

AI in Research Writing: From an Academic Perspective of a State College in Bicol Region, Philippines

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Abstract

Rapid advancement in technology has significantly influenced academic research through Artificial Intelligence (AI). However, hesitation to accept and use its maximum potential remains a challenge especially in an academic perspective. Thus, the present study examined how faculty members of a State College in Bicol Region, Philippines accepted and utilize AI writing tools. A descriptive-correlational research design following the UTAUT framework assessed data from 62 faculty members. Findings revealed that 95% of respondents were familiar with AI writing tools but are confined to a limited tool such as Grammarly and Quillbot. Furthermore, acceptance is at 4.81 equivalent to somewhat acceptable consolidated from performance expectancy, effort expectancy, and social influence. Meanwhile, a mean score of 4.20 and 4.57 indicating neutral opinion for facilitating conditions and attitudes towards use of AI was noted. With this, strengthening policies, awareness campaigns and infrastructure improvements shows promising strategies harness the advantage of AI in research.

Keywords: Academic Integrity, Digital Literacy, Generative AI, Higher Education, Technology Acceptance

Introduction

Technological advancements had already redefined the limits of human potential and capacity in the current era. Relatively, Artificial Intelligence (AI) as an emerging and transformative technological force has driven various fields to move forward. AI had been a revolutionary factor in research writing that offers enhancement in efficiency, accuracy, creativity, and access to wide range of data. Tools had assisted researchers to generate ideas, fine tuning the writing process, organize data, and making repetitive and complex tasks more doable. Such features had significantly streamlined the way research writing has been for most researchers. From doing simple paraphrasing and grammar-checking, to predictive writing assistance. No doubt, AI had been an empowering tool for most scholars from turning ideas and concepts to intellectual contributions to the body of knowledge (Tabiolo et al, 2024).

In most academic institutions around the world, AI had developed a remarkable reputation among students, faculty members, and researchers as it also increases their reliance to these tools in terms of academic and technical writing. Universities around the globe, recognizing the potential of AI to improve the quality of works and increase the number of research outputs, have embraced AI platforms and tools such as Grammarly, Turnitin, and ChatGPT to aid the need of their clienteles to streamline and improve the research outputs and teaching practices. In education, AI had penetrated various aspects of educational delivery through personalized learning systems, predictive analytics, and intelligent tutoring similar to what Zawacki-Richter et al. (2019) had noted in their study which further allows to cater diverse learners and their specific needs, making education accessible and inclusive for everyone.

Moreover, AI tools including Grammarly and Quillbot are just a few of the tools that had been greatly instrumental in improving the language proficiency, clarity, and coherence in written outputs of researchers. The tools are not only offering improvement to the quality of work but also allows non-native English speakers opportunity to learn by offering suggestive tips for grammar, style, and tone that are important in

technically written output (Sol & Heng, 2024). Similarly, these tools allow developing countries such as the Philippines to have access to global knowledge to compensate the limited resources and infrastructures of academic institutions as noted by Nierkerk, Delpont, and Sutherland (2025).

Finally, AI for plagiarism detection and assessment had already been widely used by faculty and research integrity committees in universities. Several tools such as Turnitin proved to be indispensable platforms to maintain the integrity of scholarly works through similarity detection to existing literatures and ensuring originality of works. Moreover, more universities are leveraging the use of such AI tools to refine methods and improve research outputs to foster a culture of innovation and intellectual progression (Ocen et al., 2025).

However, there are still skepticism despite the paramount advantage of using AI tools in academic writing. This boils down to issues and apprehensions in the use of AI tools. Among the primary concerns is the lack of sufficient technological know-how among educators, scholars, and researchers especially in developing countries. According to Labrague et al. (2023) in their study to explore the factors that influences nursing students to adopt AI in tehri studies as well as barriers to access technology, a low to moderate level of readiness among nursing students in the Philippines was observed which was generally attributed to limited ICT infrastructure in the country to explore the potential of available AI tools. Likewise, there are perceived difficulties identified in the use of AI tools resulting to moderate acceptance of such. This was attributed to insufficient, if not lacking, of information dissemination as to what AI tools can be used and how to positively use it in their line of work. In addition, ethical concerns are also among the issues of scholars and academicians when it comes to using AI tools. Issues on data privacy, intellectual property rights and misuse of AI-generated contents were among the questions in responsible use of identified technological advancements. In the study of Asirit & Hua (2024), there were expressions of hesitancy and mistrust with AI use among diverse participants of their study due to several factors including that of potential

ethical violations. These clearly points out the need for critical guidelines and policies that can balance the need for transformative research writing process while maintaining the responsible and ethical use of AI tools to generate quality research outputs without questionable integrity.

Finally, it was also noted that AI tools may somehow replace creativity and originality of humans as there are already AI tools that offers to create technical reports with just a few prompts. Critiques had already argued that the quality of output may in turn homogenized and the critical thinking among researchers diminished due to over-reliance to these tools. With such concern, there is also a need to establish the role of AI tools as a support system rather than a replacement on what human intellect can do when it comes to creativity and originality.

