Relationship between Students' Attitudes towards Artificial Intelligence (AI) and their usage of AI Chatbots

Suchitra Veera, (https://orcid.org/0000-0001-8130-1523), University of Phoenix, Samantha Bietsch, American Public University, Anthony Bennett
University of Phoenix, Susan Jones, University of Phoenix, James Rice, University of Phoenix, USA

Abstract

Integration of AI in the classroom has raised questions about academic integrity, ethics, and the educational value of chatbots. This quantitative study examined graduate students' attitudes toward AI chatbots and their self-reported usage, with particular attention to perceptions of academic integrity, ethics, and educational value. Data were collected from 54 doctoral students enrolled at a private, online university in the United States using a structured survey instrument. Statistical analyses indicated no significant gender differences in attitudes toward AI chatbots, but significant differences across fields of study. Favorable attitudes toward chatbot use, perceptions that chatbot-generated results were superior, and disagreement with prohibiting chatbot use were positively correlated with reported ChatGPT usage. Findings highlight the need for discipline-sensitive guidance and clear institutional policies addressing ethical AI use in higher education.

Key Words: artificial intelligence, ChatGPT, student attitudes, higher education, chatbots

Introduction

With artificial intelligence (AI) use in higher education rising rapidly, ethical challenges related to student privacy, equity, and academic integrity require careful review. AI tools are becoming part of instructional practice and everyday workflow. This has created a complex environment in which capabilities are evolving faster than higher education policy, resulting in uncertainty for administrators, faculty, and students. It is therefore important to understand how students interact with AI and how their attitudes toward ethical behavior may inform institutional guidelines.

Chatbots are software agents which are intended to resemble a human counterpart during interaction, and with whom a user can communicate in written or spoken discussion (Hatwar et al., 2016; Ltifi, 2023). Chatbots are increasingly replacing humans to provide customer service in the digital environment (Mpinganjira et al., 2024). The use of AI chatbots can enhance learning through increased student autonomy and complementing human interactions, especially in distance learning and flipped classroom environments (Grájeda et al., 2024).

The objective of this study has been to assess the relationship between students' attitudes toward academic integrity, performance, and ethics in the context of AI and their self-reported

use of AI chatbots for academic purposes. The research analyzes the differences between genders and fields of study with respect to student attitudes towards chatbot usage from the perspective of academic integrity, academic success, and ethical behavior. It also examines whether student attitudes towards and perceptions of chatbots are significantly related to their reported chatbot usage. Obtaining such insights through research will help faculty and administrators of higher education to be better equipped to manage their organizations in the increasingly AI-oriented world of the future.

AI use has flourished in higher education in recent years, and while researchers have studied it in the past, its effect was explored primarily at a qualitative and general level (Memarian & Doleck, 2023). With widespread popularity and the availability of data about AI usage, it is critical now to link descriptive definitions with technical ones, as well as to build on qualitative studies using the data that is available (Memarian & Doleck, 2023). More empirical research approaches are required, for understanding the elements that contribute towards building chatbots that meet customer expectations and provide value (Mpinganjira et al., 2024). Accordingly, this study adopts a quantitative approach which provides measurable data for statistical analysis. It highlights the importance of understanding user behavior even as universities create policies for responsible AI adoption.

Literature Review

Artificial intelligence has entered higher education rapidly, but the literature points to two competing trends. On one hand, AI can support instructional design, feedback, personalization, and student engagement; on the other hand, it raises concerns about privacy, academic integrity, bias, and overreliance on automated outputs (Chan & Hu, 2023; Kerimbayev et al., 2025; Nguyen et al., 2024). Taken together, prior studies suggest that AI in education should be evaluated not only for efficiency and innovation, but also for its implications for trust, fairness, and responsible use.

Artificial intelligence (AI) in education involves computer systems and software that mimic human cognitive functions. AI systems utilize algorithms and other methods to collect and analyze data (Kerimbayev et al., 2025). While this has presented many challenges and concerns surrounding student privacy and academic integrity, it has also created opportunities to address some of these issues with the help of AI tools and human oversight (Mosqueira-Rey et al., 2023). Nguyen et al. (2024) noted that the rapid integration of artificial intelligence into higher education creates significant educational opportunities as well as substantial risks in the areas of privacy, bias, and academic integrity. A second concern involves upholding academic integrity in higher education. The sophistication of these systems can create a challenge for maintaining academic integrity because their use is not always recognized, and there are few detection tools that can assist with upholding these standards. A third area of concern is the fairness of such algorithmic systems and the degree of transparency and clarity in the information they present, which affects whether they are perceived as trustworthy and equitable.

