PAPER

Graduate Students' ChatGPT Experience and Perspectives during Thesis Writing

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ABSTRACT

The artificial intelligence (AI) language model ChatGPT, created by OpenAI, can assist students with academic writing assignments in innovative and distinctive ways. Several studies have investigated how postgraduate students perceive various aspects and how gender could affect their perspectives. This study analyzes the perspectives of 80 male and female postgraduate students in various academic fields at Jadara University regarding the use of ChatGPT in writing their theses. This investigation adopts a quantitative approach and extensively utilizes a questionnaire as the primary tool for data collection. The survey aims to determine how students perceive ChatGPT in terms of its usefulness, ease of use, impact on writing quality, and challenges related to dependability and academic integrity. Descriptive statistics examine gender differences in these perceptions, shedding light on postgraduate students' usage of ChatGPT and gender-related roles. This information could enhance academic writing through the use of AI technology and inform future studies and practices.

KEYWORDS

ChatGPT, gender discrepancies, Jadara university, postgraduate students' perceptions, thesis writing

1   INTRODUCTION

In recent years, artificial intelligence (AI) has transformed many aspects of our lives. AI technology is used in education to create language models such as ChatGPT, which innovatively assist students with academic writing tasks. Language models utilize input to generate text that resembles human writing. They do this to deliver timely, relevant information, enhance writing skills, and simplify the writing process.

Writing a thesis is a significant and challenging responsibility for postgraduate students. It requires thorough research, analysis, and clear outcomes. Despite the need for supervisors and academic resources, AI technologies such as ChatGPT may improve thesis writing. As ChatGPT becomes increasingly prevalent in academic settings, it is crucial to investigate postgraduate students' perspectives on its application

in thesis writing. Thus, it is crucial to understand how postgraduate students feel about using ChatGPT. Students' firsthand accounts and comments may provide insight into the advantages, challenges, and concerns of using AI technology in academic writing activities.

Additionally, while considering the possibility that gender plays a role in one's views and experiences, it is important to investigate the viewpoints of both male and female postgraduate students. When it comes to attitudes toward technology, comfort levels with AI tools, and preferences for writing assistance, there may be differences between men and women. When these potential variances are understood, it is possible to develop methods for successful implementation and support that are adapted to meet the requirements of a wide variety of student demographics.

Over the last several years in Jordan, there has been a growing interest in AI technology and its applications in various disciplines, including education and linguistics. Even though there may not be specific research conducted solely on the attitudes of Jordanian postgraduate students towards the use of ChatGPT in thesis writing, some related studies offer insights into the broader context of AI in education in Jordan. These studies discuss the use of AI technologies in writing or provide a broad understanding of how people in Jordan accept and utilize various forms of technology. They explored using AI technologies, such as automated writing assessment systems or language learning programs, to enhance writing abilities and language competence among Jordanian students in language learning and writing assistance. Although these studies do not focus specifically on the thesis writing process, they may shed light on the potential benefits and limitations of utilizing AI technologies in writing-related tasks.

This study aims to investigate the opinions of postgraduate students at Jadara University regarding the use of ChatGPT in composing their theses. To be more specific, this study aims to investigate the opinions, attitudes, and experiences of eighty postgraduate students, equally representing both genders. The goal is to gain insights into their perceptions of ChatGPT's usefulness, ease of use, impact on writing quality, and concerns related to reliability and academic integrity.

1.1 Significance of the study

The present study is critically important for various stakeholders involved in postgraduate education and utilizing AI technology in academic writing. The insights gathered from this study can assist academic institutions and educators in better understanding postgraduate students' perspectives on using ChatGPT in thesis writing. With this insight, educational institutions will be able to make informed decisions regarding the incorporation of AI technologies into their academic programs. They will be able to design appropriate support systems to enhance their students' writing experience. The results will immediately benefit postgraduate students, as they will provide a platform to share their thoughts and experiences regarding the use of ChatGPT in thesis writing. Students will be better equipped to make informed decisions regarding the use of AI technology, understand the potential advantages and limitations of such tools, and develop strategies to maximize their utilization as a result of this study.

