

ChatGPT: A Budding AI Blessing or an Ominous Farewell to Quality Academic Research – An Investigation

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Abstract

The growing use of Artificial Intelligence (AI) tools like ChatGPT in academic research in recent times has sparked intense debate among academic researchers over their potential to enhance efficiency versus their negative impact on research integrity and intellectual depth. This study investigates the implications of incorporating ChatGPT into various stages of academic research, comparing it with traditional methods in terms of efficiency, accuracy, and ethical considerations. Drawing on survey data from 355 academic researchers across diverse disciplines, the study assesses usage patterns, perceptions on AI accuracy, and concerns related to plagiarism and originality. Pearson's product moment correlation and Spearman's Ranked Correlation statistics were applied to explore relationships between AI tool usage and variables such as research efficiency, perceived quality, and ethical concerns. Findings reveal that while AI tools are moderately used, especially for literature reviews and data collection, the frequency of use shows weak, non-significant correlations with perceived accuracy or academic role. Ethical concerns were noted but did not significantly influence perceptions of AI efficiency. Despite their advantages in speed and accessibility, AI tools are perceived as limited in delivering the critical thinking, creativity, and contextual understanding inherent in and associated with traditional research. The study concludes that while ChatGPT and similar tools offer valuable support, they should not replace the human-driven processes that define scholarly excellence. Responsible integration, grounded in ethical awareness and academic rigor, is essential for preserving the quality and credibility of research in this AI era.

Keywords: Artificial Intelligence, ChatGPT, Ethical Concerns, Academic Integrity, Ominous Farewell.

Introduction

Intellectual rigor, critical analysis, and the expertise of human researchers are traditional descriptors that characterised research. Human creativity, problem-solving, and methodical work had been the hallmark of research process, ranging from hypothesis formation to data analysis and interpretation. This approach ascertained the originality and credibility of the research work. Besides, it expands knowledge horizon. However, emergence of artificial intelligence (AI) technologies, especially large language models such as ChatGPT, has introduced new and dynamic paradigm shift into the academic research process. These tools, powered by AI, offer researchers the ability to generate, summarize, and analyse textual content at unprecedented speeds, raising significant questions about their role in shaping the future of academic inquiry (Rahman *et al.*, 2023).

AI tools like ChatGPT, developed by OpenAI, are designed to generate human-like text responses based on vast datasets encompassing a wide array of topics. During research process ChatGPT for instance, has been found very useful in many areas which include but is not limited to literature review, data analysis, synthesis, and even drafting research papers. Reliance on machine learning algorithms, deep learning algorithms and Natural Language Processing (NLP) techniques made these possible. Thus, ChatGPT is one of the AI tools rapidly gaining ground and acceptance among research students, academics, and researchers seeking efficient ways to manage the growing demands of modern scholarship.

Despite its apparent advantages however, the introduction of AI tools into academic research brings attendant challenges demanding for unalloyed attention (Guleria *et al.*, 2023). Traditionally, research

process had been human-centric as depth of analysis, the originality of thought, and the intellectual rigor with which conclusions are drawn had been the core determinants of the value of scholarly works. Consequently, research process has been typically lengthy as a result of involved activities like careful data collection, methodical analysis, and peer-reviewed validation. As researchers engage deeply with the literature, critique existing theories, and contribute new insights to their field, this thoroughness results in critical thinking and intellectual contribution, qualities that are difficult for AI to replicate (Dergaa *et al.*, 2023).

AI-driven research tools like ChatGPT on the other hand, promise to streamline and automate many of these human-centric rigorous and time consuming tasks. Conspicuous are their abilities to rapidly process vast amounts of information, quickly summarize research articles, generate new hypotheses, and even suggest methodologies. They thus significantly save researchers time and energy amounting to efficiency.