The future of AI in education necessitates the need for policy regarding its use. According to Chan and Hu (2023), the present use of AI technology includes administrative, management, and methods to improve curriculum design and assessments. Chan and Hu (2023) further posit, that “despite identifying multiple issues of concern in the educational contexts, policies on AI in education are mostly generic and implicit because of the lack of concrete evidence of implementing AI technologies” (p.6). Although the instrumental value of AI is on the rise, AI in education is largely absent from policy conversations.

Landers (2025) posits that there is serious concern among tech experts that advancements in AI systems threaten educators' ability to react both knowledgeably and cautiously. Landers (2024) further assert that educational institutions need to remain current with their understanding of AI technology to adequately address ethical and safety vulnerabilities within AI systems. To maintain balance between AI assistance and human interaction, Barrot (2024) recommended that clear guidelines to foster critical engagement with AI-generated content are needed. Laak and Aru (2025) assert that many AI-driven personalized learning systems prioritize efficiency and content mastery at the expense of learner agency, cognitive engagement, critical thinking and collaboration. The authors assert a need for institutions to move beyond the simple adoption of AI tools by ensuring these technologies support holistic, learner-centered educational practices. They further assert that responsible AI integration requires thoughtful policy development, transparent communication, and a commitment to aligning AI tools with the ethical and pedagogical values of modern education.

Because AI tools are evolving quickly, the literature base can become outdated within a short period of time. More recent scholarship therefore needs to be considered alongside foundational work so that discussions of academic integrity, policy, and student use remain current. This study contributes to that need by examining how doctoral students perceive AI chatbots and how those perceptions relate to self-reported use in academic settings.

AI awareness has increased significantly since the public release of ChatGPT by OpenAI in late 2022. With recent developments in cloud technologies, the Internet of Things (IoT), and big data, organizations can gather vast amounts of data on their systems and processes. Many have attempted to use these data to identify trends, detect patterns, and build analytical models that improve decision making. AI can be used in higher education administration for evaluating applicants, developing marketing and communication materials, and managing enrollment, budgets, and finances. In teaching, faculty can also use AI capabilities to create course materials, deliver video lectures, track student progress, and provide more customized and personalized learning experiences (Ivanov, 2023).

Interactivity and Human Oversight in AI

Recent research has identified machine learning and AI-based tools which can be used with interactive features that promote fairness of an AI system and have shown promising results (Nakao et al., 2022). As algorithms are increasingly integrated into decision making processes, it is important to understand questions of where and how humans should be involved in algorithmic decision-making processes, to ensure productive decision making in such hybrid systems (Crootof et al., 2023).

In agriculture, law, philanthropy, transportation, and many other fields, there is growing interest in integrating human oversight or involvement in the algorithmic decision-making processes (Crootof et al., 2023). The traditional approach has been for a machine learning algorithm to be modeled, built, tested, and then provided to the end users for use in a business or educational application. The 'human-in-the-loop' approach involves new types of interactions between humans and machine learning algorithms (Mosqueira-Rey et al., 2023). According to Shneiderman (2022) "Algorithms trained via machine learning are still subject to failure in novel situations, because they lack the innate human attributes of common sense and higher cognition" (p.56). Instead of solely relying on AI experts to address biases and trust-related issues, recent work has explored ways of utilizing the contributions of end users in terms of what they consider to be fair (Nakao et al., 2022). For example, an interactive AI that provides explanations can increase their understandability (Retzlaff et al., 2024).

Student Privacy Considerations with AI use

There are numerous student privacy considerations associated with the use of generative AI. These considerations include privacy issues related to data collection and storage, data access, and data use. Chan (2023) developed several qualitative themes that included the need to address AI governance, with particular emphasis on transparency regarding data use in addition to privacy and security. According to Chan (2023), "The complexity of AI technologies can make it difficult to hold organizations and individuals accountable for their decisions and actions" (p. 14). Barrot (2024) asserted that selecting AI tools that comply with data protection regulations is essential for safeguarding student privacy.

Student Trust Considerations with AI use

The use of data-driven algorithmic systems has surfaced the need for a critical analysis of AI in education taking into consideration concerns about fairness and bias (Kizilcec & Lee, 2022). The way by which such models work is based on the data that is supplied to the models – since the models are initially trained using the data and learn from the patterns in the data. This data can be biased and if so, the resulting models and their decisions will reflect the bias in the data that was used to train the models. According to (Chan, 2023) "Institutions should address ethical issues, such as potential discrimination, bias, and stereotypes, while ensuring data privacy and security" (p.14).

With increasing model complexity, the inner workings of the models lack transparency even to experts, thereby giving rise to a deficiency of understanding and therefore trust in the models. Relying on AI's ability to mine datasets at a very rapid rate and make predictions or offer new models for higher education programming, teaching and learning can result in humans using incorrect logic or data if the AI model is imperfect and lacks transparency (Memarian & Doleck, 2024). Trust enables effective deployment and adoption of AI systems and without trust students may be hesitant to use or rely on AI systems, which in turn would diminish the benefits gained from such systems (Retzlaff et al., 2024). Building trust in AI systems requires significant AI investments to develop AI chatbots with social presence that can deliver an outstanding service experience for customers; until then their usage may be limited to task-completion chatbots (Payne & O'Brien, 2024).