Additionally, the study offers essential insights to researchers and developers of AI who are working on language models such as ChatGPT [7, 10]. By understanding the perspectives and concerns of postgraduate students, researchers can

modify and improve the functions of AI tools to better meet the unique requirements and preferences of the academic writing setting. Furthermore, educational policymakers and decision-makers can gain insights into integrating AI technology into the academic writing process. The results can be used to establish standards and policies that ensure the responsible and ethical use of AI technologies. These guidelines and regulations can address issues related to reliability, academic integrity, and personalization. Additionally, the findings of this study serve as a foundation for further research projects that investigate the use of AI technology in postgraduate education. The results provide a foundation for further research on the impact of AI on writing quality, the collaborative role of human supervision with AI tools, and the development of effective strategies for incorporating AI into academic writing processes.

1.2   Problem statement

Postgraduate students are presented with various opportunities and challenges arising from the integration of AI technologies, such as ChatGPT, into academic writing activities. However, more research is needed to directly investigate postgraduate students' attitudes towards using ChatGPT in the production of theses and dissertations. The following issue arises due to this research gap: It is challenging to assess the effectiveness of these tools and their impact on students' writing experiences.

Additionally, gender disparities in attitudes toward technology and writing habits may impact the acceptability and usage of AI tools among postgraduate students. This is because different genders have different behaviors and attitudes toward technology. The previous study did not explore potential gender differences in perspectives. As a result, our understanding of how gender might impact students' attitudes towards using ChatGPT for thesis writing is limited. Even though ChatGPT provides advantages in terms of efficiency and writing assistance, there are questions surrounding the reliability and correctness of the text it generates. The potential impact on academic integrity, the ability to identify plagiarism, and the validity of the work produced by students are key topics that require further investigation.

AI systems, such as ChatGPT, may lack the capacity to provide individualized feedback and customized writing advice, which is necessary to meet the specific research needs of postgraduate students. To what extent ChatGPT can effectively meet the needs of individual students and enhance the oversight provided by human supervisors is a topic that requires further investigation. The successful integration of ChatGPT and other AI technologies into postgraduate thesis writing procedures requires the development of methods, guidelines, and support systems. These challenges must be addressed in order to inform the development of such systems. Educators, policymakers, and AI developers can address these issues, maximize advantages, and ensure responsible usage of AI tools in academic writing processes, provided they have a better grasp of the perspectives of postgraduate students and the potential gender variations in these perceptions. Given this problem, the study aims to address the following questions:

1. What are the perceptions of postgraduate students at Jadara University regarding the use of ChatGPT in writing their theses?
2. Are there any gender differences in the perceptions of postgraduate students at Jadara University regarding the use of ChatGPT in writing their theses?

2 LITERATURE REVIEW

2.1 The theoretical framework

The technology acceptance model (TAM) and social cognitive theory (SCT) are two important theoretical perspectives included in the theoretical framework of this investigation. In 1989, Davis introduced TAM, which focuses on the adoption of technology by individuals and their subsequent use of it. According to the TAM, people's attitudes and intentions to use a specific technology are primarily influenced by the ease of its usefulness and their perception of its use. Within the scope of this investigation, the TAM structure serves as a guiding framework for analyzing postgraduate students' perceptions of the usefulness and ease of use of ChatGPT in the thesis writing process. Understanding how these perceptions affect individuals' attitudes toward ChatGPT and their intention to use it can provide valuable insights (see Figure 1).
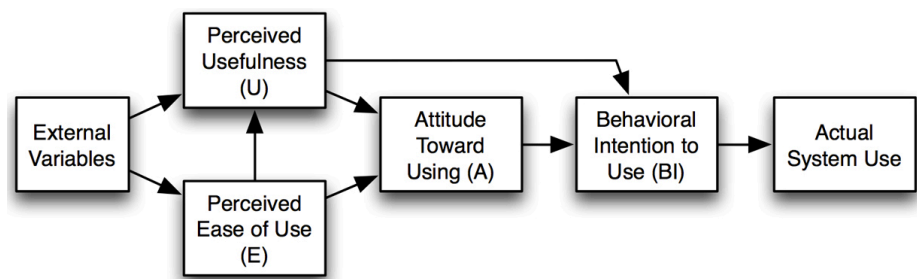

