Attitudes, Knowledge and Perspectives on the Ethics of AI Use Among Researchers in Education at the Lebanese University

Rabab Hteit / Iman Khalil

Doctoral School of Literature, Humanities and Social Sciences. Lebanese University, Beirut, Lebanon.

Faculty of Education, Lebanese University, Beirut, Lebanon

Rabab.hteit@st.ul.edu.lb / Iman.khalil@ul.edu.lb

Abstract

Artificial Intelligence (AI) has an undeniable impact on the field of research, services like natural language processing (NLP), automated writing assistance and others, are used to accelerate the rate of knowledge production. Despite the widespread availability and use of open AI tools, there remains a significant gap in our understanding of users' attitudes, knowledge of AI potential and limitations. Additionally, a consensus on the ethical use of AI in academic research has yet to be reached on a global scale.

To explore users' attitudes, knowledge, and ethics of AI among research instructors and students, this study employed a quantitative methodology and relied on a survey passed to a sample of 106 education researchers (58 instructors and 48 students). Results showed that participants hold a positive attitude towards AI despite concerns about unemployment. They are self-taught and have a basic AI knowledge. 72% of instructors and 77% of students voted citing AI in-text and in references as the best way to control AI use. The results revealed similar views on AI among the two groups, despite 65% of instructors and 75% of students reporting a lack of prior discussions or agreements on the use of AI in research projects.

This study sheds light on the need for continuous AI training, and discussions surrounding the regulation of responsible and effective AI use in research practices.

Key words

Artificial intelligence, research, attitudes, knowledge, ethics.

مستخلص

الذكاء الاصطناعي (AI) له تأثير لا يمكن إنكاره على مجال البحث. يتم استخدام خدمات مثل معالجة اللغة الطبيعية (NLP) والمساعدة في الكتابة الآلية وغيرها لتسريع معدل إنتاج المعرفة. على الرغم من التوافر الواسع واستخدام أدوات الذكاء الاصطناعي المفتوحة، لا يزال هناك فجوة كبيرة في فهمنا لمواقف المستخدمين ومعرفتهم بإمكانات وقيود الذكاء الاصطناعي. بالإضافة إلى ذلك، لم يتم التوصل بعد إلى توافق عالمي بشأن الاستخدام الأخلاقي للذكاء الاصطناعي في البحث الأكاديمي.

بهدف معرفة مواقف ومعارف وأخلاقيات الذكاء الاصطناعي لدى الباحثين من الأساتذة والطلاب المستخدمين للذكاء الاصطناعي، استخدمت هذه الدراسة منهجية كمية و اعتمدت استبياناً على عينة من 58 أستاذاً و48 طالباً من الجامعة اللبنانية. أظهرت النتائج أن المشاركين لديهم موقف إيجابي تجاه الذكاء الاصطناعي على الرغم من القلق بشأن البطالة الناجمة عن استحواذ الذكاء الاصطناعي على الوظائف. كمانهم يتعلمون ذاتيًا ولديهم معرفة أساسية بالذكاء الاصطناعي. كذلك، يعتقد 72٪ من الاساتذة و77٪ من الطلاب أن الاستشهاد بالذكاء الاصطناعي في النص والمراجع هو أفضل طريقة لتنظيم استخدامه. وكشفت النتائج عن تشابه وجهات النظر المتعلقة بالذكاء الصطناعي بين المجموعتين على الرغم من أن 65٪ من الاساتذة و75٪ من الطلاب أفادوا بعدم وجود مناقشات أو اتفاقات سابقة حول استخدام الذكاء الاصطناعي في مشاريع البحث. تسلط هذه الدراسة الضوء على الحاجة إلى التدريب المستمر على الذكاء الاصطناعي والمناقشات حول تنظيم الاستخدام المسؤول والفعال للذكاء الاصطناعي في الممارسات البحثية.

كلمات مفتاحية

الذكاء الاصطناعي، البحث، المواقف، المعرفة، الأخلاقيات.

Résumé

L'intelligence artificielle (IA) a un impact indéniable sur la recherche, avec des services tels que le traitement automatique du

langage naturel (TALN) et l'assistance à l'écriture automatisée qui accélèrent la production de connaissances. Bien que les outils d'IA soient utilisés de manière généralisée et gratuite, nous ignorons les attitudes des utilisateurs et leur compréhension des possibilités et des limites de l'IA. En outre, il n'y a pas encore de consensus mondial sur l'utilisation éthique de l'IA dans la recherche académique.
Pour comprendre les attitudes, les connaissances et l'éthique de l'IA chez les chercheurs enseignants et étudiants utilisateurs de l'IA, cette étude quantitative a utilisé un questionnaire auprès d'un échantillon de 58 enseignants et 48 étudiants de l'Université Libanaise. Les résultats ont montré que les participants ont une attitude positive envers l'IA malgré des préoccupations concernant un chômage induit par l'IA. Ils apprennent de manière autonome et ont une connaissance de base de l'IA. De plus, 72% des professeurs et 77% des étudiants pensent que citer l'IA dans le texte et les références est la meilleure façon de réglementer l'utilisation de l'IA. Les résultats ont révélé des points de vue similaires entre les deux groupes, bien que 65% des professeurs et 75% des étudiants aient rapporté l'absence de discussions ou d'accords préalables sur l'utilisation de l'IA dans les projets de recherche. Cette étude met en lumière la nécessité d'une formation continue sur l'IA et de discussions sur la réglementation de l'utilisation responsable et efficace de l'IA dans les pratiques de recherche.

Mots-clés

Intelligence artificielle, recherche, attitudes, connaissances, éthique.