Student Integrity Considerations with AI use

Landers (2024) asserts the important role that intellectual integrity plays in providing context for establishing trust between the teachers and students. Student integrity concerns are increasing as the use of generative AI increases (Landers, 2025). Chan (2023) reported that one of the main concerns with student integrity is the risk that students are increasingly using generative AI tools to cheat or plagiarize as a means of completing written assignments and exams. The issue is further compounded by concerns among tech experts that advancements in AI systems threaten educators' ability to react both knowledgeably and cautiously against these vulnerabilities.

Barrot (2024) recommended further study to investigate how AI tools affect student views on authorship, originality, and academic integrity, as well as how students balance AI-generated content with their own work. Balancing technological innovation with ethical considerations and academic values is essential if academic institutions are to derive the benefits of AI while maintaining high standards of academic integrity (Acosta-Enriquez et al., 2025).

Student Expectations for Academic Achievement with AI Use

Students' views, experiences and perceptions of a technological innovation such as Gen AI can impact their willingness to utilize AI-based tools such as chatbots (Chan & Hu, 2023). Prior research indicated that when math lessons were taught using ChatGPT created lesson plans, students' academic achievement showed a significant increase as compared to a control group that was taught using the school's existing math curriculum (Kalenda et al., 2025). A few studies have also analyzed and acknowledged the potential of AI to provide a more personalized learning experience, enhance engagement and participation, as well as promote critical thinking and problem-solving skills (Al-Zahrani & Alasmari, 2024; Grájeda et al., 2024). A study on student use of chatbots in higher education found that students living with neurodevelopmental disorders such as autism spectrum disorder or attention deficit hyperactivity disorder were able to reduce the stress associated with assessment tasks (Gruenhagen et al., 2024).

Given the recent developments in this technology and the increasing use of AI Chatbots, the objective of this research is to help shed some light on student perceptions of AI in higher education. Specifically, students' opinions on responsible use of ethical AI in education to uphold academic integrity while enabling improved academic achievement from the use of this technology in the classroom.

Theoretical Framework

Researchers in the field of AI agree that there are many benefits to AI in education. However, researchers also assert that the use of this technology may lead to a decline in student's critical thinking and writing skills as reliance upon AI increases (Chan & Hu, 2023). The continued use of AI could also have a negative impact on the quality of education and associated learning outcomes. Ethics and integrity are also among the concerns that researchers have discussed in studies pertaining to the use of AI in education. Responsible use of student-generated data through deployment of generative AI in educational settings for research as well as for pedagogical improvement requires careful attention to privacy and data security according to Jaboob et al. (2025).

Although chatbot usage has gained widespread adoption since ChatGPT was rolled out in 2022, there is still limited clarity regarding the factors that contribute to a successful chatbot interaction experience for users (Mahadi Hasan et al., 2024; Mpinganjira et al., 2024; S. C. Silva et al., 2023). Because the use of AI chatbots in education involves reliance on technology-based tools, several theories and models of technology adoption have been applied to analyze AI chatbot attitudes and usage. These theoretical models are particularly relevant for examining the influence of gender and academic field of study on AI chatbot usage and attitudes. These frameworks include the Technology Acceptance Model (TAM) (Dahri et al., 2024; Dhanya & Ramya, 2025; Pillai & Sivathanu, 2020; Yang, 2013) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Anderson et al., 2006; Biloš & Budimir, 2024; Dhanya & Ramya, 2025; Stöhr et al., 2024).

Similarly, analyzing the interaction between attitudes towards chatbots with reported AI chatbot usage can provide insights into student perceptions towards chatbots that can dictate their adoption and usage of the tools in their academic journey. The UTAUT framework can be applied to determine whether positive attitudes towards AI chatbots are correlated with AI chatbot usage (Biloš & Budimir, 2024; Dhanya & Ramya, 2025; Dhiman & Jamwal, 2023). Applying a customer centric approach towards analyzing AI chatbots, the expectancy confirmation theory analyzed student expectations from AI chatbots about future academic success based on the perceived performance of AI chatbots (Lee et al., 2022). The 3P (presage-process-product) model of teaching and learning (Chan & Hu, 2023) is yet another model that

has been applied towards analyzing student perceptions, with user acceptance being key to technology adoption.