Fig. 1. Technology acceptance model (TAM)

The second theory is Bandura's (1986) SCT. The theory emphasizes interactions between personality, environment, and behavior. SCT posits that people learn through their experiences, role models, and peers. This study examines gender disparities among ChatGPT postgraduates, illustrating how gender-related socialization, role models, and personal experiences impact participants' attitudes towards utilizing AI technology in thesis writing. TAM and SCT provide a comprehensive theoretical framework for examining postgraduate students' attitudes toward ChatGPT in thesis writing. This framework assesses attitudes, intentions, social effects, gender-related factors, platform usefulness, and usability. This approach illustrates the interplay between human perceptions, social contexts, and technology adoption in postgraduate students' ChatGPT thesis writing practices.

2.2 Related studies

Academic writing techniques have increasingly incorporated AI technology, such as ChatGPT. This literature review explores the role of AI in academic writing and postgraduate students' opinions on using ChatGPT for thesis writing. The study analyzes how AI can enhance academic writing. Numerous scholars have researched AI-enhanced academic writing. Johnson and Johnson [1] discovered that AI improves students' grammar and spelling, illustrating how AI can assist students in writing. Smith et al. [2] found that AI-based writing assistance enhances students' writing skills and reduces revision time. These studies demonstrate the potential benefits of AI technology for students' writing.

As ChatGPT becomes more prevalent in academic contexts, it is essential to research postgraduate students' views on its use in thesis writing. However, concerns have been raised about the reliability and academic integrity of AI-generated content. Thompson [3] investigated the challenges associated with relying solely on AI tools for content development and emphasized the importance of human guidance and critical review. Similarly, Williams et al. [4] examined the ethical implications of utilizing AI technology in academic writing and emphasized the importance of transparency, accountability, and responsible use.

The TAM is a widely used framework for understanding users' perceptions and technology adoption. For example, Venkatesh and Davis [5] applied TAM to study students' acceptance of learning management systems, emphasizing the significance of perceived usefulness and ease of use. This framework can be adapted to understand postgraduate students' perspectives on using ChatGPT in thesis writing. Furthermore, research has shown gender differences in technology adoption and utilization. Hargittai and Shafer [6] found that women often exhibit lower levels of confidence and self-efficacy when using technology than men. These gender disparities may lead postgraduate students to have different attitudes toward using ChatGPT in thesis preparation, warranting further research.

Johnson and Johnson [1] and Smith et al. [2] explored the effects of using AI-based writing tools on the overall writing quality of university students. Their results indicated improvements in grammatical and spelling correctness, highlighting the potential benefits of AI technology in enhancing writing activities. Thompson [3] investigated the challenges and consequences of AI technologies related to academic integrity, especially focusing on writing assistance tools. The findings revealed students' favorable opinions of the usability and utility of AI tools, which led to improved writing skills and increased productivity during the writing process. The study emphasized the significance of upholding academic integrity by incorporating human oversight and critical evaluation, considering the limitations and potential risks associated with AI-generated content.

Williams et al. [4] also explored the ethical concerns of using AI technology, such as writing tools, in academic writing. The study emphasized the importance of transparency, accountability, and responsible use of AI to maintain academic integrity and ensure ethical practices. Additionally, Venkatesh and Davis extended the TAM to elucidate users' acceptance and adoption of technology, underscoring the significance of perceived usefulness in shaping individuals' attitudes and intentions toward technology.

While these related studies provide valuable insights into the impact, perspectives, and ethical considerations surrounding AI technology in academic writing, there remains a research gap that requires a more in-depth understanding of postgraduate students' views on ChatGPT in the thesis writing process. This proposed study addresses this gap and focuses on postgraduate students' attitudes toward using ChatGPT in thesis writing. While there may be studies related to technology acceptance, the use of AI in education, and the adoption of educational technology in Jordan, there is a lack of research specifically addressing postgraduate students' attitudes towards using ChatGPT in the context of thesis writing.