Relating the information gathered to the locale, there is a limited information as to the institutional perception, specifically among the faculty members, as to the actual perceived acceptance and utilization of AI in research writing despite its prevalence among the students. There is also limited information as to the faculty's perception on the usage and ethical considerations for AI to be fully integrated in research writing. These concerns, if left unresolved, may result in hindering the academic population in harnessing the full potential of AI integration. With resistance to AI tools as a support platform for research writing, the gap between institutions who are already a game changer and those who are still working its way to streamline with innovation, becomes wider. Scholars, researchers, and academicians alike miss out opportunities to improve outputs and fail to be globally competitive in terms of standards and excellence. This kind of technological divide in research further expands the scope of inequalities when it comes to knowledge and technological resources, especially among developing countries.

Thus, understanding the level of acceptance and potential utilization of AI tools among key individuals in academic institutions, especially in rural areas, are critical factors to understand the behavior of everyone as policies and practices are crafted to support effective and productive integration of AI tools in the process. Similarly, by understanding the hesitations and their insights as to how can AI tools be

integrated, institutions can cultivate a culture that encourages responsible and positive use of AI in research writing.

Materials and Methods

Research Design

The study employed the use of a descriptive correlational research design to describe the data collected from the parameters in the objectives of the study and establish relationships with factors identified. The appropriateness of such design to the present study was lifted from the works of Ma and Zhao (2025) which further mentions that the appropriateness of descriptive correlational research design is relevant especially if data collected are based on behavior or attitudes of the participants. Furthermore, the parameters measured in this study were adopted from the Unified Theory of Acceptance and Use of Technology Model by Venkatesh et al. (2003) which was cited from the works of Tariq, Maryam, & Shaheen, (2024). As cited from Marikyan & Papagiannidis (2024), this model fits to examine the acceptance of a certain technology through the determination of several factors including performance expectancy, effort expectancy, social influence, facilitating conditions, and attitude in the use of technology.

Research Instrument

A questionnaire deployed using an online survey form was duly adopted from the works of Lescevia, Ginters, and Mazza (2013). The questions had undergone reliability using Cronbach's Alpha reliability test and Spearman-Brown prediction formula. A total of nineteen (19) questions from the original works were slightly modified to fit the needs of the current study. The constructs for Performance Expectancy, Effort Expectancy, Social Influences, Facilitating Conditions, and Attitude towards Technology, the Cronbach's Alpha value among the constructs shows a $\alpha = 0.70$ showing good reliability value. Additionally, the

Spearman-Brown Prophecy values reaching 1.0 also shows good reliability. Therefore, assuring that the constructs used for the instrument have good internal consistency.

Respondents

The respondents of the study were faculty members from two delivery units of a public state college in Bicol Region, Philippines. Using total numeration, data were collected from the employed faculty at the College of Business and Public Administration and the College of Trades and Technology. Thus, the demographics of the respondents as noted in Table 2 shows a total of 62 respondents from the two identified delivery units. Those respondents were further described based on different demographic profiles such as Age, Sex, Academic Rank, Years in Service and the Delivery Unit they are affiliated in. These demographics are crucial in the determining the level of acceptance as well as the utilization of faculty members in the use of AI writing tools for research writing.

Data Gathering and Analysis Procedures

The survey questionnaire was distributed to the target respondents through sending the link via individual FB Messenger accounts or official email addresses. The questionnaire was attached with an informed consent form to secure approval. The retrieved data shows that 100% of the respondents agreed to partake in the said survey. After the respondents completed and submit the response, the data were tabulated in a web-based spreadsheet for initial data cleaning including removal of unnecessary characters and from subjective responses.

The data were then subjected to relevant statistical treatment including frequency distribution to summarize the respondents' demographic characteristics. Additionally, weighted mean was used to collect the perceptions of the respondents along the different constructs of the study which was further interpreted to the perceived acceptance and perceived utilization. Spearman's Correlation Coefficient was also used

to the determine the strength and direction of relationship between the variables while Ranking method was used determine the apprehensions and concerns of the respondents in terms of using AI writing tools. Finally, aside from use of relevant graphs and visual representations, word cloud was used to also used to consolidate key concept from the comments collected.

Ethical Considerations and Protocols

To ensure anonymity per Data Privacy Act of 2012 and compliance to ethical guidelines for social and behavioral research as provided by the National Ethical Guidelines on Health Research 2006, the following were be observed:

1. All respondents of the study were given and asked to accomplish an informed consent form to ensure that there was no coercion in any form to force information from respondents;
2. A privacy and confidentiality clause were included in the consent form to ensure compliance on Data Privacy Act of 2012;
3. Information as the purpose of the study were also included in the consent form before the respondents accomplish the questionnaire; and
4. The researcher ensured that deception in any form was not tolerated and a provision as to contact the respondent for validation was also included. Additionally, in cases that the respondents sought for a copy of the information generated from their respective accomplished survey questionnaire, the researchers with the guidance of the Office of the Vice President for Research and Extension and Research Services Division, provided such information through their active official email address.

Results and Discussion

Awareness on AI writing tools for various purposes.