1. Introduction

On November 30, 2022, OpenAI published an early preview of ChatGPT. Users eagerly posted samples of the chatbot's capabilities on social media, causing it to swiftly become widespread. Illustrations ranged from organizing trips to creating tales to developing computer code. The tool drew in over a million users in only five days (Marr, 2024), most of which were introduced for the first time to the concepts of Artificial Intelligence (AI). November 30, 2022, OpenAI published an early preview of ChatGPT (Amisha et al., 2019). AI has been improving very quickly and has been increasingly used in various domains, particularly chatbots; which are tools trained to have human-like conversations using a process known as natural language processing (NLP) (2023). Chatbots have considerable potential in scientific research, they have the ability to automate data analysis, literature searches, and article writing, which could increase productivity. Such advantages come with a set of challenges to overcome such as issues of accuracy, and ethical concerns, additionally there are ongoing debates regarding authorship and guidelines regulating the use of chatbots in scholarly publication (Al Saad et al., 2022).

As a team of PhD student and supervisor specializing in the field of education and collaborating on several research projects, we became intrigued by the capabilities of ChatGPT and other open source chatbot technologies. We started exchanging knowledge and insights on AI tools and began incorporating them into our research activities. finding them to be not only timesaving but also instrumental in mitigating instances of writer's block. Using chatbots elicited a sense of uncertainty, inducing contemplation regarding whether their use is improving or degrading the quality of our work on one hand, and creating an ethical dilemma whether we should acknowledge their use in our publications or refrain from disclosure on the other hand. Through participation in numerous workshops and conferences over the past year, we have observed a similar prevalent sense of uncertainty within our research community. Senior researchers, namely university professors, have voiced concerns regarding the potential impact of chatbots on the integrity and quality of work produced by junior researchers. Exploring researchers' and academics' attitudes, knowledge and views on the ethics of AI in our research community would allow us to illuminate different viewpoints and examine the overall impact of the dilemma on the community. The broader understanding of the knowledge, attitudes and views on the ethics of AI among senior and junior researchers in the Lebanese University educational researchers' community would highlight

the complexities, contradictions and ethical considerations that surround the use of AI in academic research and could encourage improved communication regarding AI between researchers spanning different generations.

A range of studies have explored attitudes, knowledge, and perspectives on the ethics of AI among the public and the higher education communities as AI has emerged as a significant tool in different domains. Ghotbi and Ho (2021) discuss college students' moral awareness of AI, highlighting concerns about ethical issues such as unemployment, emotional AI, social control, discrimination, inequality, privacy, AI mistakes, malicious AI, and security breaches. The study's main findings identified unemployment as the main ethical concern related to AI. The study suggested that students have limited moral awareness regarding AI technologies and recommends including AI ethics in the curriculum. As for Almaraz-López et al. (2023) comparative study of the attitudes and perceptions of university students in business administration and in management and education towards AI, students expressed a belief that AI will be impactful for their professions, noting that their interest in AI surpasses their knowledge, which lead to the paper's emphasis on the importance of expanding and improving AI education for students to use AI confidently and responsibly in their future professions. Ikkatai et al. (2022) is one of the few studies that considered age as one of the variables related to the attitudes towards AI ethics. It investigated public attitudes towards AI ethics, not the attitudes of students and university instructors in particular. The attitudes were explored through four scenarios highlighting the role of age, gender, and understanding of AI, findings showed that the attitudes varied depending on the scenario, and that age significantly influenced attitudes as older adults are more likely to disagree that the development of AI has a positive impact on the society. Alzahrani (2023) explored the factors that impact the behavior and attitude of students toward the use of AI in higher education, the study found that the perceived risk negatively impacts students' attitudes, while performance expectancy and facilitating conditions positively influenced students' behavioral intention to use AI in education. Ethics of AI in education are discussed in Gartner and Krašna (2023), the study concluded that the understanding of the ethical implications of AI is crucial for its integration into education and educating young individuals is key to societal transformation.

A study on clinical researchers in Saudi Arabia (Sulthan, 2022) concluded that the majority of researchers had a good attitude towards the use of AI in clinical trials, despite their relatively limited knowledge of AI and its uses. Researchers' Knowledge of ChatGPT and other chatbots and

attitudes towards their potential research uses were assessed in Abdelhafiz et al. (2024). The study concluded that thorough regulation is needed for the use of chatbots in academic research in order to create a balance between potential benefits and inherent limitations and risks. Chatbots could be considered as assistants to researchers rather than authors of scientific research, and researchers should receive the proper training to effectively and ethically use chatbots.

In Lebanon, two studies about the knowledge and attitudes of medical students towards AI (Doumat et al., 2022) (Daher et al., 2024) revealed positive attitudes and willingness to learn about AI and to integrate it in the medical field despite a gap in the deep knowledge about AI, they concluded that AI education should be part of the medical school curriculum in order to increase AI acceptance and unlock its potential in advancing medical education.

This literature review underscores that research on attitudes towards AI is increasingly capturing global attention. In contrast, such research remains scarce in Lebanon, where it is primarily concentrated in medical schools due to AI's perceived potential in the medical field, and while it explores knowledge and attitudes, it notably overlooks discussions on ethics. Furthermore, research in this area generally neglects to investigate the potential existence of a generational gap in views on AI between senior and junior researchers, who frequently collaborate on research endeavors.

In response to these research gaps, our study presents two contributions; it extends the literature on AI in Lebanon towards the field of academic research and tests the hypothesis of existence of a generational gap between research instructors and research students. The study investigates the attitude, knowledge and perspectives on the ethics of AI from the perspective of senior researchers in the Lebanese University, namely university instructors, and junior researchers, namely master and PhD students, and how the investigated variables compare among students and instructors.

The study is designed to answer the following research questions.

1. What are researchers' attitudes, basic knowledge, and perspectives on the ethics of AI?
2. How do attitudes, knowledge and perspectives on the ethics of AI compare among senior and junior researchers?

We hypothesize that there may be differences between the attitudes, knowledge, and perspectives of junior and senior researchers. Our postulation is that the long research experience may be a factor of resistance to change and adoption of new tools, and of increased skepticism towards the automation of research practices.

