on fact-checking and verification, and task-specific workshops on effective prompting for low-risk tasks would help me use AI responsibly for research."* Alnsour et al. (2025) support this finding by arguing that when institutions lack sufficient AI policy awareness, students are less likely to consistently practice the ethical use of AI tools.

Table 8. Significant Difference on Practices when Grouped According to Profile

Grouping Variable	**F or t-value**	**p-value**	**Statistical Inference**
Sex	3.232	0.073	Not Significant
Age	1.781	0.150	Not Significant
Year Level	-.026	0.123	Not Significant
College	1.024	0.414	Not Significant
Program	1.140	0.335	Not Significant
Average Monthly Income	1.140	0.335	Not Significant
Number of Owned Devices	1.366	0.253	Not Significant
Commonly Accessed Tool	.896	0.466	Not Significant
Campus	-1.325	0.187	Not Significant
Awareness on AI Policy	2.794	0.006**	**Significant**

** - *Significant*

Significant Relationship between Knowledge and their Attitude and Practices

Table 9 presents the association – the significant relationship between knowledge and to the attitude and practices of the respondents. It can be observed that the association of the said variables resulted to be highly significant.

The strong correlation with attitude (r = .824, p = .000) suggests that respondents who possess knowledge on the use of AI tools demonstrates a more positive attitude resulting o a more proper, ethical, and responsible use of AI tools in academic activities such as research. This suggests that enhancing the knowledge of respondents through intensive training and thorough orientation can improve their understanding of the ethical guidelines that govern AI use.

Similarly, the significant relationship between knowledge and practices (r = .756, p = .000) implies that respondents who are more knowledgeable about AI tend to exhibit ethical and responsible practices of AI tools in academic activities. These practices include grammar correction and even referencing and citation which improves the academic writing skills of the respondents. This finding underscores the importance of fostering AI literacy as a foundation not only for awareness but also for translating knowledge into responsible and practical application in research settings.

Similar study was conducted by Kharroubi et al. (2024) using also the knowledge, attitude, and practices as primary variables which revealed that there is a significant association between knowledge level and attitude toward AI among university students. Their study also supports the integration of AI tools in academic learning and teaching provided that these tools are grounded with ethical and responsible use during the process. Respondent no. 343 also highlighted that *"Ethical Guidelines: Protocols for responsible AI use."*

Table 9. Significant Relationship between Knowledge and their Attitude and Practices

Grouping Variable	**F or t-value**	**p-value**	**Statistical Inference**
Overall Attitude	.824**	0.000	**Significant**
Practices	.756**	0.000	**Significant**

** - *Significant*

Thematic Analyses

DOI: 10.5281/zenodo.19425977

A. Thematic Analysis of Motivators and Discouragers in Using AI Tools

Table 10.1 presents the thematic analysis of the motivators and discouragers in using AI tools as highlighted by the respondents. The recurring themes include the practical usefulness and efficiency of AI tools, concerns about misuse and credibility loss, and factors related to competency and confidence. Respondents consistently described AI tools as time-saving resources that enhance efficiency. These tools are seen as beneficial for researchers because they can simplify complex and dense information, making it more understandable. In support to this finding, Chan and Hu (2023) explored the perceptions of students on generative AI and later on revealed that students recognized the potential and benefits of AI tools in academic writing, personalized learning support, analysis, and assistance in research writing.

In contrast, respondents also expressed their hesitation in using AI tools due to the potential negative effects of overreliance, such as producing outputs that may be considered plagiarized. Another concern is the lack of proper training needed to use AI tools ethically, responsibly, and confidently, which ultimately affects the respondents' competency in employing AI tools in research. Morrone (2024) revealed in her blog post that there has been a rising case of plagiarism due to misuse of AI tools which presents a risk to academic integrity.