The rapid recognition of the use of AI writing tools for various purposes including that in the academic areas are already growing along with the advancement of technology and cutting-edge practices. This was already noted in several studies had already concluded that the popularity of such technology were increasingly noticeable among students to who used such writing tools as an assistive platform in their various academic works especially in English writing (Ducasse, Ferrero, & Mateo-Girona, 2023; Furze, Perkins, Roe, & MacVaugh, 2024)

Similarly, educators also see the potential benefits of using AI tools. Along with offering customized feedback and support system for learning assessment and evaluation of students, AI tools also assists in developing proficiency in writing as these assistive tools offers advanced algorithms to be able to identify common grammar mistakes in punctuation and syntax that serves as basis for suggestive texts to improve clarity and style (Marzuki, Widiati, Rusdin, Darwin, & Indrawati, 2023). In addition, AI can also be an avenue to improve the curriculum and teach students more effectively to utilize advanced technology as well as promote ethical awareness to boost integrity through incorporation of digital literacy and responsible use of AI technology (Khreisat, et al., 2024).

Thus, it is not a surprising fact to know that the results of the survey conducted shows a dominant portion of the respondents are aware of AI writing tools that can be utilized for research and development. Reflected in Figure 1 is the portion of the respondents showing 95% are aware of the assistive tool for various academic purposes. This includes tools for literature searching, knowledge mapping, writing and grammar correcting tools, citation generators, tools for reading papers and literatures, and notetaking tools.

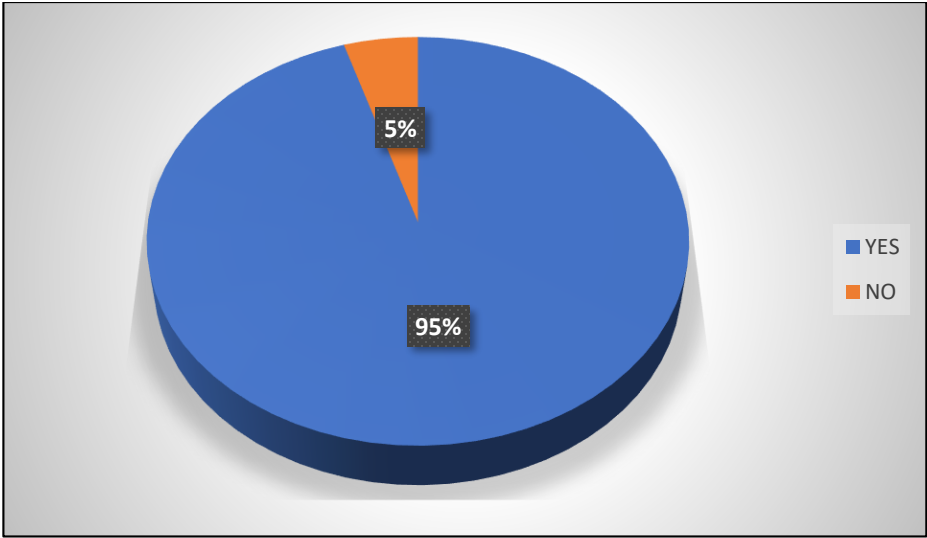


Figure 1. Distribution of respondents in terms of awareness on AI tools for various academic purposes (N = 62).

Confirming the strength and direction relationship of a few variables identified: Age Group (AG), Academic Rank (AR) and Years in Service (YS) against their Awareness (AA) on AI writing tools all shows a weak to moderate inverse relationship to which Table 3 summarizes.

Table 1. Test of strength and direction of relationships among variables

Parameters	<i>r_s</i> value	Direction	Strength
AG AA	<i>r_{s1}</i> = -0.35036586	Inverse	Moderate
AR AA	<i>r_{s2}</i> = -0.23562625	Inverse	Weak
YS AA	<i>r_{s2}</i> = -0.39501239	Inverse	Moderate

Legend: AG = Age Group; AR = Academic Rank; YS = Years in Service; AA = Awareness on AI

The table implies that an inverse relationship can be observed among the variables. This means that as the AG, AR and YS increases in value their awareness tends to decrease. However, the strength of

relationship varies per variable. Younger respondents, specifically the gen Z and millennials tends to be more aware of these AI tools than older age groups. However, the strength of relationship among the variables shows slight variation and unpredictability. Since $0.31 \leq |r_{s1}| \leq 0.50$ and $0.31 \leq |r_{s2}| \leq 0.50$ the strength shows a moderate relationship which means that there is a noticeable connection between the two variables. While there may be a slight association between the two, the results may not always as predictable. Thus, it can be inferred that age and years in service may or may not be associated with the awareness of the respondents. On another note, $0.11 \leq |r_{s3}| \leq 0.30$ denotes a weak relationship that means there are other variables that may be influencing the awareness on AI writing tools which may be more significant than the academic rank. This further implies that academic rank may not be associated as how faculty became aware of AI writing tools.

Purpose of using AI writing tools

In the context of using AI writing tools, there are several identified reasons for using these tools. Aside from the fact that it offers efficiency in writing as well as effective error correction, the use of AI writing tools for research and development were also recognized. Bankar and Lihitkar (2023) identified some of the purposes of AI tools for research communication. Some use AI tools such are used to generate scrapped custom data about specific documents and article. There are also tools that aids in formatting manuscripts required for editorial submissions while others are used to find and organize relevant information for research projects. The most popular ChatGPT was also identified to have various purposes including idea generation, answering research related questions, summarizing research papers, language assistance, technical document generation, and providing references.

On a separate study, Khalifa and Albadawy (2024) mentioned the domains to which AI can be utilized to improve academic functions including research: Idea Development and Research Design, Content Development and Structuring, Literature Review and Synthesis, Data

Management and Analysis, Editing, Review, and Publishing Support, Communication, Outreach and Ethical Compliance. These identified domains were summarized into a framework to provide a better understanding of the domains and what academic functions does each of the domain encompasses. Figure 3 was lifted from the works of Khalifa & Albadowy to represent the context of their works.