2. Methodology

The type of research design is primarily the descriptive research design as AI is being studied without manipulating variables or establishing cause-and-effect relationships. The study employs a cross-sectional approach, where data is collected at a single point in time, mid-March 2024. Furthermore, the study may incorporate elements of comparative research design, as it seeks to compare attitudes, knowledge, and perspectives between research students and instructors. The study is quantitative and adopts a close-ended Likert scale questionnaire as the research tool.

2.1 Research tool

The questionnaire comprises 23 questions structured as follows: 2 questions on personal information, 6 questions on attitudes towards AI in academic research, 8 questions on knowledge of AI, 6 questions on the ethics of AI use in academic research, and 1 question on the type of discussion held between junior and senior researchers on the use of AI. Each Likert-scale question is provided with five answers: strongly disagree, disagree, neutral, agree and strongly agree. Three questions (6 in Figure 3 - 8 and 9 in Table 2) of the questionnaire were utilized from the published study conducted by Almaraz-López et al. (2023) on AI. The remaining questions were developed by the authors and underwent validation by three instructors affiliated with the Lebanese University. Cronbach's alpha was calculated to test the internal consistency of the questionnaire. The value obtained was 0.8, indicating a good level of reliability. This suggests that the items within the questionnaire are sufficiently correlated and measure the same underlying construct.

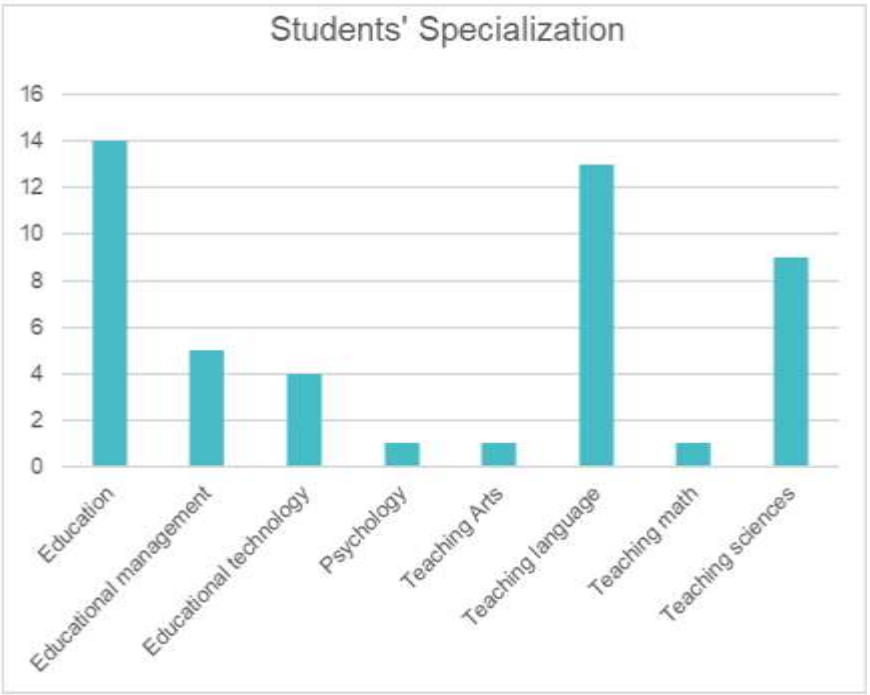
2.2 Sample

Convenience sampling is chosen for its accessibility, utilizing WhatsApp groups linked with academic departments for participant recruitment. The sample comprises 107 participants: 58 research instructors and 49 research students encompassing both PhD and master's students, from the Lebanese University. Research instructors possess experience ranging from 1 to 15 years, spanning across diverse specializations related to education.

Figure 1. Instructors' specializations

Among the research students, 23 are master's students and 24 are PhD students, representing distinct specializations.

Figure 2. Students' specializations



2.3 Result Analysis

Collected responses are exported from Google forms and analyzed using R software. The frequency and percentages of answers for each item in the questionnaire are computed using descriptive statistics. Each answer in the Likert scale is assigned a numeric value; strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5, and values are inverted for negative questions. Means for attitudes and knowledge are calculated based on the assigned numeric values. Inferential statistics techniques, such as t-tests are applied to examine any significant differences between research students and instructors.

2.4 Ethics and limitations

The study adheres to ethical guidelines outlined by the Lebanese University and academic institutions; permission to pass the questionnaire to instructors and students was obtained from the Dean prior to the study, informed consent is obtained from all participants, and they were assured of confidentiality and anonymity. Data is stored securely and accessible only to authorized researchers.

On the study's limitations we can say that the study is limited by its reliance on self-report measures, which may introduce response biases. Additionally, the use of a Likert scale may oversimplify complex attitudes and perspectives.

3. Results

This section presents the findings regarding researchers' attitudes towards AI, their level of basic knowledge about AI, their perspectives on the ethical considerations of AI in academia, and the comparison of these factors between senior and junior researchers.

3.1. Attitudes

To answer the first research question on researchers' attitudes towards AI, means for students, instructors and total means for questions related to the attitude (questions 1 to 5) are summarized in Table 1.

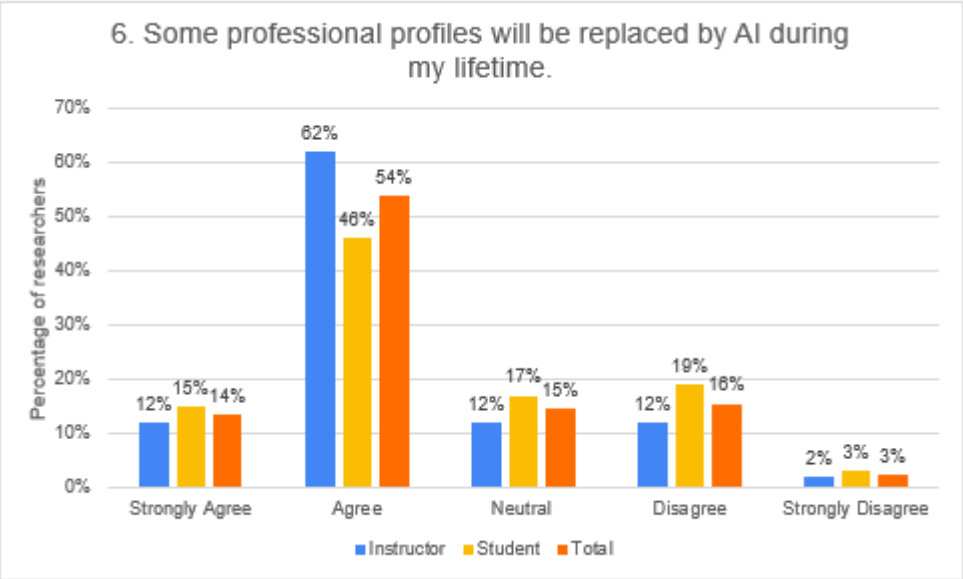
Table 1. Researchers' Mean Scores for Questions about Attitudes Towards AI

