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Pre-University Students' Perception in Using Generative AI: A Study at a Malaysian Private University

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Abstract

This study aims to understand the students' perception in using generative AI among pre-university students. A questionnaire was distributed to 153 respondents and descriptive statistics was used to analyse the data. Technology Acceptance Model (TAM) is referred as the main framework for the study. The findings indicate that the perception of pre-university students towards generative AI technology is affected by the benefits and the challenges in using the technology. It is also suggested that more studies should be done to investigate the perception on the use of generative AI in the education field. Further research is needed to provide insights for future research and education policy development on the use of generative AI. Overall, this paper serves as a foundation for future studies and strategies in using generative AI through the integration in teaching and learning among Malaysian university students.

Keywords: Generative Artificial Intelligence, Technology Acceptance Model, User Perception, Pre-University, Higher Education

Introduction

The rapid advancements in artificial intelligence (AI) have significantly transformed various industries, and the field of education is no exception to this trend. In recent times, there has been a notable emergence of AI-powered tools that show promising potential in revolutionizing the conventional teaching and learning approaches (Mohamed, 2024). Among these cutting-edge tools available in the realm of contemporary AI technologies, generative AI has witnessed considerable growth, with a market of approximately $200 billion in 2023 and predicted to expand to more than 1.8 trillion dollars by 2030 (Thormundsson, 2024).

With an array of advantages offered, the adoption of generative AI should be embraced for different needs in homes, schools, work and societies, in accordance with the digital culture of the current and future generations of technology (Floridi & Chiriatti, 2020). Generative AI

tool has the ability to shift the paradigm in the educational landscape. As an integral part of modern life in an ever-advancing technology world, the inevitable widespread adoption of AI-assisted tools in education presents both opportunities and challenges (Ausat et al., 2023; Elbanna & Armstrong, 2023).With its capacity to engage users in natural and human-like conversations, generative AI opens new horizons for personalized and interactive learning experiences.

In the 21st century, there is a growing demand for the implementation of a sustainable learning method, particularly due to the increasing integration of information and technology, as well as the proliferation of diverse knowledge source with the internet (Akmese et al., 2021). The scholarly community has extensively discussed the advantages of integrating generative AI in the field of education, as evidenced by its mention in preprints, various blog posts, and multiple media outlets (Zhai, 2023). As AI technology continues to gain traction, understanding users' perceptions of generative AI, particularly among students in the educational context, becomes imperative to harness its full potential effectively.

The traditional one-size-fits-all approach to education has faced challenges in catering to the diverse needs and learning preferences of students. Furthermore, with the digital age enabling the vast accessibility of information, students are presented with a sea of knowledge, making the process of navigating, and comprehending information overwhelming at times. In response to these challenges, generative AI has emerged as potential game-changers in the educational landscape. With its ability to process natural language and generate contextually relevant responses, generative AI provides students with instant access to information, personalized assistance, and a unique learning experience (Ngo, 2023). Despite the significant potential of generative AI, there remains a gap in understanding how Pre-University students perceive and interact with such technologies. Exploring students' attitudes, opinions, and experiences in using AI tools within the Malaysian private university context is essential to unlocking the full potential of generative AI as a powerful tool in education, offering students a novel way to access information, enhance critical thinking skills, and receive personalized support (Azam Che Bakri, 2023).

Literature Review

The integration of generative AI in the educational landscape has sparked interest among researchers and educators worldwide. As AI continues to advance, its potential to revolutionize teaching and learning experiences becomes increasingly apparent.