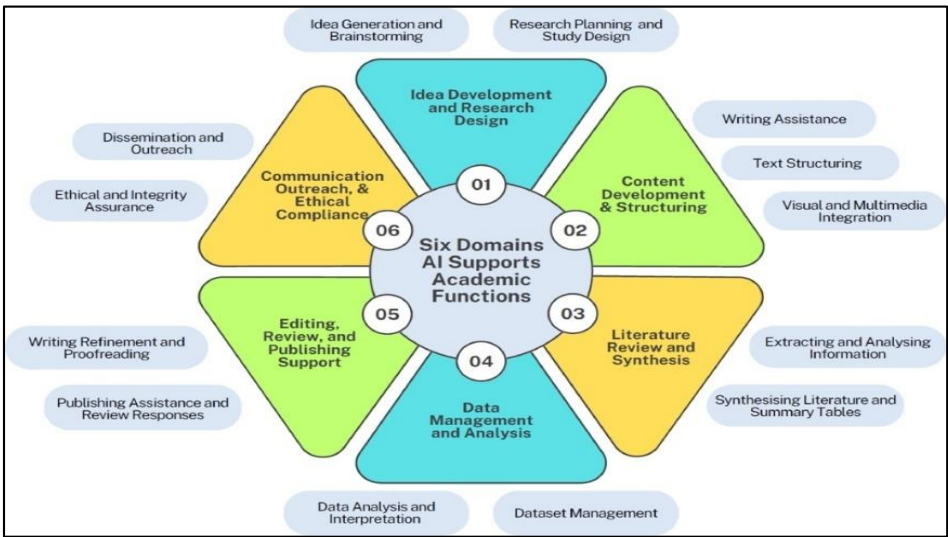


Figure 2. The six domains where AI can improve academic functions.
source: <https://tinyurl.com/5fea4d4c>

These works were also the basis to determine how AI writing tools are used for the purpose of research and development. As shown in Figure 4, a predominant portion of the responses shows that AI writing tools are only used for paraphrasing with 69% while a smaller portion of 16% shows that AI writing tools are employed for grammar checking. On another note, 11% of the total data shows that AI are also used for literature searching. And finally, 4% only for knowledge and concept mapping. While these data are collected from small population, the advantageous potential of AI writing tools remained unexplored.

Furthermore, if the data were viewed through the perspective of Khalifa & Albadawy, the results clearly shows that 89% of the respondents only leverages AI writing tools for content development and structuring, and editing, review, and publishing support. This indicates substantial reliance on AI tools for other purposes were observed from the respondents and that there may be deeper reasons as to why the respondents are limited to these uses only and for such unrealized potential of AI writing tools for research and development especially that most of the respondents of the study are tech-savvy and are open for greater opportunities.

The gap clearly points out significantly that there are greater opportunities to venture into and expand skills of faculty when it comes to the use of AI writing tools. As the multifaceted capabilities of AI writing tools can be explored through domains of academic functions identified by Khalifa & Albadawy.

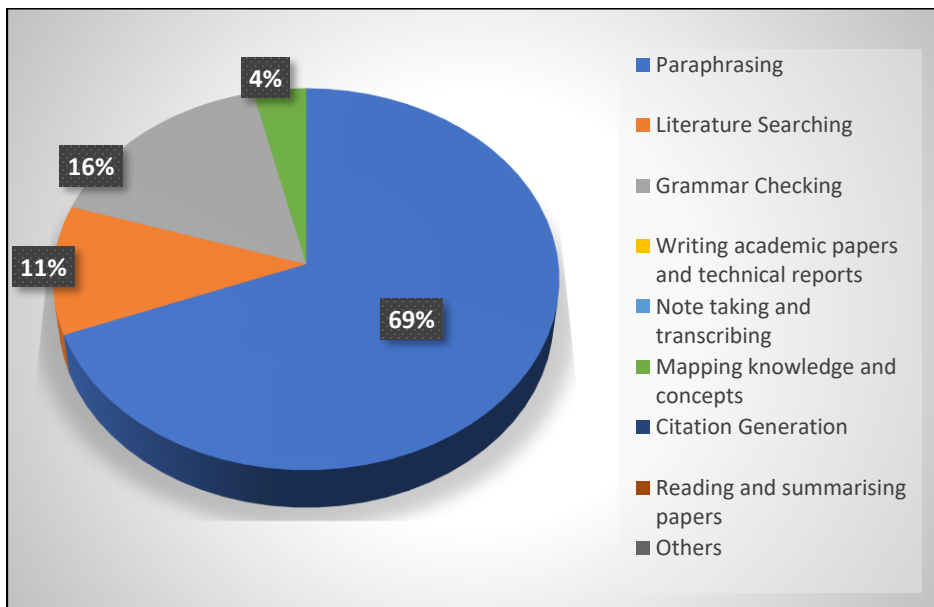


Figure 3. Purpose of using AI tools.