However, the reliance on AI tools raises important questions about the potential erosion of critical thinking and intellectual engagement. While ChatGPT can analyse patterns in existing data, it lacks the ability to understand the deeper nuances of a research topic or offer original insights. This weakness of AI highlights its inherent limitations as a substitute for human intellect (Akinwale *et al.*, 2025). Another major concern is whether sustained use of AI in research could dilute originality, depth, and ethical integrity that characterises academic work. AI tools can assist in generating content and organizing ideas, but they cannot replace the human capacity for critical thought, ethical judgment, and intellectual curiosity. Besides, based on the ease with which AI can produce text, researchers may be tempted to rely solely on these tools thereby eroding the intellectual rigor that has been the hallmark of scholarly works. In addition, the potential is there for AI to introduce biases, propagate inaccuracies, or produce unoriginal content that complicates the academic research process (Carobene *et al.*, 2024).

This study critically examined the implications of incorporating AI tools like ChatGPT into academic research, focusing on their impact on the quality and integrity of scholarly work. By comparing traditional research methodologies with AI-driven approaches, this study explored how these tools are integrated into various stages of the research process and evaluate the associated risks and challenges. AI related ethical concerns such as plagiarism, bias, and the authenticity of AI-generated content will also be investigated. It is thus the objective of this study therefore to provide insights into how AI tools can complement traditional research methods without compromising traditional research hallmarks, namely: academic integrity and intellectual rigor (Ogwueleka, 2025). Indisputably, AI tools like ChatGPT offer researchers new and efficient ways that enhance academic research process, however, their integration into scholarly practices must be approached with caution. The fundamental purpose of academic research is to contribute new knowledge through critical analysis and original thought. Therefore, any tool, whether human or artificial, used in this process that fails to uphold the standards of intellectual engagement, ethical responsibility, and originality will ultimately result in defeating research objective. Hence, this study examined the feasibility of incorporating AI into academic research responsibly without compromising hallmarks of traditional academic excellence: critical thought, ethical judgment, and intellectual curiosity.

Comparing Traditional Research with the Use of AI in Academic Research

Academic research, whether grounded in tradition or propelled by the use of advanced technologies like Artificial Intelligence (AI), has the fundamental objective of expanding knowledge and understanding. However, the methods employed to achieve this goal are evolving, with AI tools such as ChatGPT playing an increasingly prominent role in the research landscape. This paper reviews the strengths, weaknesses, and pitfalls of both traditional and AI-assisted research methods, with a particular focus on comparing the two approaches in terms of efficiency, critical thinking, depth of understanding, ethical considerations, and their potential impact on the overall quality of academic research.

Traditional Research: The Foundation of Scholarly Work

For centuries, traditional academic research has been the cornerstone of knowledge creation, where scholars methodically explore questions and contribute to expanding human understanding. This research model typically follows a systematic process of problem identification, literature review, data collection, data analysis, and conclusion drawing. Researchers use well-established methodologies, such as qualitative, quantitative, and mixed methods approaches, to ensure the reliability and robustness of their findings (Wallwey & Kaifez, 2023). The human researcher, possessing intellectual autonomy, is at the centre of this process, interpreting data, forming hypotheses, and making conclusions based on rigorous evidence.

The primary advantage of traditional research lies in its emphasis on critical thinking. Researchers are required to engage with the material critically, identifying gaps, contradictions, or nuances that might be missed by AI tools. This deep engagement ensures that the research process is not just about gathering data but also about interpreting and contributing to the academic conversation (Hossan *et al.*, 2025). Human often bring an intuitive understanding to their work, applying complex reasoning and ethical considerations that go beyond just numbers or data points. This allows for a level of depth that AI, which lacks true understanding or experiential learning, cannot achieve. Another key advantage of traditional research is the ability to appreciate the nuances of the subject matter. Unlike AI tools that solely rely on, and explore existing and available data, in print or electronic, researchers can consider various contextual factors, such as acquired knowledge (personal or from others), cultural, social, or historical influences, that may affect their interpretation of data or theories. These insights are often grounded in personal experience, specialized knowledge, or interdisciplinary understanding, some of which may be native knowledge that have not been captured in writing or in any other form; thus, such specialised native unwritten knowledge are neither available for AI tools to explore nor can such be easily replicated by AI. Besides, it is human who also possess the ability to reflect critically on their assumptions and biases, ensuring that their findings are more robust and reflective of real-world complexities.