Research Questions/Hypotheses

This study utilized the technology adoption frameworks and models of TAM and UTAUT to understand the impact of demographic characteristics on attitudes towards AI chatbots and their usage. To understand how perceptions and attitudes towards AI chatbots impact their use, this study addressed the following two research hypotheses as part of the quantitative research and analysis:

1. Hypothesis #1: There are significant differences across gender, academic level, and field of study in the effects of student attitudes towards academic integrity, academic performance, and ethics with respect to chatbot usage in education.
2. Hypothesis #2: Student attitudes toward academic integrity, academic performance, and ethics with respect to chatbot usage in education are significantly related to their reported chatbot usage.

Methodology

The study used a quantitative descriptive research design to examine students' perceptions and usage of AI chatbots in higher education. This approach allowed for the systematic collection of numerical data that could be analyzed using descriptive statistics, exploratory factor analysis, bivariate and multivariate analyses, and statistical testing to identify patterns, relationships, and trends within the participant population.

An online survey instrument consisting primarily of closed-ended, cross-sectional questions with predetermined answer options was used for data collection in this study. The findings from the survey were used to test the hypotheses by conducting statistical analyses to understand the relationships among the variables. The survey instrument was adapted from the validated questionnaire used in Stöhr et al. (2024), with permission from the original authors, which supported content alignment with prior research on student perceptions and chatbot use.

An online survey instrument consisting of cross-sectional, mostly close-ended questions with predetermined answer options was used for data collection for this study. The findings from the survey were used to test the hypotheses by conducting statistical analyses to understand the relationships among the variables. The survey instrument was a validated questionnaire previously used in Stöhr et al. (2024), with permission from the original authors to use for this study.

Using the validated survey instrument, an online questionnaire was developed using google forms. The informed consent formed the first section of the questionnaire and was followed by a few screening questions to confirm eligibility for the questionnaire based on the inclusion criteria. The first part of the survey followed next, with questions framed to measure students' familiarity with and usage of ten AI chatbots. Participants were asked to rate their familiarity and usage frequency for all of the ten AI chatbots on a four-item ordinal scale with answer categories of "Unfamiliar", "Familiar but never use it", "Familiar but rarely use it", and "Familiar and regularly use it".

The second part of the survey contained questions geared towards measuring students' attitudes towards AI in higher education. Participants were asked to respond using a "agree/disagree" response format for ten statements, along with a "don't know/prefer not to say" option. The questions in this section covered their overall attitude towards chatbot use in

education, their perceptions on the effects of chatbot use on learning and academic performance, on ethical use of AI chatbots and on topics associated with guidelines for chatbot usage within the institution (Stöhr et al., 2024).

Setting, population, sample

The study was conducted within a private, online university in the United States, with a target sample size of 70 students. The population included current students enrolled in the doctoral studies college at the university who were over the age of 18 and represented multiple programs and fields of study. Focusing on this group allowed the researchers to gather perceptions from advanced learners who regularly engage in research as part of their doctoral studies.

The survey was administered via email through the university email marketing team. A total of 3,423 email invitations were sent on October 17, 2025, and 54 complete responses were received by November 8, 2025, from eligible participants. To access the survey questionnaire which launched upon clicking on the link in the email invitation, participants were required to log into their google email which ensured unique responses from all participants. The responses were collected anonymously in Google Sheets, and no identifying information, such as email addresses or IP addresses, was collected. The raw data was then saved on SharePoint in a folder which could only be accessed by team members. (After 3 years, the raw data will be deleted from the SharePoint restricted folder).

Data Analysis

The data gathered from the survey responses were analyzed using descriptive and inferential statistics to test the study hypotheses. Chi-square tests of independence were used because the study compared categorical response patterns across gender and field-of-study subgroups. Spearman correlation was used to examine the relationship between ordinal attitude responses and reported ChatGPT usage. The analysis was conducted using RStudio 2025.09.2 Build 418 © 2009–2025 Posit Software, PBC.

Demographic Analysis

The demographic data profile (Table 1) showed that most survey responses (65%) were from female students. Within the doctoral studies college where the survey was conducted, 28% of responses were from students who indicated Business Management/Administration as their major field of study. The next highest proportions of responses were from students who indicated either Education or Management as their major. The greatest percentage of responses were from students who indicated “doctoral” or “doctorate” as their level of study (83.3%), while the remaining responses referred to program progression labels such as Phase 3, Phase 4, and Phase 5. Because doctoral program structures vary across institutions, these phase labels should be interpreted as institution-specific markers of progression rather than as standardized national categories. Note that the demographic questions were open-ended items in the original survey instrument format; therefore, a degree of data cleanup and categorization was required to consolidate the findings for descriptive analysis.

Descriptive Analysis

Descriptive Analysis (Table 2) of the data collected for chatbot usage showed that the frequency of responses for familiarity and regular use of AI chatbots was the greatest for ChatGPT followed by CoPilot. 35% of respondents rated their ChatGPT use as ‘familiar and regularly use it’ and 39% rated it as ‘familiar but Rarely Use It’. For CoPilot, the responses

percentages were 19% and 35% respectively for the same response categories. There was a very low rate of reported usage and familiarity with the remaining chatbots included in the survey instrument, e.g. YouChat, Bing AI, Chat Sonic, etc.