Question	Students' mean score	Instructors' mean score	Total mean score
1. AI is an important resource in the educational research field	3.89	3.81	3.84
2. Learning how to use AI will be beneficial for my career	4.31	4.29	4.30
3. All researchers in education (students and PhD holders) should receive a training on AI	4.42	4.36	4.39
4. Using AI improves my research skills	3.85	3.69	3.76
5. Using AI improves the quality of my research	3.79	3.60	3.69
Attitude's score	4.06	3.95	4.00

The mean scores being all closer to 5 than to 1 and having a mean value of 4.00 shows a clear positive attitude towards AI among both students and instructors, the highest scores are for the belief that students and instructors should receive a training on AI and that it is perceived as beneficial for the research career. On the other end, it seems that the least positive views are expressed regarding the role of AI in improving one's research skills.

Question 6 explored perceived AI's impact on the job market from the researchers' point of view. The responses revealed that 68% of researchers agree that AI will replace humans in many professions in the near future.

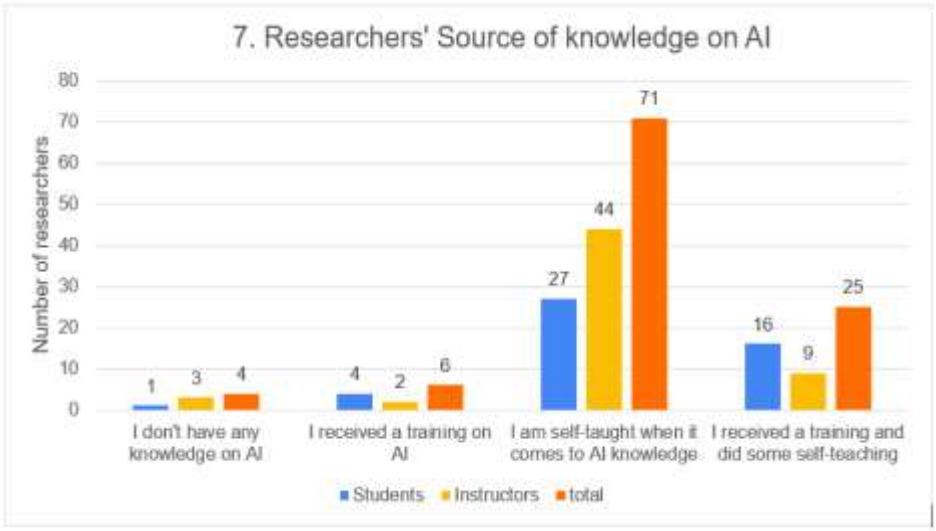
Figure 3. Researchers' Answers to "Some professional profiles will be replaced by AI during my lifetime.



3.2. Knowledge

On the source of knowledge on AI, the findings, illustrated in Figure 4, reveal that most participants are self-taught. Additionally, the data suggests that there's a scarce number of researchers who have received formal training in AI, with this trend being even more pronounced among instructors compared to students.

Figure 4. Researchers' Answers on the source of their Knowledge on AI



Questions 8 to 14 are testing the participants' knowledge of basic concepts on AI, they are not meant to accurately assess the participants' knowledge which logically requires a deeper probing

and a more accurate testing, but they are meant to give a primary idea on the participants' basic knowledge. The mean scores for students, instructors and the total mean scores are represented in Table 2.

Table 2. Researchers' Mean Scores for Questions about Knowledge of AI

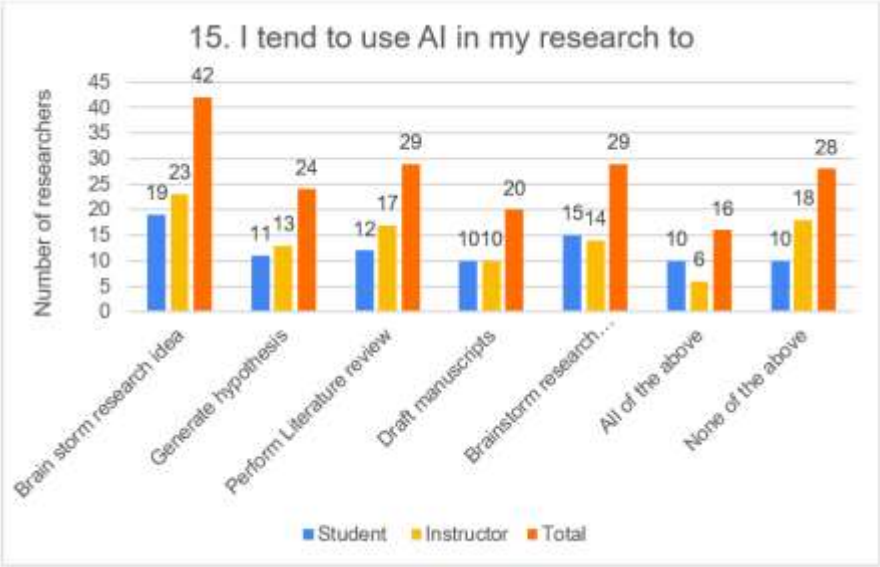
Question	Students' mean score	Instructors' mean score	Total mean score
8. I have an understanding of the basic computational principles of AI	3.58	3.38	3.47
9. I have an understanding of the limitations of AI	3.54	3.71	3.63
10. AI may yield inaccurate outputs	4.23	4.31	4.27
11. Using AI may yield biased outputs (racial or gender stereotyping)	3.71	3.81	3.76
12. Any personal or sensitive information added to a conversation with AI may be used by AI in its later outputs	3.83	3.94	3.90
13. AI might reproduce copyright content without reference to the source	3.73	3.8	3.76
14. AI gives the same answer when asked the same question twice	3.12	3.09	3.10
Total	3.68	3.72	3.70