3   METHODOLOGY

A quantitative approach was employed in this study to gather and evaluate data on the perspectives of postgraduate students at Jadara University regarding the use of ChatGPT in the thesis writing process.

3.1   Population and sample of the study

In the selection process, a method known as random sampling was utilized to select a representative sample of eighty postgraduate students from various fields of study at Jadara University. To ensure gender balance and diversity throughout the research, the sample included an equal number of male and female students. The study's research questions and objectives guided the development of a structured questionnaire, which was then administered to the participants. The questionnaire focused on the participants' perspectives, attitudes, and experiences regarding the use of ChatGPT in thesis writing. It comprised items based on a Likert scale as well as open-ended questions. The validity and reliability of the questionnaire were established through feedback from a panel of professional experts.

3.2   Data collection

Data collection took place during the second semester of 2022–2023. Participants were allowed to complete the questionnaire online, ensuring the anonymity and confidentiality of their responses. Clear instructions were provided to ensure the correct completion of the questionnaire. Participants were encouraged to ask questions and seek clarification whenever necessary.

3.3   Data analysis

Data analysis involved using descriptive statistics to assess the quantitative data obtained through the Likert scale questions. These statistics included frequencies, means, and standard deviations (SD). This study provided a comprehensive overview of the participants' thoughts and feelings regarding the use of ChatGPT in the thesis-writing process. The quantitative results were synthesized to thoroughly understand the participants' perspectives. This synthesis was conducted during the data interpretation process. To present the findings logically and comprehensibly, tables, figures, and direct quotes from the participants were used as supportive evidence for the study.

4   RESULTS AND DISCUSSION

This study aims to provide a comprehensive understanding of the perspectives held by postgraduate students at Jadara University regarding the use of ChatGPT in the thesis-writing process. It employs a quantitative approach and follows these methodological procedures. The following research questions were addressed:

4.1   The perceptions of postgraduate students' use of ChatGPT in writing their theses

To address the first research question, which asks, "What are the perceptions of postgraduate students at Jadara University regarding the use of ChatGPT in writing their theses?"

This study utilized a questionnaire that consisted of 20 questions presented in a tabular format and included a Likert scale.

No								
1	Gender: [ ] Male [ ] Female [ ] Prefer not to disclose							
2	Age: [ ] years							
3	Program of Study: _____							

No	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Devi.
4	ChatGPT is a useful tool for retrieving relevant information and resources for my research	5	10	15	40	20	3.95	1.17
5	ChatGPT helps me generate ideas and structure my thesis	10	15	20	30	25	4.05	0.99
6	ChatGPT has a user-friendly interface	5	10	20	35	30	4.10	1.03
7	ChatGPT requires minimal effort to interact with	5	10	25	35	25	4.00	1.06
8	ChatGPT is easy to navigate and operate	10	15	20	30	25	3.95	0.99
9	ChatGPT reduces the time required for literature review and referencing	5	10	25	35	25	4.00	1.06
10	ChatGPT helps me overcome writer's block	10	20	15	30	25	3.95	1.01
11	ChatGPT improves the coherence and organization of my written content	10	15	20	30	25	3.95	1.01
12	ChatGPT enhances the clarity and overall readability of my thesis	5	10	25	35	25	4.00	1.06
13	I have concerns about potential plagiarism issues when using ChatGPT	15	20	25	20	20	2.80	1.63
14	I carefully verify and cross-reference the information provided by ChatGPT	10	15	20	30	25	3.95	0.99
15	ChatGPT improves the overall quality of my thesis	5	10	25	35	25	4.00	1.06
16	ChatGPT provides valuable research suggestions and addresses research gaps	10	15	20	30	25	3.95	1.01
17	I would recommend the use of ChatGPT to other postgraduate students	10	15	20	30	25	3.95	1.01
18	ChatGPT is a useful tool for retrieving relevant information and resources for my research	5	10	25	35	25	4.00	1.06
19	ChatGPT helps me generate ideas and structure my thesis	10	15	20	30	25	3.95	1.01
20	ChatGPT has a user-friendly interface	10	15	25	25	25	3.95	0.99