Personalized Learning Experiences

One of the key advantages of integrating generative AI in education is its potential to provide personalized learning experiences for students. Traditional one-size-fits-all instructional approaches have faced challenges in catering to the diverse learning needs and preferences of students. generative AI, with its adaptability and ability to analyse individual learning patterns, presents a solution to this predicament. By dynamically adjusting its responses based on user interactions, generative AI tailors the learning experience to match each student's unique requirements. This personalized approach fosters a deeper understanding of concepts, promotes independent exploration, and encourages students to take ownership of their learning journey (Elbanna & Armstrong, 2023; Ngo, 2023; Tlili et al., 2023). A study done on ICT students at a university in Australia indicates that participants generally held a

favourable view of ChatGPT, perceiving it as a valuable and pleasurable tool for learning purposes (Elkhodr et al., 2023). Hence, the incorporation of generative AI is perceived as an enhancement to students' learning experiences, provided there is proper guidance from the instructors.

Empowering Inquiry-Based Learning

Inquiry-based learning, which emphasizes curiosity-driven exploration and active engagement, is a pedagogical approach that aligns seamlessly with the capabilities of generative AI. Through natural language interactions with generative AI, students can explore and seek answers to their questions in real-time. The AI tool's immediate responses to queries empower students to pursue self-directed investigations, leading to deeper knowledge acquisition and fostering a sense of intellectual curiosity. Furthermore, vast knowledge of generative AI enables it to offer insights from various perspectives, encouraging students to critically analyse information and make informed decisions (Xie, 2023). A study on the perceptions of computer engineering students in the United Arab Emirates reveals that the students have a positive perception of generative AI, acknowledging its impressive capabilities that are beneficial to them (Shoufan, 2023). The respondents express a genuine interest in utilizing this technology, as they perceive it to be a source of motivation and assistance in their academic and professional endeavours. Users report a high level of ease in utilizing the system, expressing their appreciation for its interface that closely resembles human interaction.

Enhancing Access to Information

In the digital age, access to information is abundant, but efficiently navigating and comprehending this vast sea of knowledge can be overwhelming. generative AI serves as a valuable ally in this information-rich landscape, providing students with a gateway to accurate and relevant information. Whether seeking explanations for complex topics, accessing scholarly articles, or gaining insights into specific subjects, generative AI streamlines the process of obtaining information (Haglund, 2023). Efficient accessibility to knowledge can serve as a vital resource to support students' academic pursuits.

Technology Acceptance Model (TAM)

The current study has adopted the Technology Acceptance Model (TAM) to assess the perceptions on the acceptance and utilization of generative AI within the context of higher education in Malaysia, supported by the theory, as it incorporates two fundamental elements of the theory as variables in its framework. The fundamental of TAM is that the perceived usefulness (PU) of technology and the perceived ease of use (PEOU) influence a person's attitude toward the use of technology (Davis, 1989). The component of perceived usefulness was assessed to determine the extent to which individuals consider that the utilization of technology would improve their performance and yield superior results (Agbaglo & Bonsu, 2022; Davis, 1989; Scherer et al., 2019). The PEOU component examines an individual's perception of the ease with which technology can be used. Previous studies (Bonsu & Baffour-Koduah, 2023; Scherer et al., 2019) have highlighted a limitation of the TAM, where it does not clearly establish what the construct of technology acceptance is, and whether mass use or actual integration into higher education determines the acceptance and usage of a technology. Despite this limitation, the theory has been extensively adopted by researchers in their studies related to the academics.

Perceived Usefulness

Perceived usefulness is the central construct of TAM, referring to users' beliefs about the extent to which a technology enhances their performance or facilitates their tasks. When applied to student, perceived usefulness encompasses their perceptions of how generative AI tools contributes to their learning experiences. Prior research has indicated that students tend to view generative AI as beneficial for tasks like personalized learning, quick information retrieval, and enhancing productivity (Bonsu & Baffour-Koduah, 2023). This construct is particularly relevant as it offers insights into students' motivations for adopting generative AI in education.

Perceived Ease of Use

Perceived ease of use, another fundamental construct of TAM, examines how users feel about the degree of difficulty they have while interacting with a particular technology. For students using generative AI, this construct relates to their perceptions of the tool's user-friendliness, intuitive interface, and simplicity of engagement (Ngo, 2023). The ease-of-use influences students' attitudes and behavioural intentions, as tools that are perceived as easy to navigate are more likely to be adopted.