Analysis of data collected with respect to attitudes towards chatbots (Table 3) indicated that the greatest percentage of responses in the 'Agree' category was for the question 'my teacher(s) or university has rules or guidelines on the responsible use of chatbots'. The second question with the greatest percentage of agreement was with respect to having a positive attitude towards the use of chatbots in education. The third question for which survey responses had the greatest percentage of responses in the 'Agree' category was 'the chatbots I use make me more effective as a learner'. The least percentage of agreement (and greatest percentage of disagreement) was for the statement 'using chatbots should be prohibited in educational settings.

Table 1

Demographic Profile of Survey Participants

	Responses (categorized)	N	%
StudyDiscipline	Business Management/Administration	15	27.8
	Doctor of Business Administration	4	7.4
	Doctor of Health Administration	4	7.4
	Doctor of Management	5	9.3
	Doctor of Management in Information Systems and Technology	1	1.9
	Doctorate in Education Leadership	1	1.9
	Education	6	11.1
	Educational Leadership	4	7.4
	Healthcare Administration	4	7.4
	Information Systems and Technology	1	1.9
	Management	6	11.1
	Management & Leadership	1	1.9
	Management Organizational Development	1	1.9
	Psychology, Education, Educational Tech	1	1.9
StudyLevel	2 year	1	1.9
	3rd year fellow	1	1.9
	Doctoral	45	83.3
	Graduate	2	3.7
	Phase 3	1	1.9
	Phase 4	1	1.9
	Phase 5	2	3.7
	Post-Graduate	1	1.9
Gender	Female	35	64.8
	Male	19	35.2

Table 2

Survey Questions: Familiarity and Usage of AI Chatbots - Descriptive Analysis

Chatbot USAGE	**Frequency of Responses by Response Category**								
AI Chatbot Name	1-Unfamiliar	%	2-Familiar but Never Use it	%	3-Familiar but Rarely Use it	%	4-Familiar & Regularly Use it	%	Total # Responses (N)
ChatGPT	1	2%	13	24%	21	39%	19	35%	54
Bing AI	26	48%	20	37%	7	13%	1	2%	54
Bard AI	33	61%	16	29%	4	7%	1	2%	54
ChatSonic	39	72%	14	26%	1	2%		0%	54
OpenAI playground	35	65%	15	27%	4	7%		0%	54
Jasper Chat	40	74%	13	24%	1	2%		0%	54
Socratic	38	70%	15	27%	1	2%		0%	54
DialoGPT	41	76%	12	22%	1	2%		0%	54
CoPilot	7	13%	18	33%	19	35%	10	18%	54
YouChat	42	78%	10	18%	2	4%		0%	54

Table 3

Survey Questions: Attitude towards use of AI Chatbots

ATTITUDES towards AI Chatbots	Frequency of Responses by Response Category						
Survey Questions (abbrev)	1-Disagree	1-Disagree	2-Don't know/ Prefer Not to Say	2-Don't know/ Prefer Not to Say	3-Agree	3-Agree	Total (N)
Overall, I have a positive attitude towards the use of chatbots in education	16	30%	3	6%	35	65%	54
Chatbots generate better results than I can produce on my own.	31	57%	6	11%	17	31%	54
My teacher(s) or university has rules or guidelines on the responsible use of chatbots.	3	6%	8	15%	43	80%	54
Overall, I have a positive attitude towards the use of chatbots in education.	11	20%	7	13%	36	67%	54
The chatbots I use improve my general language ability.	18	33%	8	15%	28	52%	54
The chatbots I use improve my study grades.	23	43%	13	24%	18	33%	54
The chatbots I use make me more effective as a learner.	17	31%	7	13%	30	56%	54
The use of chatbots is common among my fellow students.	8	15%	25	46%	21	39%	54
Using chatbots goes against the purpose of education.	35	65%	12	22%	7	13%	54
Using chatbots should be prohibited in educational settings.	39	72%	9	17%	6	11%	54
Using chatbots to complete assignments and exams is cheating.	17	31%	14	26%	23	43%	54

Empirical Analysis

Statistical analyses were carried out to test the research hypotheses. Chi-square tests of independence were used to examine whether attitudes toward AI chatbots and reported familiarity/usage differed across gender and field-of-study subgroups. These tests were appropriate because the survey responses were grouped into categorical response categories. The second hypothesis was tested through correlational analysis, with reported ChatGPT usage treated as the dependent variable and attitude items treated as independent variables. The details of the results for testing both hypotheses are given below.