The findings indicate that researchers generally have a basic knowledge of AI with a mean score for knowledge of 3.70. They acknowledge the potential for AI to produce inaccurate outputs and to utilize personal sensitive data in subsequent outputs. However, their stance regarding whether AI consistently provides the same answer when asked the same question twice appears to be more neutral or lacking in solid understanding.

3.3. Perceptions on ethics

Participants were asked about their typical AI use in their research, as illustrated in Figure 5.

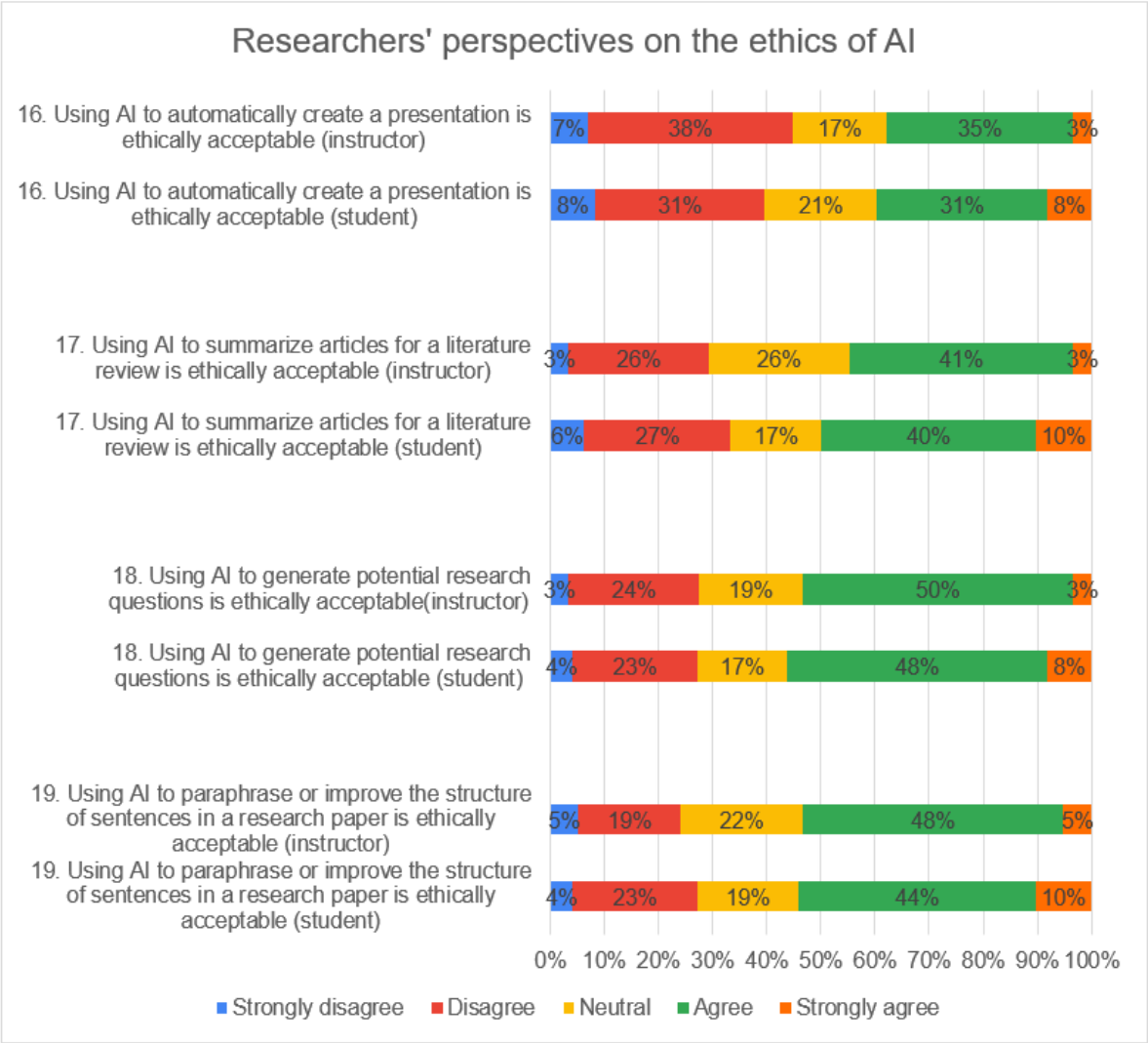
Figure 5. Researchers' Answers on the Research Tasks they Tend to Use AI to Accomplish



26% of the participants reported not using AI for any of the research tasks listed, while 40% reported using AI to brainstorm research ideas, and 19% of participants admitted using AI to draft manuscripts.