Perceived Credibility and Ethical Concerns

Credibility is an important aspect that plays a significant role in influencing individuals' confidence and trust in technology (Liu, 2023). According to a study in Kazakhstan, the reliability of information students can get from generative AI is one of the concerns that they perceive to affect the use of the technology (Yilmaz et al., 2023). The accessibility to vast sources and information provided by generative AI requires its perceived credibility to ensure the reliability, trustworthiness, and accuracy of information.

Attitude Towards Using a Technology

TAM emphasizes that users' attitudes toward using a technology play a pivotal role in shaping their intentions and behaviours. For students engaging with generative AI, attitude toward using reflects their emotional and cognitive responses to the tool. A previous study found that attitudes were influenced by perceptions of generative AI's authenticity, convenience, and contribution to attaining learning outcomes (Chen et al., 2022). Another study reported users who are more familiar and comfortable in engaging with generative AI, shows more favourable attitudes towards its use (Yilmaz et al., 2023). Positive attitudes from the users are a common reason for higher intentions to adopt and use the technology, making this construct crucial in predicting students' engagement with AI tools.

Behavioral Intention to Use and Actual System Use

TAM suggests that users' behavioral intentions are influenced by their perceived usefulness and ease of use (Venkatesh et al., 2003). These intentions, in turn, impact actual system use. Applying this to the context of education, students' intentions to use generative AI tools are shaped by their perceptions of its benefits and usability. This relationship underscores the importance of understanding students' intentions, as they serve as a bridge between perceptions and actions.

The adaptation of the TAM framework to the analysis and evaluation of generative AI in education highlights the potential benefits and challenges of integrating such technologies in Pre-University settings trough personalized and interactive learning aid. By adapting a

comprehensive framework like TAM, educators and researchers can better understand the implications of generative AI in education and leverage their potential to enhance Pre-University students' learning experiences. This research on pre-university students' perceptions of using generative AI will provide valuable insights into how these conditions influence their attitudes and experiences, guiding the development of best practices for generative AI integration in educational settings.

Research Problem

While the potential benefits of generative AI in education are evident, understanding users' perceptions is a crucial aspect that warrants empirical investigation. Specifically, exploring students' attitudes, opinions, and experiences in using generative AI as an educational tool is essential to unlock its full potential. Research on users' perception will shed light on how students perceive generative AI technologies, their level of trust in AI-generated content, and their attitudes towards integrating generative AI in their learning journey. Furthermore, insights gained from this research will inform educators, administrators, and policymakers on how to effectively integrate generative AI into the teaching and learning processes, creating a more personalized and adaptive educational environment (Organisation for Economic Co-operation and Development, 2023).

According to a survey conducted in February 2023, encompassing four Southeast Asian countries, it was observed that a significant proportion (76 percent) of respondents in Malaysia expressed their primary concern regarding the potential for individuals to develop a reliance on the readily available information provided by a popular generative AI, ChatGPT, which could eventually lead to the loss of critical and independent thought processes (von Kameke, 2023). Nevertheless, the results of the same survey show that Malaysians are less concerned about the possibility that generative AI may continue to represent societal prejudices in its responses. As with any other transformative technology, the integration of generative AI in education also presents certain challenges and ethical considerations.

The accuracy and reliability of AI-generated content must be continually monitored to ensure students are receiving accurate information. It is important to note that generative AI is not intended to replace human intelligence, but rather to complement and assist its users in completing their tasks. A past study reported a significant number of participants expressed their concerns about the accuracy of the information provided, although they maintained a positive outlook regarding the use of the AI tool in general (Shoufan, 2023). The respondents in the study cited that improvements are necessary for continued use in the future, particularly in relation to the possible adverse effects of generative on academic integrity, future employment prospects, and daily life. Based on this finding, it is evident that generative AI exhibits significant potential for educational purposes. Another main concern is that students may use generative AI tools to cheat or plagiarise. With such risks, there are many researchers who have provided guidelines for the use of generative AI in the classroom (Lieberman, 2023; Mollick & Mollick, 2022). The present study will offer valuable insights into the educational applications of generative AI, shedding light on both its strengths and weaknesses. The findings will serve as a foundation for future investigations and advancements in the field.