Subgroup Comparison Results

As per the first hypothesis, there are significant differences across gender, academic level, and field of study in the effects of student attitudes toward academic integrity, academic performance, and ethics on their reported chatbot usage. Results of the analysis of survey responses by gender showed insignificant differences when the subgroup analysis across gender groups was carried out. Analysis of reported chatbot usage showed that there were no significant differences in responses regarding attitudes towards AI chatbots across gender (Table 4). Similarly, there were no significant differences in responses across gender for familiarity and usage of chatbots (Table 5).

On the other hand, the analysis of responses across fields of study painted a slightly different picture. As shown in Table 4 and Table 6, there was a significant difference across fields of study also with respect to attitude towards AI chatbots. This was specifically in the context of the question of whether the use of AI chatbots goes against the purpose of education. The chi square test of independence reflects the findings in Table 3, which shows that 65% of all participants disagreed with the statement that the use of AI chatbots goes against the purpose of education (with only 13% agreeing with the statement). Similarly, there was a significant difference across fields of study subgroups with respect to chatbot familiarity and usage specifically related to ChatGPT usage (Table 5 & Table 7).

Correlation Results

The second hypothesis states that student attitudes toward academic integrity, academic performance, and ethics with respect to chatbot usage in education are significantly related to their reported chatbot usage. The correlation analysis (Table 8) showed that there was a strong correlation between having an overall positive attitude towards chatbot in education and the usage of ChatGPT. ChatGPT usage is also strongly correlated with the attitude towards chatbot performance, with reference to the question ‘Chatbots generate better results than I can produce on my own’. Finally, the analysis also showed a correlation between disagreement to the statement that chatbot usage should not be prohibited for academic use and the reported usage of ChatGPT. This further reinforces the idea that there is strong support for use of AI chatbots for academic purposes among students, and the reported high level of usage of AI chatbots such as ChatGPT reflects this attitude.

Table 4

Attitude towards use of AI Chatbots by Gender and Field of Study

	By Gender				By Field of Study			
Attitudes towards chatbots	**Chi Sq**	**df =**	**p-value**	**N**	**Chi Sq**	**df =**	**p-value**	**N**
Overall, I have a positive attitude towards the use of chatbots in education	0.172	2	0.9176	54	24.348	26	0.5561	54
Chatbots generate better results than I can produce on my own.	1.575	2	0.4551	54	31.01	26	0.2279	54
My teacher(s) or university has rules or guidelines on the responsible use of chatbots.	2.167	2	0.3385	54	22.953	26	0.6356	54
Overall, I have a positive attitude towards the use of chatbots in education.	0.653	2	0.7215	54	31.39	26	0.2141	54
The chatbots I use improve my general language ability.	2.068	2	0.3556	54	24.598	26	0.5418	54
The chatbots I use improve my study grades.	0.651	2	0.7221	54	30.777	26	0.2367	54
The chatbots I use make me more effective as a learner.	0.163	2	0.9216	54	27.752	26	0.3708	54
The use of chatbots is common among my fellow students.	0.058	2	0.9716	54	23.668	26	0.5949	54
Using chatbots goes against the purpose of education.	1.036	2	0.5957	54	**49.401**	**26**	**0.0037**	**54**
Using chatbots should be prohibited in educational settings.	0.031	2	0.9845	54	32.958	26	0.1633	54
Using chatbots to complete assignments and exams is cheating.	3.022	2	0.2207	54	23.601	26	0.5988	54

Table 5

Familiarity and Usage of AI Chatbots by Gender and Field of Study

	By Gender				By Field of Study			
Chatbot familiarity and usage	**Chi Sq**	**df =**	**p-value**	**N**	**Chi Sq**	**df =**	**p-value**	**N**
ChatGPT	0.755	3	0.860	54	**78.15**	**39**	**0.0002**	**54**
Bing AI	6.105	3	0.107	54	38.053	39	0.5129	54
Bard AI	2.61	3	0.456	54	25.94	39	0.9461	54
ChatSonic	0.553	2	0.758	54	23.815	26	0.5865	54
OpenAI playground	0.42	2	0.811	54	26.233	26	0.4504	54
Jasper Chat	0.748	2	0.688	54	24.541	26	0.5451	54
Socratic	2.857	2	0.240	54	25.009	26	0.5185	54
DialoGPT	1.354	2	0.508	54	25.946	26	0.4661	54
CoPilot	2.799	3	0.424	54	47.257	39	0.1709	54
YouChat	2.612	2	0.271	54	25.483	26	0.4918	54

Table 6

RQ1 - Survey Questions: Attitude towards use of AI Chatbots across Fields of Study

Attitudes towards chatbots	Chi Sq	df =	p-value	Cramer's V	N
(Disagreement) Using chatbots goes against the purpose of education.	49.401	26	0.0037	0.676	54