Ethical considerations form another integral component of traditional research. This is what informed incorporation of research concepts like ‘Informed consent’, ‘confidentiality’, ‘integrity’, and ‘accountability’ characterising traditional research process. Researchers are held accountable for their actions and the impact of their research. These ethical norms ensure that the research process respects the rights of participants and the integrity of the data (Lindner *et al.*, 2022). To maintaining public trust in academic research, especially when it involves sensitive topics or vulnerable populations, such practices are non-negotiable.

Traditional research methods on the other hand are not without weak points too. Required extensive literature reviews, data collection, and analysis can often be time consuming. Longitudinal studies and those involving large-scale data collection could last for several years because of the need to be thorough and for in-depth engagement (Mondal & Mondal, 2023). Besides, bottlenecks associated with access to resources, such as expensive academic journals, fieldwork opportunities, or proprietary data sets, can limit the scope of research and prevent scholars from being thorough enough. Financial constraints, institutional, or geographical barriers could also hinder researcher’s ability to comprehensively conduct studies.

There is also the persistent and inevitable human bias element in traditional research. Deliberately or not, biases do creep into studies via influenced research components such as: selection of research questions, data interpretation, and drawing conclusions. While peer review processes are designed to mitigate such biases, they cannot completely eliminate them (Hosseini & Horbach, 2023). As a result, traditional research is not immune to inaccuracies or limitations that arise from personal or institutional biases, and this may compromise the validity of the findings.

AI Tools in Research: Efficiency Meets Automation

By offering a more automated, efficient approach to many stages of the research process, AI tools like ChatGPT have revolutionized the way academic research is conducted. The primary appeal of AI in

academic research lies in its ability to process vast amounts of data quickly and accurately. AI tools can scan through large datasets, summarizing and synthesizing information that would otherwise take humans much longer to accomplish. In content generation research tasks such as literature reviews, hypothesis generation, and data analysis, AI tools out-performs traditional approach, highlighting their resourcefulness to researchers. (Mondal & Mondal, 2023). This efficiency of AI tools is potentially creating a paradigm shift in research work, as it saves time and reduces the associated research cognitive workload.

Efficiency of AI tools like ChatGPT offers much relief to researchers as these tools can process and analyse data in a fraction of the time it would take human to accomplish, they can rapidly generate summaries of existing literature, provide researchers with instant access to relevant information that would otherwise require hours of manual effort (Jarrah *et al.*, 2023), automate repetitive tasks such as data entry, sort through large datasets, and perform basic analysis among others. By ‘out-sourcing’ these repetitive and otherwise time consuming tasks to AI tools, researchers can focus more on complex aspects of their work, such as interpretation and theory development.

AI also democratizes access to research tools. Many researchers, particularly those without institutional backing or access to expensive resources, benefit from AI's ability to provide high-level research support at little to no cost. This has the potential to level the playing field for scholars in under-resourced regions or institutions, enabling greater participation in the global research community. Furthermore, AI tools facilitate collaboration across borders and disciplines, making it easier for researchers from different countries or fields of study to work together (Guleria *et al.*, 2023). These collaborative opportunities can lead to richer, more diverse insights and foster interdisciplinary research that might otherwise be constrained by traditional methods. According to Bansal (2024), AI's ability to recognize patterns in large datasets is another significant advantage. AI can uncover correlations and trends in data that may not be immediately obvious to human researchers. This has the potential to reveal new insights and inform novel research questions that might otherwise remain unexplored. For example, AI can help identify patterns in social, economic, or biological data that could suggest new theories or challenge existing assumptions.

However, the widespread use of AI in academic research also presents several challenges and limitations. One of the most pressing concerns is the over-reliance on AI tools. While AI can significantly enhance efficiency, it can also reduce the development of critical thinking and independent problem-solving skills in researchers. The ease with which AI can generate content might encourage shallow research practices, where researchers rely on AI-generated outputs without engaging deeply with the material. This could lead to a decline in the quality of research as AI-generated responses may not always offer the depth, context, or originality required in scholarly work (Khlaif *et al.*, 2023).