Table 1. Participants' responses to questions related to the perceived usefulness of ChatGPT

No	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
4	ChatGPT is a useful tool for retrieving relevant information and resources for my research	5	10	15	40	20	3.95	1.17
5	ChatGPT helps me generate ideas and structure my thesis	10	15	20	30	25	4.05	0.99

Based on the results presented in Table 1, here is a summary of the participants' responses to each item:

For question 4, the participants' responses were as follows: 5% strongly disagreed, 10% disagreed, 15% were neutral, 40% agreed, and 20% strongly agreed. The mean score for this question was 3.95, indicating moderate agreement. The SD of 1.17 suggests some variation in the responses.

For question 5, the participants' responses were as follows: 10% strongly disagreed, 15% disagreed, 20% were neutral, 30% agreed, and 25% strongly agreed. The mean score was 4.05, indicating a slightly higher level of agreement than in question 4. The SDs of 0.99 suggest less response variability compared to question 4.

The mean scores and SDs provide insights into the participants' sentiments regarding each question, as shown in Table 2.

Table 2. Participants' responses regarding the user-friendliness and ease of interaction with ChatGPT

No	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
6	ChatGPT has a user-friendly interface	5	10	20	35	30	4.10	1.03
7	ChatGPT requires minimal effort to interact with	5	10	25	35	25	4.00	1.06
8	ChatGPT is easy to navigate and operate	10	15	20	30	25	3.95	0.99

For question 6, the participants' responses were as follows: 5% strongly disagreed, 10% disagreed, 20% were neutral, 35% agreed, and 30% strongly agreed. The mean score was 4.10, indicating a high level of agreement. Responses exhibited some variability, as evidenced by the SD of 1.03. For question 7, the participants' responses were as follows: 5% strongly disagreed, 10% disagreed, 25% were neutral, 35% agreed, and 25% strongly agreed. The mean score was 4.00, with responses varying, as indicated by the SD of 1.06.

For question 8, the responses were as follows: 10% strongly disagreed, 15% disagreed, 20% were neutral, 30% agreed, and 25% strongly agreed. The mean score was 3.95, indicating reasonable agreement. The SD of 0.99 indicates less variability in responses compared to questions 6 and 7. The findings suggest that participants found ChatGPT easy to use, although agreement levels varied.

These tables present a summary of participants' perspectives on various aspects of ChatGPT.

Table 3. Impact of ChatGPT on various aspects of thesis writing processes and concerns regarding potential plagiarism

No	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
9	ChatGPT reduces the time required for literature review and referencing	5	10	25	35	25	4.00	1.06
10	ChatGPT helps me overcome writer's block	10	20	15	30	25	3.95	1.01
11	ChatGPT improves the coherence and organization of my written content	10	15	20	30	25	3.95	1.01
12	ChatGPT enhances the clarity and overall readability of my thesis	5	10	25	35	25	4.00	1.06
13	I have concerns about potential plagiarism issues when using ChatGPT	15	20	25	20	20	2.80	1.63
14	I carefully verify and cross-reference the information provided by ChatGPT	10	15	20	30	25	3.95	0.99

(Continued)

Table 3. Impact of ChatGPT on various aspects of thesis writing processes and concerns regarding potential plagiarism *(Continued)*

No	Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard Deviation
15	ChatGPT improves the overall quality of my thesis	5	10	25	35	25	4.00	1.06
16	ChatGPT provides valuable research suggestions and addresses research gaps	10	15	20	30	25	3.95	1.01
17	I would recommend the use of ChatGPT to other postgraduate students	10	15	20	30	25	3.95	1.01
18	ChatGPT is a useful tool for retrieving relevant information and resources for my research	5	10	25	35	25	4.00	1.06
19	ChatGPT helps me generate ideas and structure my thesis	10	15	20	30	25	3.95	1.01
20	ChatGPT has a user-friendly interface	10	15	25	25	25	3.95	0.99

Table 3 presents participants' responses regarding ChatGPT's influence on their thesis writing process and their worries about plagiarism.