Awareness on commonly available AI tools

In connection with the findings on the purpose of using AI writing tools for, respondents' awareness on commonly used AI writing tools were also measured. Souifi et al. (2024) had similarly named AI tools that are useful for systematic literature reviews. Chatpdf as described was an advanced AI technology that allows effectively extract information from several pdf formatted references. There is also Pdf2gpt that uses Generative Pre-trained Transformer (GPT) model which makes the extracting important data and key points from pdf's simpler without having to browse the whole document. Hipdf, on the other hand, offers cost-free method for generating briefs and can also condense the context of a particular resources by producing synopses and highlighting key points and words using ChatGPT technology.

The works of Lee, Davis and Lee (2024) identified some AI tools for English writing course that can also be used for research and development. Among of which is the Google translate that can convert one language form to another, Grammarly for checking sentence correctness including style, structure, and syntax, Quillbot for aiding in the process of paraphrasing.

In a separate study, Wagner, Lukyanenko and Paré (2021) other useful AI tools when conducting literature reviews. Since the process of conducting the review takes too much time on analyzing data contents from existing literatures, the process of review takes longer especially if done manually. Thus, AI tools had bene substantially useful to reduce time. In terms of searching, Theory On allows searching through ontology-based constructs and construct relationships for behavioral theories. Likewise, ASReview and ADIT allows high potential screening support that are useful for repetitive decisions in screening articles. There is also RevMan and dmetar which are both useful for data analysis and interpretation especially for meta-analyses.

For the context of the present study, these AI tools and other commonly used were categorized to show which among are the most used

among the respondents. Tools were duly categorized and summarized in Figure 3 to provide visual representation.

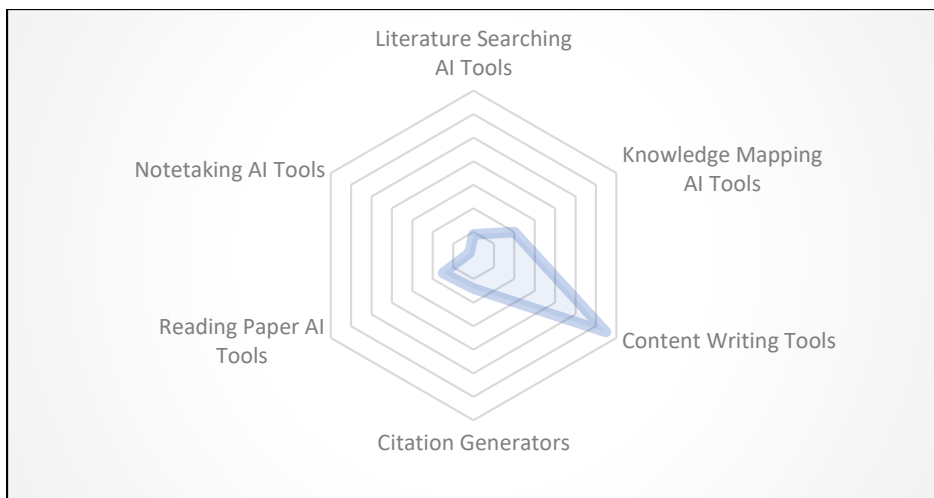


Figure 4. Commonly used AI writing tools.

From the radial map presented in Figure 4, the trend shows specific kind of AI technology that the respondents are aware of. Predominantly, the trend shows greater in content writing tools which helps in grammar, content related manipulation and enhancements. On the contrary, literature searching AI tools has a low recognition of AI's capability to facilitate literature's identification and analysis, which is an important yet time-consuming task in research. In addition to this, only a few of the respondents recognize citation generators. These tools serve a very niche, yet critical, purpose: auto-creating citations and references. Awareness of reading paper AI tools and knowledge mapping AI tools suggests a moderate level of familiarity with certain AI applications that are tailored toward more specialized use. Reading paper AI tools create opportunities for summarizing or analyzing a special type of AI technology that helps in extraction and suction of thoughts or argumentative structures out of papers into a lucid structure, thereby

possibly aiding in solving certain classes of AI-related tasks. This is similarly useful in law as noted by Atkinson, Bench-Capan and Bollegala (2020) especially in the context of automation in explaining legal reasoning.

On a closer inspection, majority of the respondents are only familiar with two content writing tools: Grammarly and Quillbot. Both generative AI tools for content writing that enhances the grammar, sentence structure, syntax, and tone of written works. In terms of literature searching tools, Elicit, Perplexity and R Discovery were the only tools identified by respondents. For citation generators, while most of them do not have anything identified, a few pointed out that they know about Mendeley, Endnote and Zotero as tools used for this purpose. Similarly, for reading papers assistive tools, their familiarity was limited to Scholarcy, SciSpace, and Enago Read.