Moreover, AI lacks the creativity and intuition that human researchers bring to their work. While AI can analyse data and suggest hypotheses based on existing knowledge, it cannot conceptualize novel theories or challenge existing paradigms. AI operates within the constraints of its programming and training data, meaning that it can only work with what it has been exposed to. This makes it ill-suited for tasks that require the generation of truly innovative ideas or the questioning of established academic norms (Adelana *et al.*, 2024; Hagendorff & Wezel, 2020). As a result, AI may be a useful tool for generating ideas and organizing research but is unlikely to replace the creative thinking required for groundbreaking research.

Ethical issues surrounding AI in academic research also present significant challenges. The use of AI raises concerns about plagiarism, intellectual property, and the potential for AI-generated content to be presented as original research without proper attribution. Furthermore, the possibility of AI introducing biases into research is a critical issue. AI tools, including ChatGPT, are trained on vast datasets, many of which may contain biases inherent in the original sources. This can result in AI-generated content that reflects these biases, potentially distorting research findings or reinforcing existing prejudices (Azaria *et al.*, 2024). Quality control is another area where AI tools may fall short. Despite their impressive capabilities, AI tools

can sometimes produce content that lacks coherence, depth, or contextual relevance. They may fail to distinguish between high-quality and low-quality sources, compromising the integrity of the research. Researchers must, therefore, exercise caution when using AI-generated content and ensure that it undergoes rigorous validation and verification (Khankhoje, 2023).

While traditional research methods remain the gold standard for academic inquiry, AI tools like ChatGPT offer exciting possibilities for enhancing the efficiency and reach of scholarly work. These tools can streamline many aspects of the research process, from literature reviews to data analysis, and provide opportunities for greater collaboration and accessibility. However, the integration of AI into academic research raises significant ethical, intellectual, and quality control challenges. As AI tools become more widely used, it is essential for researchers to strike a balance between leveraging AI's efficiency and maintaining the intellectual rigor, originality, and ethical standards that are the hallmark of high-quality academic work.

Materials and Methods

This study employed a quantitative research approach to investigate the role of AI tools, particularly ChatGPT, in academic research and to compare it with traditional research methods. Data was collected using KoboToolbox, a digital survey tool adopted to capture the experiences, perceptions, and practices of academic researchers (arranged into 5 categories for the purpose of research), who had worked with both AI tools and traditional research methods. The survey included closed-ended and Likert-scale questions to assess variables such as the frequency of AI tool usage, perceptions of research efficiency, impact on research quality, and ethical concerns, such as plagiarism and data integrity. Of the 402 respondents from our infinite population targeted at 5 major field categories (Table 1), a sample of 355 academic researchers who had between 1 to 5 years experience using both traditional and AI research approaches in tertiary institutions and research institutes were selected. These were selected from all the five major fields polled and their corresponding subfields [social sciences (with subfields such as Economics, Marketing), pure sciences (such as Physics, Biological and Mathematical sciences), applied sciences (such as Data Science, Computer and Information Science), Art, Language and Literature (History, English studies, Mass Communication, Fine and Applied Art), and Others (Hotel and Tourism, Aviation Industry, Marine Engineering, Crops and Animal Science, Meteorology, Statistics and Engineering)] using purposive, convenience and expert sampling techniques, to ascertain broad representation across disciplines. Number of respondents selected from each major subgroup ranged between 25 and 85 individual based on convenience, turnout and availability. The sample was selected based on their familiarity with AI tools like ChatGPT and their use of traditional research methodologies. The data was analysed using descriptive statistics to summarize the responses, including frequencies and percentages. Additionally, Pearson's product moment correlation and Spearman's Ranked Correlation statistics were applied to explore relationships between AI tool usage and variables such as research efficiency, perceived quality, and ethical concerns.

Regression analysis was used to discover if factors such as (accuracy, academic role, and frequency of AI tool usage (tables 3, 4, 5, and 6)) are significantly responsible for increased adoption of AI tools in research.