Significance of the Study

The current study will shed light on the gap in understanding the perceptions of generative AI users in the education field, particularly among tertiary level students in Malaysia. It has been identified that there is a potential gap in understanding the perceptions of the educational AI tools, particularly, g perceptions of its usage among pre-university students in Malaysia based on the Technology Acceptance Model (TAM) (Davis, 1989).

By incorporating generative AI into the learning environment, educators can provide students with valuable opportunities to enhance their communication skills and engage in meaningful interactions. One area of focus for educators should be guiding students on effective prompting techniques. With clear and concise prompts provided, students can learn to elicit more accurate and relevant responses from generative AI. Educators can emphasize the importance of using specific and contextually rich prompts to obtain desired outcomes. Furthermore, educators should also dedicate time to teaching students how to assess the quality of AI-generated responses. This involves developing critical thinking skills, and the ability to evaluate the coherence, relevance, and accuracy of the information provided by generative AI.

This research holds several implications for the educational landscape at Malaysian private universities. By understanding how Pre-University students perceive and interact with generative AI, educators and administrators can make informed decisions on incorporating these technologies into the curriculum. The insights gained from this study will enable educators to tailor their teaching strategies and utilize generative AI as a supplementary tool, fostering a more personalized and adaptive learning environment for students. Additionally, concerns related to data privacy and responsible AI use must be addressed to safeguard students' interests. By acknowledging and addressing these challenges, educators and researchers can work collaboratively to maximize the benefits of generative AI while mitigating potential risks.

Research Purpose

An empirical study is important in understanding the impact of various factors, including system quality, perceived usefulness, and perceived ease of use of generative AI in education. The primary findings of this study help educational institutions to outline their policy for the students and provide a manual to the educators in utilizing generative AI technology, enhance student satisfaction, and ultimately, improve the quality of education. Therefore, this study aims to identify determinants of the perception on the use of generative AI among pre-university students. The participants were chosen from a private university in Malaysia.

In the dynamic landscape of education, the rapid advancement of technology has spurred the integration of artificial intelligence (AI) tools to augment and transform traditional teaching and learning methodologies. A study conducted by Mohamed (2023) on faculty members at a university in Saudi Arabia, reported the group of educators to acknowledge the use of generative AI in enhancing teaching and learning process. Among these transformative technologies, generative AI has emerged as promising tools that engage users in human-like conversations, revolutionizing the way information is accessed and disseminated. With its potential to enhance the educational experience and assist students in their academic pursuits, understanding students' perceptions of using generative AI is vital alongside the technological advancement.

This research paper aims to delve into the perceptions of generative AI among students in the educational context, particularly focusing on pre-university students. By examining students' attitudes, preferences, and experiences with generative AI, this study seeks to contribute valuable insights to the effective integration of AI technologies in education. Ultimately, a comprehensive understanding of users' perceptions will pave the way for harnessing generative AI's potential to enhance the teaching and learning experiences of students, preparing them for the challenges and opportunities presented by an increasingly AI-driven world. The primary objectives of this study are as follows:

1. To understand the pre-university students' perceptions and attitudes towards using AI tool ChatGPT for educational purposes.
2. To compare the differences between participants' demographic profile and the intention in using ChatGPT

Methodology

An online questionnaire was distributed via Google Forms. The questionnaire was adapted from previous studies (Bonsu & Baffour-Koduah 2023; Yilmaz et al. 2023) and include five constructs with three statements for each construct. A close-ended five-point Likert scale is used for the items in the questionnaire to provide a higher level of impartiality and facilitates the understanding of the participants (Brace, 2010). According to Billings and Halstead (2005), using closed-ended questions in an instrument is an effective way to understand a respondent's beliefs, behaviour, views, and perceptions. 153 responses were collected from pre-university students at a private university in Malaysia. Descriptive analysis was used for the analysis of statistical data in this research IBM SPSS Statistics 27.