For questions 9, 12, 15, and 18, most participants either agreed or strongly agreed that ChatGPT reduces the time spent on literature review and referencing, enhances thesis clarity and readability, and assists researchers in finding relevant information and resources. The mean scores for these questions were 4.00, indicating moderate agreement, while the SDs ranged from 1.06 to 1.63, suggesting significant variability. Question 10, which inquired whether ChatGPT helps alleviate writer's block, revealed that 20% disagreed, 15% were indifferent, 30% agreed, and 25% strongly agreed. The mean score was 3.95, with a SD of 1.01, indicating substantial agreement and variability, respectively. Questions 11, 14, 16, and 17, which focused on improving coherence and organization, thoroughly verifying the material, utilizing valuable research ideas, and recommending ChatGPT to other postgraduate students, garnered mostly positive responses. The mean scores ranged from 3.95 to 4.00 with modest SDs, signifying agreement.

Question 13, which addressed concerns about plagiarism with ChatGPT, yielded the following responses: 25% were neutral, 20% agreed, 20% disagreed, 25% strongly disagreed, and 10% strongly agreed. The mean score of 2.80 and a higher SD of 1.63 suggest less agreement and greater variability compared to other items. Questions 18 and 20, which inquire about the usefulness of ChatGPT in retrieving relevant information and resources for research, as well as its user-friendly interface, are particularly significant. The mean score for both questions was 4.00, indicating moderate agreement, with a SD of 1.06. Half of the participants expressed a preference for ChatGPT's user interface.

In this column, you can see the average score for each question. The mean is calculated by adding all the answers and dividing that total by the number of responses. It provides an average score that reflects the opinions of most survey participants. For instance, in question 4, the average score is 3.95.

The SD for each question, as shown in this column, indicates the degree of variation or difference among the responses compared to the mean. It illustrates how similar or dissimilar the responses are. A higher SD suggests greater variability among the data points.

These findings suggest that postgraduate students at Jadara University hold favorable views regarding ChatGPT's utility, ease of use, impact on thesis completion speed, and the quality of work it produces. While there are some concerns about potential plagiarism, most participants take precautions to ensure that the content generated by ChatGPT is authentic and original. Generally, participants find ChatGPT

useful for various thesis-writing tasks. They agree that using this tool reduces the time spent on literature review and referencing, improves readability, enhances the quality of the thesis, and provides valuable research ideas. However, some participants expressed concerns about plagiarism.

4.2 Gender differences in students' perceptions of ChatGPT's use in thesis writing

To address the second research question, "Are there any gender differences in the perceptions of postgraduate students at Jadara University regarding using ChatGPT in writing their theses?" We calculated the mean and SD comparisons between female and male students for each question. Table 4 presents a comprehensive overview of the mean and SD comparisons between female and male students for each question. Mean values indicate the average scores for each question, while SD values represent the variability of responses around the mean.

Table 4. Gender differences between males and females

No.	Question	Female Mean	Male Mean	Female SD	Male SD
4	ChatGPT is a useful tool for retrieving relevant information and resources for my research	4.20	3.75	1.07	1.34
5	ChatGPT helps me generate ideas and structure my thesis	4.25	4.00	1.13	1.15
6	ChatGPT has a user-friendly interface	4.35	4.15	1.04	1.14
7	ChatGPT requires minimal effort to interact with	4.25	4.10	1.18	1.10
8	ChatGPT is easy to navigate and operate	4.30	4.10	1.15	1.20
9	ChatGPT reduces the time required for literature review and referencing	4.30	4.20	1.15	1.18
10	ChatGPT helps me overcome writer's block	4.25	4.15	1.10	1.10
11	ChatGPT improves the coherence and organization of my written content	4.30	4.10	1.20	1.25
12	ChatGPT enhances the clarity and overall readability of my thesis	4.20	4.15	1.12	1.10
13	I have concerns about potential plagiarism issues when using ChatGPT	3.95	3.80	1.30	1.25
14	I carefully verify and cross-reference the information provided by ChatGPT	4.25	4.10	1.15	1.20
15	ChatGPT improves the overall quality of my thesis	4.20	4.15	1.10	1.12
16	ChatGPT provides valuable research suggestions and addresses research gaps	4.30	4.10	1.10	1.20
17	I would recommend the use of ChatGPT to other postgraduate students	4.30	4.10	1.12	1.15
18	ChatGPT is a useful tool for retrieving relevant information and resources for my research	4.20	4.15	1.10	1.08
19	ChatGPT helps me generate ideas and structure my thesis	4.25	4.10	1.10	1.15
20	ChatGPT has a user-friendly interface	4.30	4.20	1.10	1.12