Researchers were also asked questions 6 to 19 about specific research tasks, and whether relying on AI to complete these tasks is considered ethical or not, researchers answers are detailed in Figure 6:

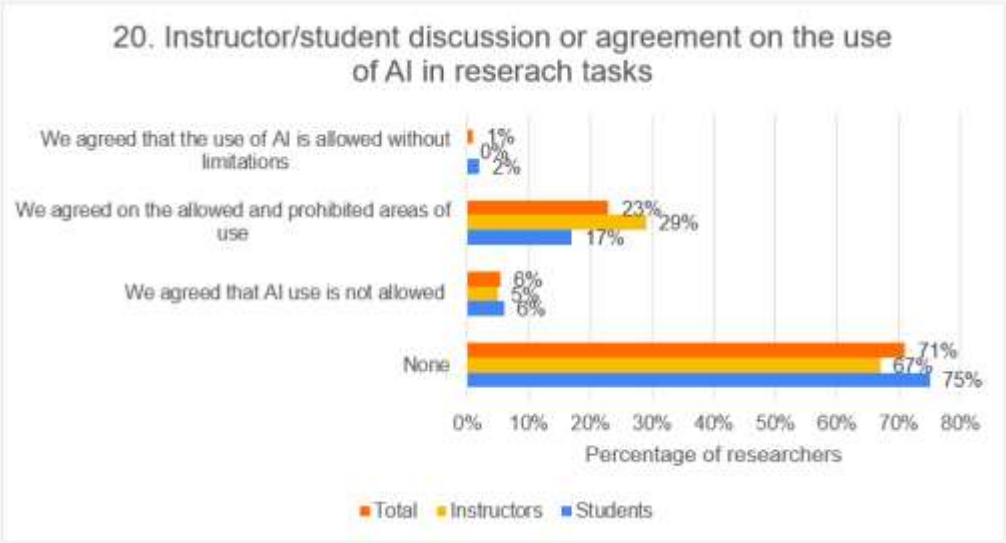
Figure 6. Researchers' perspectives on the ethics of AI



The views on the ethics of AI usage varied widely, ranging from neutral stances to beliefs that AI use is either ethical or unethical. Approximately 19% of participants expressed neutral views on ethics across all items, and more participants were on the positive side of considering the use of AI to accomplish research tasks is ethical.

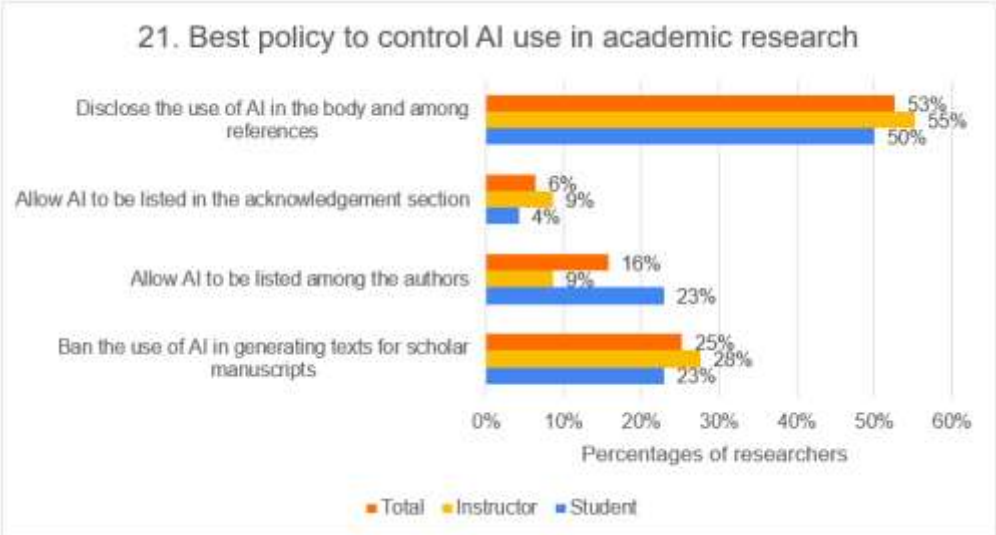
Researchers were asked about the type of communication or agreement they had with each other on the use of AI in their academic research, Figure 7 shows that instructor/student discussions on the use of AI in research were very few among the participants, and only a small percentage of students (17%) and instructors (29%) have set rules for what AI use is allowed and what is not in academic research.

Figure 7. Researchers' Answers on the Discussions or Agreements on the Use of AI in Research



The ethics section ended with question 21 about the participants perspective on the best policy to control AI in research. Only 25% of the participants; 28% of the instructors and 23% of the students agreed to banning the use of AI in research. 75% of the participants agreed to a regulated use of AI in research where 53% agreed that the disclosure of AI use in the body and among references is the best policy.

Figure 8. Researchers' Answers on what they Consider as the Best Policy to Control AI Use in Academic Research



3.4. Instructor/student comparison

On the comparison between students' and researchers' attitudes and knowledge, we noticed a great similarity in the mean scores. It is noticeable that students' scores for attitudes questions (mean=4.06) are slightly higher than those of instructors (mean=3.95), while instructors (mean=3.72) tend to score slightly higher than students (mean=3.68) on knowledge. Independent sample T-tests were performed for knowledge and attitudes items of the questionnaire to explore the significance of these slight differences, results showed that the difference is not significant for all the items tested.

The similarity between the views of students and instructors is also prominent in the ethics part. Students seem to agree more than instructors on the use of AI to summarize articles for the literature review, but independent sample T-tests show that the difference is also not statistically significant.

4. Discussion

Students and instructors have expressed positive attitudes towards AI, which aligns with the findings of several studies that explore attitudes towards AI across various samples and communities. This positive reception underscores the growing acceptance and perceived benefits of AI in academic and research environments. A comprehensive study conducted across the US, UK, Germany, and Switzerland revealed that many scholars hold a favorable view of AI, recognizing it as a tool with the potential to bring transformative benefits across various fields. These scholars emphasize the importance of trustworthy AI principles and highlight AI's potential to revolutionize everyday life by enhancing efficiency and fostering innovation (Gerlich, 2023). Additionally, a survey conducted at Swedish universities involving 6,000 students found that the majority have positive attitudes towards using AI tools, such as chatbots, in their studies. Over one-third of the surveyed students admitted to using these AI tools regularly, indicating a growing acceptance and integration of AI in academic settings (Malmström et al., 2023). However, not all perceptions of AI have been positive. In a 2021 study by Sueyman Aidin, negative perceptions of AI were more prominent than positive ones among participants. This study, conducted before the widespread release of chatbots, highlighted significant concerns about AI (Keleş & Aydın, 2021). Similarly, another study from 2021, involving 6,054 individuals from the US, Australia, Canada,

Germany and the UK revealed that confidence in AI is low, and trust is crucial for acceptance (Gillespie et al., 2021). The introduction of chatbots appears to have shifted public perceptions towards a more positive outlook. Besides the positive attitudes, the study revealed researchers' concern about unemployment, with the majority agreeing that some professions will be replaced by AI in the near future. These findings align with those of Ghotbi and ho (2021) and Almaraz-López et al. (2023).