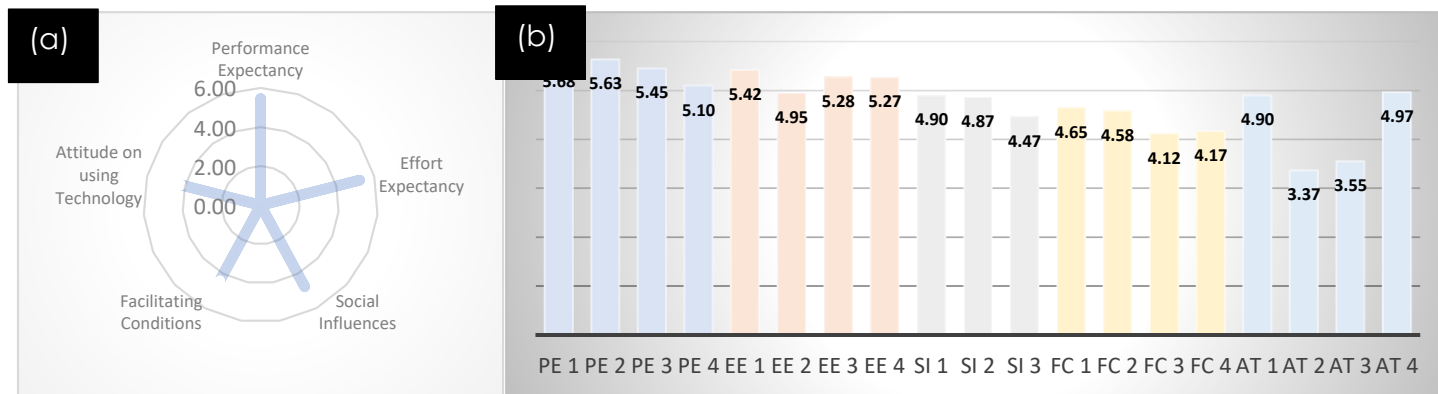
The results show a common pattern as to what has initially been observed in terms of awareness and use of AI writing tools for research and development. Thus, these findings may be an opportunity to expand the skills of the faculty and formulate a tailored fit policy in terms of AI writing tools to improve research outputs.

Perceived acceptance and utilization of AI writing tools for research writing based on UTAUT model

There are already several studies that had explored the applications and use of AI tools for academic research. For one, the study of Khlaif et al. (2024) that has been conducted among tertiary education teachers in Middle East investigated how early-adopters of Generative AI tools for student assessment was accepted and used through the adoption of a modified Unified Theory of Acceptance and Use of Technology (UTAUT) Model. Their findings revealed that by leveraging the use of AI tools for educational institutions, policy makers can develop an effective integration of AI which will enhance the teaching practices and student learning experiences.

In addition to this, Chankseiani and McCowan (2021) also highlighted the importance of technological advancements and utilizing its potential for the greater good. Similarly, Venkatesh (Venkatesh, 2023) The findings of the study show positive feedbacks in terms of performance expectancy and effort expectancy which are a few of the factors that the UTAUT Model used to measure the overall acceptance of a group in terms of the use of a particular technology. Similarly, the data also shows positive results in terms of social influences and facilitating conditions allowing the integration of AI in teaching and learning though with certain limitations and reservations.

The studies utilized the UTAUT Model to which this present study also applies to determine the level of acceptance and utilization of AI writing tools in research and development. The UTAUT model uses a framework to better understand the perception of individuals using different key constructs such as performance expectancy, effort expectancy, social influences and facilitating conditions. As such, Figure 6 summarizes the results of the measurement of these constructs.



Legend: 1.00 – 1.44 = Highly Unacceptable (HU); 1.45 - 2.44 = Unacceptable (U); 2.45 – 3.44 = Somewhat unacceptable (SU); 3.45 – 4.44 = Neither Acceptable, Nor Unacceptable (NANU); 4.45 – 5.44 = Somewhat Acceptable (SA); 5.45 – 6.44 = Acceptable (A); 6.45 – 7.00 = Highly Acceptable (HA).

Figure 1. Acceptance of AI writing tools in research and development using UTAUT model: (a) radial graph of the summary of mean scores per constructs, and (b) summary of mean scores per question based on each construct.

Upon evaluating the five major constructs identified, the grand mean of the scores reached 4.81 which is within the range of “Somewhat Acceptable” range that further implies a general positive perception towards the use of AI writing tools in research. Scanning the data shows diverse perceptions among the constructs in the measure of acceptance. In terms of Performance expectancy, the mean score reached 5.47 equivalent to “Acceptable” that reflects a strong belief of the respondents that AI writing tools would be useful in research. Similarly, a consensus of agreement was also observed among them that the tools would increase their productivity, would help them accomplish tasks more quickly, and would also improve their research outputs. On the other hand, Effort Expectancy and Social Influences, were at the range of “Somewhat Acceptable” with mean scores of 5.23, 4.38 and 4.20 respectively. This shows a moderate belief that AI writing tools are user-friendly when it comes to ease of learning, peers and the institution does not fully encourage the use of AI writing tools, thus, causing a mix view among the respondents. This result may be attributed to a diverse perception in terms of these constructs. Though high scores were noticeable in terms of user-friendliness of AI tools, ease of learning to operate the tools, and visual appeals, there is a moderate perception when it comes to benefits of the tools, as well as to the perceived adoption of such for research. Likewise, a weaker institutional support was captured from the responses and the necessity enforcement for using the tools as may be encouraged by the institution itself.

Overall, these statistics shows that the use of AI tools are positively viewed and accepted by the respondents across different constructs. However, several barriers may affect their acceptance especially in terms of institutional support and infrastructures which can be an avenue to investigate.

Table 2 provides an insight as to the utilization behavior of the respondents along the different constructs of UTAUT. The overall grand mean reached 4.57 equivalent to “Somewhat Usable” which further implies that a moderate adoption and utilization of AI writing tools for research purposes can be observed.

Table 2. Perceived utilization behavior of AI writing tools in research.