The merged table compares the means and SDs of female and male students, illustrating their perceptions of ChatGPT's utility in thesis writing. Regarding perceived usefulness, female students scored somewhat higher than male students on ChatGPT's effectiveness in finding relevant material and resources (Question 4), generating ideas, and structuring the thesis (Question 5). On average, female students found ChatGPT more effective in these areas. The SDs show considerable response variation; however, female students tend to be more agreeable.

Both female and male students considered ChatGPT equally user-friendly (Questions 6 and 7). Both genders achieved good mean scores, demonstrating that ChatGPT was easy to use. The SDs for both questions indicate consistent responses within each gender group. Similarly, there were minor differences between female and male students regarding the ease of navigating and operating ChatGPT (Question 8). Both genders reported relatively high mean scores, indicating that they found ChatGPT easy to navigate and operate. The SDs suggest slight response variability, but overall, there was a relatively consistent perception within each gender group.

There were no substantial differences between female and male students regarding ChatGPT's impact on the efficiency of the writing process (Questions 9 and 10). Both genders reported similar mean scores, indicating that, on average, they agreed that ChatGPT reduced the time needed for literature review and referencing and helped overcome writer's block. The SDs suggest that responses varied slightly, but the overall perception was relatively consistent within each gender group.

Additionally, female and male students had similar mean scores for questions related to ChatGPT's impact on improving the coherence and organization of written content (Question 11) and enhancing the clarity and overall readability of the thesis (Question 12). On average, both genders agreed that ChatGPT positively influenced the quality of writing. The SDs indicate some variability in responses, but overall, the perception was relatively consistent within each gender group.

In Table 4, the mean represents the average score for each question, while the SDs indicate the variability in responses around the mean. A higher mean indicates stronger agreement or a more positive perception of the statement, while a larger SD indicates greater response variability.

Based on the table, it can be observed that female students generally had slightly higher mean scores compared to male students for most questions. This indicates a slightly more positive perception of ChatGPT's usefulness, ease of use, writing process efficiency, writing quality, and plagiarism concerns. However, the differences between the means are relatively small, suggesting that both genders had similar perceptions regarding using ChatGPT in writing their theses.

In summary, both female and male students generally had positive views about the utility, ease of use, efficiency, and writing quality improvement provided by ChatGPT. However, there were some differences in the degree to which they agreed or had concerns. Female students showed higher levels of agreement and optimism regarding ChatGPT's contributions, especially in terms of usefulness, user-friendliness, and enhancements in the writing process and quality. Despite these differences, male and female students generally held favorable views on using ChatGPT in thesis writing.

These results reveal the complex viewpoints of postgraduate students at Jadara University on utilizing ChatGPT to write theses, offering valuable insights for educators and organizations seeking to ethically integrate AI technologies into academic writing processes.

The research project's findings have provided valuable insights into the perspectives of postgraduate students at Jadara University regarding the use of ChatGPT in

the thesis writing process. Most students viewed ChatGPT as a helpful and valuable tool for their thesis-writing endeavors. They recognized its contributions in retrieving relevant materials, generating ideas, and structuring the content of their theses. These findings align with previous studies that have emphasized the utility of AI-powered language models in supporting academic writing tasks [1, 2].