Results and Discussion

The Major Academic Discipline Categories mean of 3.03 (see table 1) suggests a diverse representation of academic fields, with a moderate spread in responses. The Academic Role mean of 2.43 indicates a mix of graduate students and faculty members. Years of Research Experience has a mean of 3.00, showing moderate experience. Familiarity with AI tools has a mean of 3.01, indicating moderate familiarity. Types of Academic Methodology shows a slight preference for mixed or quantitative methods with a mean of 2.02, indicating a consistent use of methodologies across respondents.

Table 1: General Descriptive Statistics for Demographics and Variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Major Academic Discipline Categories	355	1	5	3.03	1.442
Academic Role	355	1	4	2.43	1.133
Years of Research Experience	355	1	5	3.00	1.401
Familiarity with AI tools (e.g., ChatGPT)	355	1	5	3.01	1.438
Types of Academic Methodology used	355	1	3	2.02	0.808

From Table 2, the overall usage of AI tools is moderate (mean = 3.01), showing that respondents use AI tools occasionally. AI usage in Literature Review and Data Collection has the highest mean of 3.00 and 3.01, reflecting the frequent use of AI tools for these tasks. Hypothesis generation and Writing sections have slightly lower means, indicating AI is used less for these more traditional stages of research. Skewness values are close to zero, suggesting balanced responses without significant outliers.

Table 2: Descriptive Statistics for AI Usage in Research Stages

Variable	N	Mean	Std. Deviation	Skewness	Std. Error
How often do you use AI tools in your research process?	355	3.01	0.076	-0.025	0.129
AI usage/Literature Review	355	3.00	0.074	0.064	0.129
AI usage/Hypotheses	355	2.95	0.074	0.041	0.129
AI usage/Data Collection	355	3.01	0.072	0.024	0.129
AI usage/Data Analysis	355	2.96	0.074	0.027	0.129
AI usage/Writing sections	355	2.94	0.075	0.009	0.129

Table 3 shows that the Postgraduate students and Independent Scholars report the highest usage of AI tools, particularly at the “Very Frequently Used” level (24 and 16 respectively). Undergraduate students are more evenly distributed across frequency categories, with a significant portion using AI tools moderately and frequently. Faculty members report the least frequent use of AI tools, with only 13 indicating very frequent use. Overall, AI tool usage is moderate, with postgraduate students and independent scholars leading the frequency of use. The fact that postgraduate students are research students with strong desire to finish on time and finish well might account for this outcome. AI tools lend themselves out towards achieving such goals. The same could be said of independent scholar.

Table 3: Cross-tabulation of AI Tool Usage by Academic Role

How often do you use AI tools in your research process?	Undergraduate (N=98)	Postgraduate (N=94)	Faculty Member (N=77)	Researcher/ Independent Scholar (N=86)	Total (N=355)
Never Used	18	18	19	19	74
Rarely Used	16	19	15	16	66
Occasionally Used	23	15	14	18	70
Frequently Used	20	18	16	17	71
Very Frequently Used	21	24	13	16	74
Total	98	94	77	86	355

The correlation results show weak and generally non-significant relationships between AI tool usage and perceived accuracy as well as academic role. The Pearson correlation between AI tool usage and accuracy perception is -0.104 ($p = 0.051$), indicating a very weak negative correlation that is not statistically

significant. Similarly, the relationship between academic role and AI tool usage is weak (Pearson = -0.058, $p = 0.280$), suggesting that academic role does not influence how often AI tools are used (see table 4).

Table 4: Correlation Table (Pearson Product Moment Correlation)

Variables	How often do you use AI tools (e.g., ChatGPT) in your research process?	In your opinion, are AI tools accurate compared to traditional methods in terms of accuracy in data analysis?	Academic Role
How often do you use AI tools (e.g., ChatGPT) in your research process?	Pearson Correlation	-0.104	-0.058
	Sig. (2-tailed)	0.051	0.280
	N	355	355
In your opinion, are AI tools accurate compared to traditional methods in terms of accuracy in data analysis?	Pearson Correlation	1	0.032
	Sig. (2-tailed)	0.051	0.551
	N	355	355
Academic Role	Pearson Correlation	-0.058	1
	Sig. (2-tailed)	0.280	
	N	355	355

From table 5, computed Spearman's rho value confirms weak and non-significant correlations between AI tool usage and accuracy perception as well as academic role. The correlation between AI usage and accuracy is -0.104 ($p = 0.050$), which is weak but marginally significant. The relationship between academic role and the other variables is extremely weak, indicating no significant association with AI tool usage or its perceived accuracy.