Corrected Standard Residuals	Disagree	Don't Know	Agree
Business Management/Administration	0.09	0.37	-0.68
Doctor of Business Administration	-0.99	2.24	-0.72
Doctor of Health Administration	0.25	0.12	-0.72
Doctor of Management	0.42	-0.11	-0.81
Doctor of Management in Information Systems and Tech	-0.81	-0.47	2.42
Doctorate in Education Leadership	-0.81	1.65	-0.36
Education	1.07	-1.15	-0.88
Educational Leadership	0.87	-0.94	-0.72
Healthcare Administration	-0.99	1.18	0.67
Information Systems and Technology	-0.81	-0.47	2.42
Management	0.56	-1.15	0.25
Management & Leadership	-0.81	-0.47	2.42
Management Organizational Development	0.44	-0.47	-0.36
Psychology, Education, Educational Tech	-0.81	-0.47	2.42

Note: Only statistically significant differences are listed

Table 7

RQ1 - Survey Questions: Chatbot familiarity and usage across Fields of Study

Chatbot familiarity and usage	Chi Sq	df =	p-value	Cramer's V	N
ChatGPT	78.15	39	0.0002	0.695	54

Corrected Standard Residuals				
Field of Study	**Unfamiliar**	**Familiar but Never Use it**	**Familiar but Rarely Use it**	**Familiar & Regularly Use it**
Business Management/Administration	-0.53	0.20	0.48	-0.56
Doctor of Business Administration	-0.27	-0.98	0.36	0.50
Doctor of Health Administration	-0.27	1.06	-1.25	0.50
Doctor of Management	-0.30	0.73	0.04	-0.57
Doctor of Management in Information Systems and Tech	-0.14	1.55	-0.62	-0.59
Doctorate in Education Leadership	-0.14	-0.49	-0.62	1.09
Education	-0.33	-1.20	-0.22	1.30
Educational Leadership	-0.27	0.04	0.36	-0.34
Healthcare Administration	-0.27	0.04	0.36	-0.34
Information Systems and Technology	7.21	-0.49	-0.62	-0.59
Management	-0.33	-1.20	0.44	0.61
Management & Leadership	-0.14	1.55	-0.62	-0.59
Management Organizational Development	-0.14	-0.49	0.98	-0.59
Psychology, Education, Educational Tech	-0.14	1.55	-0.62	-0.59

Note: Only statistically significant differences are listed

Table 8

RQ2: Correlation between usage of ChatGPT and attitudes towards use of AI Chatbots in education

Dependent	Spearman_rho	p_value	CI_lower_95	CI_upper_95
Overall, I have a positive attitude towards the use of chatbots in education	0.440	0.001	0.198	0.647
Chatbots generate better results than I can produce on my own.	0.394	0.003	0.126	0.628
My teacher(s) or university has rules or guidelines on the responsible use of chatbots.	0.168	0.224	-0.072	0.389
Overall, I have a positive attitude towards the use of chatbots in education.	0.400	0.003	0.152	0.617
The chatbots I use improve my general language ability.	0.212	0.124	-0.047	0.455
The chatbots I use improve my study grades.	0.256	0.062	0.003	0.479
The chatbots I use make me more effective as a learner.	0.195	0.158	-0.080	0.439
The use of chatbots is common among my fellow students.	0.209	0.130	-0.056	0.464
Using chatbots goes against the purpose of education.	-0.157	0.257	-0.428	0.154
Using chatbots should be prohibited in educational settings.	-0.268	0.050	-0.520	0.020
Using chatbots to complete assignments and exams is cheating.	-0.223	0.105	-0.474	0.030

N=54

Discussion

The analysis of responses across fields of study showed that there was a significant difference across fields of study sub-groups with respect to familiarity and usage specifically with respect to ChatGPT. Similarly, there was a significant difference across fields of study also with respect to attitude towards AI Chatbots in the context of whether the use of AI Chatbots goes against the purpose of education. 65% of all participants disagreed that the use of AI Chatbots goes against the purpose of education and only 13% agreed with this statement. The Chi Square test of independence reflects this finding. The analysis also led to the finding that having an overall positive attitude towards chatbot in education has a strong correlation to the reported usage of ChatGPT.

These findings are aligned with the theoretical framework of the Technological Acceptance Model (TAM) introduced by Davis et al. in 1986, which included variables for attitude toward using, and intention to use technology (Dahri et al., 2024; Dhanya & Ramya, 2025; Kerimbayev et al., 2025; Rathnayake et al., 2025; F. A. Silva et al., 2023). Reported usage of ChatGPT among participants is also strongly correlated with their attitudes towards Chatbot performance, with reference to the question 'Chatbots generate better results than I can produce on my own'. This is also supported by the TAM model with respect to perceived usefulness of technology and its linkage to technology adoption. A strong correlation between disagreement towards the idea that use of Chatbots should be prohibited in education and reported ChatGPT usage is similarly in alignment with the TAM and UTAUT framework as it reflects the influence of participants' attitude towards technology on its usage and adoption (Biloš & Budimir, 2024; Lei et al., 2023).