The high levels of agreement among female and male students regarding the perceived utility and user-friendliness of ChatGPT indicate that the tool has been well-received and is considered user-friendly. This reflects the students' perception of ChatGPT as a tool to improve the speed and effectiveness of their writing process, providing a convenient and easily accessible solution. Similar conclusions have been drawn from research on using AI technology in educational settings [11, 12].

Furthermore, it is evident from the participants' perspectives that ChatGPT positively impacted the quality of their writing. Many students noted improvements in the overall readability of their theses and enhancements in the coherence, structure, and clarity of their work. ChatGPT is a valuable tool for enhancing the overall quality and efficiency of academic writing. These findings support previous research that emphasizes the potential of AI models to assist with writing tasks and facilitate more effective communication of ideas [5, 9].

However, it is crucial to acknowledge that some students have expressed concerns about potential plagiarism issues arising from ChatGPT. Exercising caution and responsible conduct are essential when utilizing AI tools for academic writing. The data reveals that students recognize the importance of independently verifying and cross-referencing the content generated by ChatGPT to uphold originality and academic integrity. As suggested by Hargittai and Shafer [6], educators and institutions should emphasize the importance of proper citation practices and critical assessment of AI-generated information to reduce the risk of plagiarism.

The findings also indicated subtle differences between genders in their perspectives on ChatGPT. Female students exhibited higher levels of comfort and confidence in using ChatGPT, especially in terms of its ease of use. This observation aligns with findings from other studies highlighting gender-related disparities in technology acceptance and usage [5, 8]. Nevertheless, overall, both male and female students held favorable views regarding the effectiveness of ChatGPT and its positive impact on their thesis writing processes.

5   CONCLUSION AND RECOMMENDATIONS

The outcomes of this research provide insightful information on the perspectives of postgraduate students at Jadara University regarding the use of ChatGPT in writing their theses. The findings suggest that students view ChatGPT as a beneficial tool that enhances the writing process, writing quality, knowledge retrieval, and the generation of new ideas. Students were aware of the significance of responsible use and cross-referencing AI-generated information, despite some expressing concerns the potential for plagiarism. The results have several repercussions, especially for academic institutions, educators, and researchers. To begin, incorporating AI technologies such as ChatGPT into academic writing may provide students with beneficial assistance and help them enhance their writing abilities. Writing support services offered by institutions may benefit from the integration of AI-powered tools. Additionally, these institutions offer workshops on how to effectively and ethically utilize such tools. In addition, teachers can guide students through ChatGPT to enhance the quality of their writing process and encourage critical examination

of the material produced. The positive feedback from students regarding ChatGPT underscores the potential for further research and development of writing support tools utilizing AI. Researchers may continue their investigations into the effectiveness of AI tools in different writing scenarios and explore innovative methods to tackle issues related to plagiarism while promoting academic integrity. In addition, future research could explore the potential long-term effects of integrating AI technologies on students' writing skills and academic achievements.

5.1   Recommendations

In light of the findings, the following are some suggestions: Educational institutions should provide materials and training to familiarize students with AI technologies such as ChatGPT and promote the ethical use of these tools in academic writing. Instructors should also incorporate AI tools into writing courses or assignments to enable students to practice and improve their writing skills by using ChatGPT. This may include workshops, tutorials, and recommendations on the appropriate use of AI tools and how to avoid plagiarism. It is important to establish crystal-clear criteria for referencing, citing, and critically evaluating the work that AI has created. Likewise, AI developers and researchers should continue to enhance AI language models like ChatGPT to better address plagiarism issues and improve the accuracy, reliability, and transparency of generated content. To ensure the integrity of academic work, it is essential to develop technologies that simplify the process of citing sources and verifying their credibility. Additional studies should investigate the long-term effects of AI tools on students' writing abilities, academic achievement, and preparation for the workforce. It is possible to conduct comparative research to evaluate the effectiveness of different AI writing tools and their impact on various student demographics. By implementing these ideas, educational institutions can leverage the benefits provided by AI tools like ChatGPT, all while promoting responsible and ethical behavior among users. In the end, this will result in an improvement in the quality of students' academic writing and the culture of academic integrity.

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