Factor	Mean Scores		Adjectival value
Performance Expectancy	5.47		
Effort Expectancy	5.23	5.15	SU
Social Influences	4.74		
Facilitating Conditions		4.38	NUNUN
Attitude on using Technology		4.20	NUNUN
GRAND MEAN		4.57	SU

Legend: 1.00 – 1.44 = Highly Unusable (HUN); 1.45 - 2.44 = Unusable (UN); 2.45 – 3.44 = Somewhat Unusable (SU); 3.45 – 4.44 = Neither Usable, Nor Unusable (NUNUN); 4.45 – 5.44 = Somewhat Usable (SU); 5.45 – 6.44 = Usable (U); 6.45 – 7.00 = Highly Usable (HU).

The summary of means for Performance Expectancy, Effort Expectancy, and Social Influences summarizes the partial acceptability of AI writing tools which reached a total mean of 5.15 equivalent to “Somewhat Usable.” On the other hand, it can be noted that Facilitating Conditions and Attitude on using Technology shows a different perspective. Both constructs were “Neither Usable, Nor Unusable” with a mean score of 4.38 and 4.20 respectively. These data imply that certain limitations as to the availability of resources, technical support, and system compatibility acts as barriers to be able to use AI writing tools effectively in the research. With this, the data also indicates hesitations in adopting such advanced technology in research due to certain factors including necessity, institutional requirements, and preferences. Thus, these avenues may be investigated in crafting intervening programs and projects to better understand AI writing tools as well as use its maximum potential.

Perceived Concerns and Apprehensions on the use of AI writing tools for research reports

AI tools are never perfect. This has already been clear in several articles such as that of Saver (2024) in MyAmericanNurse.com to which she cited that one of the drawbacks for such technology is that it lacks empathy, depth, and understanding of context to which humans have. While these tools are relevant and useful in different writing endeavors be it creative or highly technical, there are still certain cautions and limitations that needs to be understood by everyone including that of perpetuation of bias, lack of privacy, copyright and potential plagiarism. This sentiment is shared by Bouchrika (2024) that while AI revolutionize the world including academic research, there are several things that needs to be considered before it can be transformative. For one, AI generated contents can dilute the originality and creativity of writers. Algorithms of several AI tools such as ChatGPT, Gemini AI, and Cici AI that can create contents in just a quick prompt can be tempting for writers especially young writers and compromise their original work. In addition to this, AI tools can also be tempting for researchers to rely their work on the platform instead of doing meaningful exploration through literature review and appreciating the works of other researchers. Thus, its role in academic research may be promising but will still depend on how responsible users are. Finally, Zhai, Wibowo, and Li (2024) cautioned the public that over-reliance on AI tools would impact cognitive abilities of individuals as increasing preference of fast and optimal tools are being normalized. Thus, may implicate ethical issues of related works and creativity if not supervised and used in a responsible manner.

Notions from these authors were also among the concerns of the respondents when it comes to the integration of AI writing tools for research purposes. Similar opinions were duly regarded by the respondents as reflected in Table 4 that ranks a few of their apprehensions and concerns of when it comes to the use of AI writing tools in research.

Table 3. Perceived apprehensions and concerns in the use of AI writing tools for various academic purposes.

Apprehensions in the use of AI Tools	Frequency	Rank
Risks of plagiarism and other intellectual property violations	48	1 st
Most of the tools are too expensive to subscribe in	34	2 nd
Lack of accountability	33	3 rd
The information generated are not trusted	33	3 rd
Difficulties in complying to standards and regulations	26	4 th
No/slow internet connection in the locality	20	5 th
System protocols are complicated to understand	14	6 th
Too complicated to understand and use	11	7 th
AI tools are not compatible to the device I use	8	8 th

Based on the results from Table 3, the most common among the apprehensions of the respondents in terms of AI writing tools in various academic works pertains to ethical implications of AI generated contents. As noted by Saver, risks of plagiarism and other intellectual property violation may arise in over-dependence to such technology. This further implies that the respondents give importance to originality and creativity over fast and ease of doing academic works which could be viewed as a positive outlook on the integrity of faculty members.

In addition, the second common apprehensions are on the high cost of subscriptions. As almost all these platforms are available online and android based or iOS compatible applications can be downloaded via specific site such as PlayStore, the commonly used business model for these is the subscription-based model to which customers pay a recurring price at regular interval for them to be able to access more of the product services. Some products require higher subscription payment to be able to enjoy premium services. As reported from theverge.com subscription costs range \$30 per month to be able to enjoy premium services for generative AI tools with a few weeks free trial subscription (Weatherbed, 2024). Subscription cost increases based on certain factors including data

collection and management, user interface and experience design, algorithm development and training, deployment and infrastructure, regulatory compliance, and scalability and maintenance. With this, it is not surprising that the second most common concern of the respondents is the cost of subscription. With developing countries such as the Philippines where the economy is not always as stable, additional expenses on top of living expenses may be a factor in using certain technologies.

Other concerns of the respondents as to the use of AI writing tools for research includes the issue on lack of accountability and distrust for information generated by AI tools as well as the validity, reliability and transparency of AI generated outputs. Similarly, there are also concerns as to compliance on existing regulations and standard, slow internet connection in the locality, and other ICT infrastructure limitations of the institution.

In summary, the data provided a significant context of what may be barriers that may hinder full appreciation of AI technologies when it comes to research and development. To be able to utilize fully its capacity, these avenues may be investigated by the institution as whole.