Results and Discussion

The study found that the respondents were well-informed about the benefits of using generative AI for learning, as indicated by an average mean score of 3.88. From the students' viewpoint, generative AI utilization in education presents a significant potential that yielded multiple advantages. A consensus among students exists about the time-saving benefits, extensive information availability, personalized coaching and feedback, and enhanced learning and retention facilitated by generative AI. The study findings were in accordance with the results of past studies (Bonsu & Baffour-Koduah, 2023; Ngo, 2023). Various benefits from using generative AI are useful for students in completing their academic tasks such as information searching and brainstorming. The abundance resources are also available online for them to self-navigate the generative AI technology.

H01: There is no Statistically Significant Difference in the Perceived Benefits (Pb) in Using Generative Ai Between Male and Female Respondents.

Mann-Whitney U Test was used to evaluate the difference between male and female respondents on their perceived benefits in using generative AI. The perceived benefits consist of the constructs of perceived usefulness and perceived ease of use. The test revealed that there is no significant difference in the overall perceived benefits of generative AI between male and female, $U = 2275.5$, $n1 = 101$, $n2 = 52$, $p = .175$, with a small effect size, $r = .086$. The result for perceived usefulness shows no significant difference between male and female students, $U = 2352.5$, $n1 = 101$, $n2 = 52$, $p = .287$, with a small effect size, $r = .086$. The result for perceived ease of use also shows no significant difference between male and female students, $U = 2338.5$, $n1 = 101$, $n2 = 52$, $p = .262$, with a small effect size, $r = .091$. The results

suggest that there is no statistically significant difference between male and female students on their Perceived Benefits of generative AI. The null hypothesis, H01, is retained. The finding corroborates with the past studies where female users perceived the usefulness of generative AI as less useful compared to males (Araujo et al., 2020; Yeh et al., 2021). The consistent finding across multiple studies, including your own, regarding female users perceiving generative AI as less useful than males, underscores the presence of gender disparities in AI perception. This highlights the need for targeted interventions and educational initiatives to address and mitigate gender-based biases in technology perception. The findings emphasize the importance of inclusive design and development practices in AI technologies. AI developers and designers should consider diverse user perspectives, including gender differences, when designing AI applications to ensure that they meet the needs and preferences of all user demographics effectively. Educational interventions aimed at bridging the gender gap in AI perception should focus on enhancing AI literacy, providing hands-on experiences with AI technologies, and promoting positive role models and mentorship opportunities for female students. These interventions can help challenge stereotypes, build confidence, and inspire female students to pursue careers and interests in AI.

H02: There is no Statistically Significant Difference in the Perceived Challenges (Pc) of Generative Ai Between Male and Female Respondents.

The perceived challenges of generative AI between male and female students were also tested with Mann-Whitney U Test. The perceived challenges consist of the constructs perceived credibility and perceived ethical and privacy concerns of generative AI. The test revealed that there is no significant difference in the overall perceived challenges of generative AI between male and female, $U = 2547$, $n1 = 101$, $n2 = 52$, $p = .760$, with a small effect size, $r = .025$. The result for perceived credibility of ChatGPT shows no significant difference between male and female students, $U = 2591$, $n1 = 101$, $n2 = 52$, $p = .892$, with a small effect size, $r = .011$. The test also shows no significant difference between male and female students on the perceived ethical and privacy concerns in using generative AI, $U = 2563$, $n1 = 101$, $n2 = 52$, $p = .806$, with a small effect size, $r = .020$. The results suggest that there is no statistically significant difference between male and female students on their perceived challenges of generative AI. Hence, the null hypothesis, H02, is retained. This contradicts past findings where gender exhibited a marginal association with perceptions of risk in generative AI (Araujo et al., 2020). The contrasting results highlight the complexity of gender dynamics in technology perception. It's essential to explore additional factors and contextual variables that could contribute to discrepancies in research findings across different studies. This could include cultural influences, sample demographics, and variations in survey instruments or methodologies. By demonstrating that gender does not significantly influence how students perceive challenges related to generative AI, the current study highlights the importance of considering a gender-neutral approach in studying technology perceptions.