Table 5: Spearman's Rho Correlation Table

Variables	How often do you use AI tools (e.g., ChatGPT) in your research process?	In your opinion, are AI tools accurate compared to traditional methods in terms of accuracy in data analysis?	Academic Role
How often do you use AI tools (e.g., ChatGPT) in your research process?	Spearman's rho	-0.104	-0.057
	Correlation Coefficient		
	Sig. (2-tailed)	0.050	0.281
In your opinion, are AI tools accurate compared to traditional methods in terms of accuracy in data analysis?	N	355	355
	Spearman's rho	1	0.036
	Correlation Coefficient		
Academic Role	Sig. (2-tailed)	0.050	0.494
	N	355	355
	Spearman's rho	-0.057	1
	Correlation Coefficient		
	Sig. (2-tailed)	0.281	
	N	355	355

The regression analysis in table 6 shows that the predictors (accuracy, academic role, and frequency of AI tool usage (tables 3, 4, and 5)) do not significantly explain the variance in the perceived efficiency of AI tools. With an R Square of 0.006, only 0.6% of the variance in efficiency ratings can be explained by these variables. The F-change of 0.668 ($p = 0.572$) indicates that the overall model is not statistically significant.

Table 6: Regression Analysis Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	0.075	0.006	-0.003	1.417	0.006	0.668	3	351	0.572

Discussion of Findings

The general descriptive statistics provide an overview of the academic roles represented in the study, which include undergraduates, postgraduates, faculty members, and independent scholars. While the study explored the frequency of AI tool usage across these different academic roles, the primary focus remains on understanding how AI tools like ChatGPT influence efficiency, accuracy, and ethical considerations in academic research. The analysis revealed no significant relationship between academic rank and the impact of AI tools on these outcomes. This suggests that, regardless of academic role, AI tools are perceived similarly in terms of their ability to enhance research efficiency, although ethical concerns such as plagiarism and originality persist across all groups. This observation aligns with findings from Agarwal et al. (2025), who noted that AI tools contribute to increased efficiency by automating tasks like literature reviews and data analysis. However, similar to the studies by Micabalo et al. (2024) and the ethical concerns outlined by Miao et al (2023), the greater efficiency brought about by AI tools also raises concerns regarding their potential for misuse, such as plagiarism and the decline of critical thinking skills. These results highlight that while AI tools enhance efficiency, they cannot replace the intellectual depth and creativity essential to scholarly work. Therefore, the study emphasizes that the true value of AI tools lies not in their frequency of use but in their ability to contribute meaningfully to the quality, integrity, and depth of academic research.

The cross-tabulation of AI tool usage by academic role further illustrates this lack of significant distinction. Postgraduate students and independent researchers exhibited the highest frequency of AI usage, particularly in the "very frequently used" category, but there was no clear trend suggesting that faculty members used AI tools significantly less often. This finding aligns with the increasing recognition that AI tools are beneficial for research tasks, irrespective of the user's academic role. The study's lack of significant differences across academic roles challenges assumptions about AI tool adoption is more prominent among less experienced researchers findings from this study rather suggests that faculty members are equally inclined to utilize these tools when they find them beneficial for certain stages of research.

When it comes to the perceived accuracy of AI tools compared to traditional methods, the study found weak correlations between AI tool usage and accuracy perceptions. The Pearson correlation between frequency of AI tool usage and perceived accuracy was -0.104, which is statistically insignificant ($p = 0.051$). Similarly, the Spearman's rho coefficient of -0.104 was only marginally significant ($p = 0.050$), further indicating that the frequency with which researchers use AI tools does not strongly correlate with their perceptions of the tools' accuracy in data analysis.