Our results indicate that 67% of the participants are self-taught in AI, with only a small percentage having received formal training. This underscores the strong self-directed learning skills that researchers at the Lebanese University have developed. The phenomenon of self-learning is likely driven by the novelty and rapid development of AI technologies. Similar findings were observed in a study by Almaraz-López et al., where most students who did not have AI as part of their compulsory curriculum resorted to teaching themselves.

Considering that knowledge about AI is difficult to assess due to the continuous development of new technologies and their expanding applications across various domains, participants' responses revealed that both students and instructors possess a basic understanding of AI. However, noticeable knowledge gaps exist in certain areas. Similar findings were reported in the study by Almaraz-López et al., where participants self-reported knowledge gaps and suggested that all university students should receive formal training in AI. This underscores the need for comprehensive AI education to keep pace with technological advancements.

Only 26% of the participants reported not using AI in their research tasks, indicating that the majority of researchers are incorporating AI into their work. Most participants mentioned using AI for various research tasks, primarily for brainstorming research ideas, a task where AI is still primarily used as a time-saving tool rather than replacing the role of the researcher. Conversely, 36% of participants reported using AI to draft manuscripts, suggesting that in this area, AI is beginning to overshadow the human factor, potentially taking over more substantive aspects of the research process.

Views on the ethics of AI among researchers reflect the broader community's stance on the issue. Some researchers consider the use of AI to accomplish research tasks as ethical, others hold neutral views, and some believe it is unethical. This diversity in opinions is expected given the absence of global guidelines or a consensus on the ethics of AI. A systematic review of global guidelines for AI use by Corrêa et al. (2023) highlighted that existing guidelines often describe ethical values

without providing specific means of implementation or binding regulations. In response to these challenges, UNESCO has developed the "Global AI Ethics and Governance Observatory," a platform for sharing knowledge and best practices on AI ethics. This initiative builds on the "Recommendation on the Ethics of Artificial Intelligence," adopted by 193 countries in 2021, which aims to establish a framework for the ethical use of AI worldwide. This platform and the associated guidelines are crucial steps towards achieving a global consensus and standardized approach to AI ethics.

The disclosure of AI utilization within academic research, both within the body of work and among references, emerged as the preferred method of regulating AI usage, as indicated by the majority of participants. However, alternative viewpoints were expressed, with some advocating for the outright prohibition of AI, while others suggested acknowledging AI contributions in the acknowledgment section or even attributing authorship to them. Hussein et al. (2023) elaborate on the rationale behind each regulatory option. The authors explain that banning the use of AI is not a reasonable option since it cannot be enforced, and it would encourage undisclosed use of AI. Some considered that AIs can be mentioned in acknowledgements as they do not meet authorship criteria, while others consider that AIs don't have free will and cannot be held responsible for their contributions, thus mentioning them as authors or contributors is an inappropriate form of recognition. They concluded that citing them in-text as tools and in references is the most convenient way of regulation of AI use in research. The study describes in detail how the use of AI can be explicitly referred to in-text and in the references, they also recommend recording and submitting the interactions with AI as appendices.

The study revealed a harmonized agreement between both groups of researchers regarding attitudes, knowledge, and perspectives on the ethics of AI. This finding contrasts with Ikkatai et al. (2022), which indicated that age significantly influences attitudes towards AI, with older individuals expressing fewer positive views on its impact. It is important to note that Ikkatai's study did not focus on the academic community, and the older participants were not exposed to the potential benefits of AI, which might explain the discrepancy.

Our hypothesis that long research experience leads to resistance to change, skepticism towards new tools, and increased caution about automation in research was rejected. Both students and instructors, representing different generations with similar interests, showed equal curiosity and

willingness to explore AI to fulfill common needs. Remarkably, they expressed similar views on the ethics of AI, agreeing on what constitutes ethical use of AI in research tasks.

This consensus is particularly surprising given that 71% of participants reported no prior instructor-student discussions or agreements on AI use in research assignments. This raises skepticism about the survey design, suggesting that the questions might have led participants towards specific views. Nevertheless, attitudes, knowledge, and usage of AI were consistent between students and instructors, with no significant generational gap detected.

5. Conclusion

The study revealed a positive attitude towards AI among researchers at the Lebanese University, with the majority actively incorporating AI into their research tasks. Participants reported receiving limited formal training, and they all expressed a strong belief that AI training would be beneficial for their careers. Notably, most participants are self-taught in AI, and possess basic knowledge of AI. Opinions on the ethics of AI varied, with views ranging from considering AI use unethical to completely ethical. A significant finding is that most participants advocate for citing AI as a research tool both in-text and in references as a means to regulate its use in academic research.

Interestingly, the study did not identify a generational gap between senior and junior researchers; their views on AI were homogenous, even though discussions about AI use in research tasks were infrequent. Based on these findings, the study recommends the following:

- Allocating time and resources for continuous AI training within the research community in the Lebanese University to keep pace with the rapid development of AI tools and to address associated risks, such as privacy violations and unintentional plagiarism. Introducing education on AI as a separate course or as part of an existing course is indispensable and should be started as early as the next academic year.
- Encouraging ongoing dialogue between instructors and students regarding the use and reporting of AI in research tasks. Given the shared perspectives among researchers, such discussions would promote integrity and transparency in AI use.
- Developing guidelines for AI use within the Lebanese University's research community, aligned with trends in the international community.