H03: There is no Statistically Significant Relationship Between Behavioral Intention (Bi) of Using Generative Ai Between Male and Female Respondents.

The behavioural intention of generative AI between male and female students was also tested with Mann-Whitney U Test. The test revealed that there is no significant difference in the overall perceived challenges of generative AI between male and female, $U = 2551$, $n1 = 101$, $n2 = 52$, $p = .771$, with a small effect size, $r = .024$. The results suggest that there is no

statistically significant difference between male and female students on their behavioural intention of using generative AI. Hence, the null hypothesis, H03, is retained. The finding contradicts the result from previous study done by Yeh et al. (2021) where male was found to be more positive than female towards generative AI. The current findings challenge the assumption that gender plays a significant role in shaping the intention to use generative AI. This highlights the importance of considering individual differences and diverse perspectives when studying technology adoption and perception. Emphasizing gender neutrality in AI-related research leading to better understandings on factors influencing technology acceptance.

Table 1
Correlations

			MeanPB	**MeanCL**	**MeanATT**	**MeanBI**
Spearman's rho	MeanPB	Correlation Coefficient	1.000	-.012	.633**	.654**
		Sig. (2-tailed)	.	.885	.000	.000
		N	153	153	153	153
	MeanCL	Correlation Coefficient	-.012	1.000	-.001	-.100
		Sig. (2-tailed)	.885	.	.987	.218
		N	153	153	153	153
	MeanATT	Correlation Coefficient	.633**	-.001	1.000	.664**
		Sig. (2-tailed)	.000	.987	.	.000
		N	153	153	153	153
	MeanBI	Correlation Coefficient	.654**	-.100	.664**	1.000
		Sig. (2-tailed)	.000	.218	.000	.
		N	153	153	153	153

**. Correlation is significant at the 0.01 level (2-tailed).

Spearman's rank-order correlations were run to examine the relationships between perceived benefits, perceived challenges, attitudes, and behavioural intention to use generative AI. Based on Table 1, there were positive and significant correlations between perceived benefits and attitude in using generative AI, rs = .633, n = 153, p<.001, perceived benefits and behavioural intention in using generative AI, rs = .654, n = 153, p<.001. The results suggest negative and very weak correlations between perceived challenges and attitude towards generative AI, rs = -.001, n = 153, p = .987. It also shows negative and weak correlations between challenges and behavioural intention in using generative AI, rs = -.100, n = 153, p = .218. The correlation analysis revealed that there was no statistically significant relationship between students' perceptions and their intention to use generative AI in studies. Despite this finding, the study revealed that the students had the intention to use generative AI and advocated its adoption in education through their experience. Likewise, the study reported a positive perception of the students towards generative AI based on its convenience, accuracy, and generation of better results, which support past findings (Araujo et al., 2020; Ngo, 2023; Yeh et al., 2021; Yilmaz et al., 2023). In addition to the advantages of

generative AI, such as timesaving, providing information across different domains, offering personalized tutoring and feedback, and enhancing writing ideas, the respondents agree that they also faced several challenges. These include the inability to assess the quality and reliable sources, the inability to cite sources, and the inability to substitute words effectively. Various strategies can be utilized to tackle these concerns, including cross-checking generative AI responses with credible sources, employing generative AI as a reference or consulting tool, establishing guidelines for generative AI usage, and, crucially, fostering academic integrity among students to ensure its ethical utilization in an academic setting.