These results are somewhat surprising, given the growing discourse in academic literature on the potential of AI tools to outperform traditional methods in certain research tasks. Guleria et al. (2023) found that researchers who used AI tools frequently tended to rate them more highly in terms of accuracy, which contrasts with the current study's findings. The weak negative correlation here suggests that more frequent users of AI tools do not necessarily perceive them as more accurate. It is possible that while AI tools are viewed as useful for certain tasks, such as literature review and data collection, researchers may still perceive traditional methods as superior in terms of the precision and depth required for more complex

research tasks like hypothesis generation or data interpretation. This may reflect a hesitancy to fully trust AI in areas that demand higher levels of critical analysis or nuanced understanding. PAUSED

A significant aim of this study was to explore how ethical concerns around AI tools, such as data manipulation or misrepresentation, impact their perceived efficiency. However, the regression analysis results showed that ethical concerns did not significantly affect the perceived efficiency of AI tools. With an R Square of 0.006 and an F-change of 0.668 ($p = 0.572$), the regression model indicated that the predictors, including ethical concerns, academic role, and AI usage frequency, do not explain much of the variation in how AI tools are perceived in terms of efficiency. These results align with the study's hypothesis that while ethical concerns remain important, they are not the primary drivers of perceptions regarding AI tools' efficiency in academic research. Previous studies, such as Azaria et al., (2024), have underscored that ethical concerns, including the risk of plagiarism or bias in AI-generated content, might deter researchers from fully embracing these tools. However, in this study, ethical concerns did not significantly sway researchers' views on AI's effectiveness. This suggests that although ethical issues are a recognized challenge, their perceived impact on AI tool efficiency may not outweigh the practical benefits that these tools offer in terms of time-saving and data handling.

The study also aimed to critically examine the integration of AI tools into academic research, comparing their effectiveness to traditional research methods, and investigating the ethical concerns surrounding their use. The findings suggest that while AI tools are increasingly integrated into academic research, their perceived efficiency and accuracy remain weakly correlated with frequency of use or academic role. Furthermore, ethical concerns, while acknowledged, do not appear to significantly affect how AI tools are perceived in terms of their contribution to research efficiency.

This study stands out in its ability to demonstrate that AI tools are perceived as valuable but not necessarily superior to traditional methods in terms of efficiency or accuracy. It also highlights that AI adoption is not significantly influenced by academic rank or the level of research experience, challenging common assumptions that newer researchers would be more inclined to adopt such tools. These findings suggest that AI tools might still be seen as complementary resources for specific research tasks rather than replacements for traditional methods. Furthermore, while ethical concerns exist, they do not seem to be a significant barrier in the adoption or perceived efficiency of AI tools.

Conclusion

This study examined the integration of AI tools, particularly ChatGPT, in academic research, focusing on their impact on efficiency, accuracy, and ethical concerns. The findings reveal that while AI tools are used across various academic roles, their perceived impact on research efficiency and accuracy does not significantly differ by academic rank. AI tools are seen as complementary resources that enhance efficiency but do not replace the intellectual depth or critical analysis required for high-quality scholarly work. Ethical concerns, such as plagiarism and the erosion of critical thinking, were present across all academic groups. However, these issues did not significantly influence the perception of AI's effectiveness, suggesting that the benefits of AI, such as time-saving and convenience, are still valued more than the potential risks. The study emphasizes the importance of maintaining intellectual rigor and academic integrity in the face of increasing AI reliance. While AI tools can improve research efficiency, they should complement, not replace, human intellect. This research highlights the potential of AI to enhance academic work, while urging cautious and ethical integration. Further studies should explore AI's specific applications and ethical implications to ensure these technologies positively contribute to the quality and integrity of academic research.