Implications

The findings of the study indicate generally positive attitudes among students in higher education toward AI-based chatbots. Overall, students perceived AI-based chatbots as useful and reported using AI chatbots, predominantly ChatGPT and, to a lesser extent, CoPilot, in their academic work. At the same time, there was a degree of caution and uncertainty in the use of this technology. This was evident because there was no significant correlation between reported chatbot usage and students' perceptions that chatbots improve language ability, improve grades, or make them more effective learners. There was also no clear and consistent response across participants regarding whether using chatbots to complete assignments and exams constitutes cheating, with responses distributed across agree, disagree, and "don't know" categories. This points to an apparent lack of clarity regarding acceptable and unacceptable uses of AI chatbots in academic work.

Given these challenges, clearer tools, frameworks, and strategies need to be established to guide institutional responses and best practices. Higher education institutions must balance academic integrity with fairness in evaluating student performance, transparency in the use of AI-generated information, and respect for student privacy. Further investments in chatbots that improve learning effectiveness while integrating features that safeguard academic integrity and promote trust may also improve responsible adoption.

Theoretical Implications

While the field of AI is rapidly evolving, this study validated many of the findings reported in Stöhr et al. (2024) while concentrating on advanced degree holders. Differences across fields of study with respect to chatbot familiarity and usage, particularly for ChatGPT, continue to exist, as does the relationship between student attitudes toward chatbot usage and

their reported use of ChatGPT. Further, the findings of this study align with the Technological Acceptance Model (TAM) in terms of the relationship between attitudes toward AI use and the usage of AI chatbots. The use of ChatGPT in this study was strongly correlated with fewer variables than in Stöhr et al. (2024). This may suggest that, as generative AI capabilities continue to evolve, chatbot usage among students is also changing and giving rise to new questions and concerns. By improving chatbot capabilities while also addressing concerns related to academic integrity and ethical use, student attitudes toward these tools may become more favorable in the future.

Managerial Implications

The findings of this study can be valuable to businesses and academic institutions in developing AI policy for education, by helping to understand how students are interacting with AI and their attitudes toward ethical behavior. It can assist institutions in formulating policies that uphold ethical standards in AI-assisted learning while taking advantages of the benefits that AI-assisted tools can provide to students. It can offer valuable insights for educators, including teachers, professors, and academic leaders, in developing a more effective and inclusive educational framework to prevent cheating and promote equitable learning environments. Additionally, it can support efforts to safeguard student rights, ensure that educational opportunities remain accessible, and uphold ethical standards for all.

Limitations

This study has several limitations. First, the sample size was small (N = 54), which limits statistical power and the generalizability of the findings. Second, the sample was drawn from a single private, online university, so the results should not be generalized to all higher education settings without caution. Third, the participant pool consisted primarily of doctoral students, which provides insight into advanced learners but excludes undergraduate and broader graduate student populations. Future studies should include larger and more diverse samples across multiple institutions to strengthen external validity and allow for more robust subgroup analysis.

Conclusions and Future Recommendations

Asiksoy (2024) points out the increasing use and complexity of artificial intelligence (AI) accentuates the importance of addressing ethical dimensions which include students' attitudes toward AI ethics, fairness, transparency, privacy and responsibility. AI integration in the classroom provides many new opportunities and avenues for higher education. As the technological capabilities are evolving at a faster pace than higher education can create policy, they are surfacing new concerns about academic integrity and ethical use and causing a level of uncertainty for administrators, faculty, and students. For developing institutional guidelines, it is important to understand how students are interacting with AI and their attitudes toward ethical behavior.

Barrot (2024) recommended that the integration of AI technology requires careful consideration of ethical, practical, and pedagogical challenges to ensure its responsible and effective use. With the move to include AI in multiple areas of teaching and learning within an institution, it becomes critical to establish academic policies and protocols that will maintain and strengthen academic integrity and fairness (Grájeda et al., 2024). This study investigated the demographic differences in AI chatbot usage and the relationship of student attitudes toward academic integrity, academic success, and ethical behavior, and their reported chatbot usage. The research findings indicated the overall positive attitude towards AI chatbots on the part of

students, while AI chatbots' ability to improve their language ability, to improve their grades and to make them more effective learners is yet to be recognized by students.

The study highlights students' interest in using chatbots for academic purposes while also reflecting continued uncertainty regarding ethical use in academic work. These findings reinforce the need for academic institutions to develop clearer tools, frameworks, and strategies for AI use. Such efforts should help balance academic integrity, fair evaluation of student performance, transparency of information, and respect for student privacy. Future studies should include larger and more diverse samples to provide additional insight into how these attitudes vary across institutional contexts.

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