Table 10.1 Thematic Analysis of Motivators and Discouragers in Using AI Tools

Theme	Description	Responses from the Respondents
1. Practical usefulness and efficiency (Motivator)	AI tools have supported academic writing by enhancing grammar accuracy, improving sentence structure, refining paraphrasing, and assisting in the overall organization of ideas.	Respondent No. 5: "Honestly, what motivates me to use AI tools in research is the potential to save time and get some helpful insights." Respondent No. 17: "I am motivated to use AI tools because they make research faster and more efficient, especially when summarizing articles or generating ideas." Respondent No. 55: "Encourages me to engage in research tasks includes the potential for enhancing productivity, such as quickly analyzing large datasets, generating ideas, or automating repetitive tasks like literature reviews."
2. Fear of misuse and credibility loss (Discouragers)	Ethical concerns, dishonesty, overreliance, plagiarism, and lack of training discourage use of AI tools	Respondent No. 5: "On the flip side, I'm discouraged by the fear of getting inaccurate info or relying too much on tech, which can make me feel like I'm losing control over my own work." Respondent No. 17: "However, I sometimes feel discouraged due to lack of proper training on how to use them responsibly and the fear of being accused of dishonesty or plagiarism." Respondent No. 60: "Lack of training, ethical concerns, and fear of inaccuracy or dishonesty can discourage their use."
3. Competency and confidence factors	Knowledgeable users encourage ethical use due to its efficiency, but lack of confidence and training discourages users to explore and utilize AI tools	Respondent No. 60: "I am motivated to use AI tools because they make research work faster and more efficient, especially in summarizing articles, generating ideas, and improving writing quality. However, I sometimes feel discouraged due to a lack of proper training on how to use them responsibly and the fear of being accused of academic dishonesty or plagiarism. I also worry that depending too much on AI might limit my critical thinking skills." Respondent No. 144: "I also feel unsure when I don't fully understand how to use some AI features properly."

Thematic Analysis of Specific Difficulties Experienced When Using AI

Table 10.2 presents the thematic analysis of the specific difficulties encountered by respondents when using AI tools. The recurring themes include challenges in interpreting AI-generated results, technical or methodological limitations, and issues related to inconsistency and lack of nuance. Respondents frequently emphasized that AI-generated citations and references, particularly when reviewing related literature are often inaccurate and do not adequately support their current investigation. Yousaf (2025) revealed that there are cases where citations and references are fabricated which also includes fictitious sources that erodes academic integrity.

Another difficulty identified is the methodological limitation of AI tools, as the designs and approaches they provide are not tailored to the specific study and tend to consist of generalized information. Finally, respondents noted that AI tools often produce inconsistent outputs and lack the ability to capture subtle nuances in writing, which affects the clarity and accuracy of their work. Amirjalili et al. (2024) stated that AI tools can lead to the use of general results which lacks to address nuanced or complex academic contexts resulting to lack of in-depth analysis and discussion.

Table 10.2 Thematic Analysis of Specific Difficulties Experienced When Using AI

DOI: 10.5281/zenodo.19425977

Theme	Description	Responses from the Respondents
1. Interpreting AI-generated results	Difficulty on accurate and proper citation of literature and references as well as synthesis.	Respondent no. 17: "I experienced difficulty using AI when writing the review of related literature (RRLS) because the generated sources were sometimes outdated or not properly cited. In the methodology section, I found it challenging to make AI outputs align with actual research procedures. During the results and discussion phase, it was hard to interpret data accurately using AI without understanding statistical tools myself." Respondent no. 32: "AI can synthesize existing information effectively, but it often lacks the ability to identify critical gaps in the literature or propose innovative research directions that require deeper understanding and critical thinking." Respondent no. 48: "I experienced difficulty using AI in writing the Review of Related Literature since some results were not reliable or properly cited."
2. Technical or Methodological Limitations	Difficulty on coding, methods writing, or technical tasks.	Respondent no. 13: "Methodology: challenge in validating the ai approach and ensuring it aligns." Respondent no. 38: "Methodology: AI gave generic suggestions not tailored to the research type or ethical considerations." Respondent no. 48: "It was also challenging to use AI in the methodology part because it gave only general suggestions that did not fit my topic."
3. Inconsistency & Lack of Nuance	AI responses can also result to missing context or nuance needed in research writing	Respondent no. 5: "I struggled to get AI to understand the nuances of my research, especially when trying to craft a compelling intro and interpreting complex results, where human judgment and expertise really matter." Respondent no. 203: "I experienced difficulty using AI in the results and discussions section, as the AI-generated interpretations sometimes lacked the nuance and critical thinking required for drawing meaningful conclusion." Respondent 270: "I experienced difficulty using AI when it gave inaccurate information, misinterpreted questions, and provided fake sources or unclear explanations of complex topics."

Thematic Analysis of Needed Support, Training, and Resources

Table 10.3 presents the thematic analysis of the respondents' needed support, training, and resources. The recurring themes include intensive training, workshops and orientations, the provision of standard guidelines and accessible sources, and the enhancement of the university's AI policy along with mentorship programs. Respondents consistently emphasized the need for comprehensive and intensive training. Such training should be implemented at the micro level facilitated by faculty members, RDE personnel, or field experts to ensure the ethical and responsible use of AI tools in research. Chan (2023) highlighted that educational institutions should implement an ecological AI policy that governs pedagogy, governance, and operations. This study has addressed the multifaceted implications of AI integration in university teaching and learning.