In conclusion, the study highlights the research community's recognition of AI's transformative potential and underscores the need for comprehensive efforts to balance the exploration of AI tools with the maintenance of research standards of authenticity, validity, and reproducibility.

For future research, qualitative methods like interviews or focus groups could provide deeper insights into researchers' perspectives. Additionally, longitudinal studies could track changes in attitudes and knowledge over time.

References

Abdelhafiz, A. S., Ali, A., Maaly, A. M., Ziady, H. H., Sultan, E. A., & Mahgoub, M. A. (2024). Knowledge, perceptions and attitude of researchers towards using chatgpt in research. *Journal of Medical Systems*, *48*(1). https://doi.org/10.1007/s10916-024-02044-4

Al Saad, M. M., Shehadeh, A., Alanazi, S., Alenezi, M., Abu alez, A., Eid, H., Alfaouri, M. S., Aldawsari, S., & Alenezi, R. (2022). Medical students' knowledge and attitude towards Artificial Intelligence: An online survey. *The Open Public Health Journal*, *15*(1). https://doi.org/10.2174/18749445-v15-e2203290

Almaraz-López, C., Almaraz-Menéndez, F., & López-Esteban, C. (2023, June 15). *Comparative study of the attitudes and perceptions of university students in Business Administration and management and in education toward Artificial Intelligence*. MDPI. https://doi.org/10.3390/educsci13060609

Alzahrani, L. (2023). Analyzing students' attitudes and behavior toward Artificial Intelligence Technologies in higher education. *International Journal of Recent Technology and Engineering (IJRTE)*, *11*(6), 65–73. https://doi.org/10.35940/ijrte.f7475.0311623

Amisha, Malik, P., Pathania, M., & Rathaur, V. K. (2019). Overview of artificial intelligence in medicine. *Journal of family medicine and primary care*, *8*(7), 2328–2331. https://doi.org/10.4103/jfmpc.jfmpc_440_19

Corrêa, N. K., Galvão, C., Santos, J. W., Del Pino, C., Pinto, E. P., Barbosa, C., Massmann, D., Mambrini, R., Galvão, L., Terem, E., & de Oliveira, N. (2023). Worldwide AI ethics: A review of 200 guidelines and recommendations for AI Governance. *Patterns*, *4*(10), 100857. https://doi.org/10.1016/j.patter.2023.100857

Doumat, G., Daher, D., Ghanem, N.-N., & Khater, B. (2022). Knowledge and attitudes of medical students in Lebanon toward Artificial Intelligence: A national survey study. *Frontiers in Artificial Intelligence*, *5*. https://doi.org/10.3389/frai.2022.1015418

Daher, O. A., Dabbousi, A. A., Chamroukh, R., Saab, A. Y., Al Ayoubi, A. R., & Salameh, P. (2024). Artificial Intelligence: Knowledge and attitude among Lebanese medical students. *Cureus*. https://doi.org/10.7759/cureus.51466

Gartner, S., & Krašna, M. (2023). Artificial Intelligence in education - ethical framework. *2023 12th Mediterranean Conference on Embedded Computing (MECO)*. https://doi.org/10.1109/meco58584.2023.10155012

Generative AI in research_ Cornell Task Force Report-DEC2023. (2023, December 23). https://it.cornell.edu/sites/default/files/itc-drupal10-files/Generative%20AI%20in%20Research_%20Cornell%20Task%20Force%20Report-Dec2023.pdf

Gerlich, M. (2023). Perceptions and acceptance of Artificial Intelligence: A multi-dimensional study. *Social Sciences*, *12*(9), 502. https://doi.org/10.3390/socsci12090502

Ghotbi, N., & Ho, M. T. (2021). Moral awareness of college students regarding Artificial Intelligence. *Asian Bioethics Review*, *13*(4), 421–433. https://doi.org/10.1007/s41649-021-00182-2

Gillespie, N., Lockey, S., & Curtis, C. (2021). *Trust in Artificial Intelligence: A Five Country Study*. https://doi.org/10.14264/e34bfa3

Hosseini, M., Resnik, D. B., & Holmes, K. (2023). The ethics of disclosing the use of artificial intelligence tools in writing scholarly manuscripts. *Research Ethics*, *19*(4), 449–465. https://doi.org/10.1177/17470161231180449

Ikkatai, Y., Hartwig, T., Takanashi, N., & Yokoyama, H. M. (2022b). Octagon Measurement: Public Attitudes Toward Ai Ethics. *International Journal of Human–Computer Interaction*, *38*(17), 1589–1606. https://doi.org/10.1080/10447318.2021.2009669

An introduction to Ai Chatbots. Drift. (2023, May 8). https://www.drift.com/learn/chatbot/ai-chatbots/

Keleş, P. U., & Aydın, S. (2021). University students' perceptions about Artificial Intelligence. *Shanlax International Journal of Education*, *9*(S1-May), 212–220. https://doi.org/10.34293/education.v9is1-may.4014

Malmström, H., Stöhr, C., & Ou, W. (2023). (rep.). *Chatbots and other AI for learning: A survey of use and views among university students in Sweden*. https://research.chalmers.se/en/publication/535715

Ng, J. Y., Maduranayagam, S. G., Lokker, C., Iorio, A., Haynes, R. B., & Moher, D. (2023). *Attitudes and Perceptions of Medical Researchers towards the Use of Artificial Intelligence Chatbots in the Scientific Process: A Protocol for a Cross-Sectional Survey*. https://doi.org/10.1101/2023.07.26.23293211

Sulthan, N., & Navas, S. (2022). Knowledge and attitude of Artificial Intelligence (AI) technology among clinical researchers in the Kingdom of Saudi Arabia. *International Journal of Health Sciences*, 5937–5947. https://doi.org/10.53730/ijhs.v6ns4.9513

Vasiljeva, T., Kreituss, I., & Lulle, I. (2021, July 21). *Artificial Intelligence: The attitude of the public and representatives of various industries*. MDPI. https://www.mdpi.com/1911-8074/14/8/339