Suggestions and comments on the use of AI writing tools for academic purposes

Word Clouds are among the AI generative tools that allows analysis of qualitative data. Textual data from an array are consolidated into a single image where the size of the word or phrase may be determined by the frequency at which the word or the phrase occur. Usually, a cleaning and thematic coding is used among the words and phrases before it is entered into a cloud generator to provide better results. Today, variations in data presentation had been incorporated by similar AI platforms enabling creators to manipulate the shape and colors of the text to fit the context of the data.

As noted by Mathews et al. (2015), since qualitative data are very useful when it comes to conducting research, it can also be difficult to

analyze and represent the data. Thus, the use of word clouds is more reader-friendly compared to the conventional way of presenting data.

Similarly, Word Clouds also improves visual display of data that makes it a useful assessment tool and fun especially with readers whose interest may not belong to reading long and highly technical phrases. Aside from this, the tool can also be used as a starting point to extract key concepts from large chunks of qualitative data and provide graphical depictions that would allow readers ease in understanding the concepts.

Suggestions and comments consolidated among the respondents provided insights as to what could be investigated so that AI writing tools may be brought closer to utilization and likewise, explore its full potential to improve research and development. Highlighted in Figure 7 are key words and consolidated phrases that were generated from the opinion of the respondents using Wordclouds.com, an opensource and free word cloud generator.



Figure 2. Suggestion and comments in the use of AI writing tools.

Among the key themes found is the emphasis on the need for a clear-cut policy to regulate the use of AI writing tools that outlines ethical, appropriate and responsible use of AI writing tools. Respondents also noted that specific provisions in the policy be included to ensure academic integrity and avoid ethical issues. It was also noted that respondents emphasized the need for trainings and awareness programs to teach the community on how to navigate and effectively using AI tools as well as understanding the limits of its use. Furthermore, it was also suggested that institutional investment to AI tools and ICT infrastructures be included to enhance existing access. Suggestions as to institutional subscriptions to AI tools, improving internet connectivity, and potential supply of compatible electronic devices be considered for this to work. Likewise, they also highlighted the limitations and ethical considerations and the need to regulate the usage of AI to prevent overdependence and reliance. As the tools follows specific algorithm that may not encompass all policies, accuracy is not always guaranteed. Thus, it was also suggested that the institution invest on AI detection and plagiarism checking software.

In a nutshell, the respondents fully acknowledge that AI has now revolutionized the academic arena. However, they also underscored the urgent need to prioritize crafting a structured policy that would regulate the use of AI and ensure academic integrity and likewise, invest on enhancing ICT infrastructures to maximize the benefits and advantage of using AI. By doing so, responsible and effective use of AI for research and development may be attained.

Conclusion and Recommendations

It is undeniable that AI had already been deep within the academic system: from platforms that aids in accessing various and wide range of literatures and studies for review, to generative analytics that allows data analysis for both quantitative and qualitative data; these tools that hasten and efficiently improves the way research writing has been traditionally done. Thus, it is imperative to say that at some point, individuals in the

academe: faculty, researchers, extension specialists, professional and administrative staffs may need to accept that fact that they need it to streamline with the flow of technology.

However, this fact does not give anyone the clearance to use it in any manner they want to use it. It is also imperative to say that the revolution AI tools offer in the academic arena comes with a responsibility: that is to use it ethically and with integrity. To bring it closer to acceptance and utilization, it is equally important that both ends of the spectrum be understood: although the tools are useful but with certain limitations. To be able to accomplish this, it is crucial for policies and guidelines be established first and delineate certain provisions that would ensure ethical, appropriate, and responsible use of AI tools in an academic setting. Similarly, information dissemination programs and activities be also utilized as an avenue to explore the potential of AI for various purposes while maintaining a clear stand on academic integrity amidst the use of AI tools. This is to ensure everyone understands the fact that despite the wonders and ease of using AI tools, the outputs are not always as accurate as what is expected and may potentially violate intellectual property rights. Thus, it is also important to ensure that users can discern and validate information from reliable sources before incorporating it into the output especially for research works. On another note, it is also as equally vital for AI to be utilized to improve and enhance ICT infrastructures of the institution. As most of the platforms now works through accessing the world wide web, it is an indispensable plan to improve the quality of internet connection within the institution. Similarly, subscription to AI tools and offering free access to everyone in the community would be an ease from the burden of incurring additional cost to the salary of personnel that could be utilized for personal needs instead. Additionally, ensuring that the hardware and devices of the institution are compatible with advanced AI platforms would also ensure smooth operation as well as maximizing its use. Superiorly, a feasible budget allocation may be considered by the institution to ensure that all programs under this brings the whole institution closer to being streamlined along technological advancements.

With, acknowledging technological advancements as an avenue to improve would be a factor in ensuring acceptance and utilization of AI writing tools for research and various academic purposes.

Acknowledgement

The authors would like to acknowledge the support from the Camarines Norte State College, through the College President, Dr. Marlo M. De La Cruz, PECE, the Vice President for Research and Extension, Dr. Rosalie A. Almadrones, Director for Research Services Division, Dr. Adrian C. Guinto. Equally acknowledged the assistance of the Campus Director of the College of Trades and Technology, Assist. Prof. Lovewiserlyn O. De la Cruz, MA.IE.

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