They also highlighted the importance of disseminating standard guidelines, even at the classroom level, to strengthen students' awareness and understanding of AI-related policies. Additionally, the development of accessible sources or reading materials was recommended to provide easier access to accurate information. Lastly, respondents recognized the need to further enhance the university's AI policy to better address their concerns and feedback. Llerena-Izquierdo and Ayala-Carabajo (2025) explained that the use of AI policy must be accompanied with supervision, evaluation, and mentorship to ensure that AI tools are used ethically and responsibly maximizing its benefits and mitigating its risks.

Table 10.3 Thematic Analysis of Needed Support, Training, and Resources

Theme	Description	Responses from the Respondents
1. Intensive training, workshops, and orientation	Implement training, workshops, and orientation as well as integration to classroom discussions.	Respondent no. 14: "Having proper training or seminars about the correct use of AI in research would help me, especially in terms of data privacy and avoiding plagiarism." Respondent 27: "Support and resources that help in the responsible use of AI for research include clear guidelines, training on AI literacy and ethics, and tools

DOI: 10.5281/zenodo.19425977

		for evaluating AI systems." Respondent 41: "Training and seminar on how to deepen the knowledge in using AI tools for research."
2. Standard guidelines and accessible sources	Use accessible sources to promote guidelines on the use of AI tools.	Respondent no. 5: "Training, guidance, and reliable resources would boost AI research confidence." Respondent 45: "I need guidelines that explain the ethical standards for using AI in research, including privacy, bias, and transparency." Respondent 48: "I think it would help to have workshops or short training sessions on how to use AI properly for research. Clear guidelines from the university about ethical use and proper citation of AI-generated content would also be very useful." Respondent no. 71: "online tutorials or resource materials about AI ethics, citation, and data privacy would guide me in using AI responsibly and effectively."
3. AI policy of the University and mentorship programs	Implement AI policy that is centered on ethical guidelines of AI tools including mentorship programs, supervisor guidance, and peer support.	Respondent no. 15: "Support for using AI responsibly in research includes clear institutional guidelines, training on AI literacy and ethics, and access to resources like evaluative frameworks and practical guides" Respondent n0. 38: "Mentorship from trained faculty." Respondent no. 55: "Access to reliable AI platforms and mentorship from experts would also support responsible use." Respondent no. 71: "I think having mentorship or support from instructors who can explain the limitations of AI and how to cross-check its outputs would make me more confident in using it."

CONCLUSION

Based on the results of the study using the variables of knowledge, attitude, practices, and challenges, the relationship between the variables were established and findings revealed that respondents with higher levels of knowledge about AI tools tend to exhibit more positive attitudes toward their use in research. This knowledge possessed by the respondents also indicates better practices on the use of AI tools in research that ensures ethical and responsible use. With this, increased understanding on the use of AI tools can ensure that the respondents are aware of ethical practices. This establishes a relationship among the variables of knowledge, attitude, and practices on how they are connected revealing that a higher level of knowledge constitutes to a more positive use of AI tools and to more ethical and responsible practice. On the other hand, findings revealed that challenges often encountered by the respondents include limited training, uncertainty of use, and lack of clear institutional guidelines on use of AI in research.

Lastly, there is a need to enhance the existing AI policy of the university to address the concerns and feedbacks of the respondents and to increase their knowledge and understanding on the use of AI tools in research.

RECOMMENDATIONS

The following recommendations are hereby recommended to:

1. Cagayan State University should enhance its existing AI policy to address the concerns and feedbacks of students regarding the use of AI in research. Additionally, CSU should institutionalize regular capacity building programs for research coordinators and faculty members to keep abreast of the updates of AI tools used and accepted in the institution to increase the knowledge of the users gearing towards ethical use of AI.
2. The University Research and Development, Extension and Training Council (URDETC) should conduct mentorship programs to faculty members to foster research engagements and should develop a matrix to evaluate the improvement of the students in using AI tools for research. This should also promote positive attitude towards the use of ethical AI in research and academic-related activities.
3. The Faculty Members should integrate and develop activities in classroom or micro level to intensively train and orient students on the proper use of AI tools in research to promote academic integrity. This intervention would ensure ethical practices on the use of AI when integrated on classroom-based discussions and would also mitigate risks of challenges.
4. The future researchers should conduct parallel study in determining the effectiveness and sustainability of the proposed AI policy, deeply grounded with the findings of this study. This should include the assessment of the future researchers to the academic outputs of the students after intensive trainings and workshops.

Declaration of no conflict of interest

The author hereby declares that this article is her original work and that there was no conflict of interest.

DOI: 10.5281/zenodo.19425977

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DOI: 10.5281/zenodo.19425977