References

- Adelana, O. P., Ayanwale, M. A., & Sanusi, I. T. (2024). Exploring pre-service biology teachers' intention to teach genetics using an AI intelligent tutoring-based system. *Cogent Education*, 11(1), 2310976.
- Agarwal, S., Kweh, Q. L., Jamali, D., Wider, W., Hossain, S. F. A., & Fauzi, M. A. (2025). How does artificial intelligence shape the efficiency and quality of research in business studies? A systematic literature review and future research framework. *Discover Sustainability*, 6, 718.
- Akinwale, O. E., Kuye, O. L., & Doddanavar, I. (2025). Scourge of replacing contemporary work environment with artificial intelligence (AI-dark-side): The role of capacity development in quality of work-life and organisational performance. *Journal of Systems and Information Technology*, 27(1), 116-145.
- Azaria, A., Azoulay, R., & Reches, S. (2024). ChatGPT is a remarkable tool – for experts. *Data intelligence*, 6(1), 240 – 296.
- Bansal, P. (2024). AI Pattern Recognition and its Features. *International Journal of Engineering and Advanced Technology (IJEAT)*.
- Carobene, A., Padoan, A., Cabitza, F., Banfi, G., & Plebani, M. (2024). Rising adoption of artificial intelligence in scientific publishing: evaluating the role, risks, and ethical implications in paper drafting and review process. *Clinical Chemistry and Laboratory Medicine (CCLM)*, 62(5), 835-843.
- Dergaa, I., Chamari, K., Zmijewski, P., & Ben Saad, H. (2023). From human writing to artificial intelligence generated text: Examining the prospects and potential threats of ChatGPT in academic writing. *Biology of Sport*, 40(2), 615–622.
- Guleria, A., Krishan, K., Sharma, V., & Kanchan, T. (2023). ChatGPT: Ethical concerns and challenges in academics and research. *Journal of Infection and Development Countries*, 17(9), 1292–1299.
- Hossan, D., Wolfs, B., & Petkovic, M. (2025). Questionnaire Validity and Reliability: A Review with Practical Guidelines. *Journal of Entrepreneurship, Business and Economics*, 13(1), 135-186.
- Hosseini, M., & Horbach, S. P. (2023). Fighting reviewer fatigue or amplifying bias? Considerations and recommendations for use of ChatGPT and other large language models in scholarly peer review. *Research integrity and peer review*, 8(1), 4.
- Jarrah, A. M., Wardat, Y., & Fidalgo, P. (2023). Using ChatGPT in academic writing is (not) a form of plagiarism: What does the literature say. *Online Journal of Communication and Media Technologies*, 13(4), e202346.
- Khankhoje, R. (2023). AI based test automation for intelligent chatbot systems. *International Journal of Science and Research (IJSR)*, 12(12), 1302-1309.
- Khlaif, Z. N., Mousa, A., Hattab, M. K., Itmazi, J., Hassan, A. A., Sanmugam, M., & Ayyoub, A. (2023). The potential and concerns of using AI in scientific research: ChatGPT performance evaluation. *JMIR Medical Education*, 9, e47049.
- Lindner, T., Puck, J., & Verbeke, A. (2022). Beyond addressing multicollinearity: Robust quantitative analysis and machine learning in international business research. *Journal of International Business Studies*, 53(7), 1307-1314.
- Miao, J., Thongprayoon, C., Suppadungasuk, S., Garcia Valencia, O. A., Qureshi, F., & Cheungpasitporn, W. (2023). Ethical dilemmas in using AI for academic writing and an example framework for peer review in nephrology academia: a narrative review. *Clinics and Practice*, 14(1), 89-105.
- Micabalo, A. D., Ofianga, A. M., Ormita, E. B., Orola, G. M., & Ong, J. D. S. G. (2024). The impact of AI-powered study tools on the academic performance and the motivation of higher education students.
- Mondal, H., & Mondal, S. (2023). ChatGPT in academic writing: Maximizing its benefits and minimizing the risks. *Indian Journal of Ophthalmology*, 71(12), 3600-3606.
- Ogwueleka, F. N. (2025). Plagiarism Detection in the age of artificial intelligence: current technologies and future directions. *AI and ethics, academic integrity and the future of quality assurance in higher education*, 10.

- Rahman, M., Terano, H. J. R., Rahman, N., Salamzadeh, A., & Rahaman, S. (2023). ChatGPT and academic research: A review and recommendations based on practical examples. *Journal of Education, Management and Development Studies*, 3(1), 1–12.
- Wallwey, C., & Kajfez, R. L. (2023). Quantitative research artifacts as qualitative data collection techniques in a mixed methods research study. *Methods in Psychology*, 8, 100115.