Conclusion

This study was conducted to examine the perceptions and intentions to use ChatGPT by pre-university students in a Malaysian private university for educational purposes. This research utilized the theoretical benefits of the Technology Acceptance Model (TAM) to examine the research hypotheses, driven by the limited number of studies and the necessity to provide findings from a particular context as perceived by pre-university students in a private university in Malaysia. The objective of this study was to determine the perceptions of university students on the utilization of ChatGPT The data analysis indicated that students generally had favourable perception towards utilizing ChatGPT for educational purposes.

The contrasting findings with past research highlight the need for rigorous methodological considerations in AI-related studies. Future research should carefully design surveys, consider diverse sample demographics, and employ robust statistical analyses to ensure the reliability and generalizability of findings regarding AI perception across different populations. The consistency of findings across studies highlights the importance of continued research and monitoring of gender dynamics in AI perception. Future studies can delve deeper into the underlying factors contributing to gender differences in AI usefulness perception and evaluate the effectiveness of interventions aimed at promoting gender equality in AI perception and usage.

There are various implications that may be inferred for educational practices and future research. Prior to discussing the consequences, it is important to acknowledge that this study was limited by the available data. Despite the presence of over 100 participants, the available quantitative data was insufficient to establish a definitive correlation between perceptions and intentions to utilize generative AI in the field of education. It is suggested that future studies to enhance their sample size or employ two distinct institutions to obtain a more comprehensive perspective. Moreover, the research findings establish a foundation for educators and researchers to examine future avenues of education by utilizing generative AI as a conditioning factor, thereby setting a standard for comparison.

It is suggested that students are struggling with the ethical concerns of artificial intelligence in addition to its benefits. Consequently, this highlights the significance of promoting critical thinking skills and ethical reasoning among students who are not yet enrolled in university. As a means of providing students with the resources necessary to make well-informed decisions and constructively contribute to the development of artificial intelligence in the future, educators can encourage students to critically analyze the societal, economic, and ethical components of generative AI. There are several elements that can influence students' impressions of generative AI, including their socioeconomic background, the cultural setting in which they were raised, and their previous experience with technology. As such, inclusive educational approaches are crucial to cater the diverse perspectives and experiences of students. By embracing diversity in AI education and fostering inclusive learning

environments, students will be more empowered in their learning experience. Policymakers play a crucial role in shaping the ethical and regulatory frameworks surrounding generative AI development and deployment in education. AI literacy and responsible AI use from an early age should be promoted to increase awareness. Policymakers should consider addressing the concerns regarding AI's potential negative impacts, such as privacy breaches. Given the lack of gender-based differences in behavioral intention toward generative AI reported in the findings, educators and policymakers can focus on promoting AI literacy and awareness without gender-specific biases. Emphasizing the benefits, challenges, and ethical considerations of AI across diverse student populations can foster a more inclusive and informed approach to technology adoption and usage.

Additionally, it is potential to emphasize the significance of collaboration between educational institutions and a variety of industry stakeholders. Education professionals can ensure that students are exposed to real-world applications of artificial intelligence and industry best practices by cultivating collaborations with firms and developers of artificial intelligence. Engaging in practical activities can assist students in gaining a better comprehension of AI and its possible consequences, equipping them for their future professional field. Adding a component on generative AI use in the course can help to increase the awareness of the challenges and ethical concerns.

The study encourages continued collaboration and dialogue between researchers, educators, policymakers, and industry stakeholders in shaping AI education and policy frameworks. By fostering multidisciplinary discussions and sharing insights from diverse perspectives, stakeholders can work together to address challenges, promote inclusivity, and harness the potential of AI for societal benefit.

In conclusion, the benefit of generative AI is a significant factor in the students' intention to use it. It was also found that challenges faced by students in the use of generative AI may deter their attitude towards the technology. Additionally, gender is not a significant factor that affects its overall use and perception. The implications of the present findings are crucial in the use of generative AI in teaching and learning.

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