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Undergraduate Students' Perceptions of ChatGPT's Role in Academic Assignments

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Abstract

As artificial intelligence (AI) continues to influence global educational practices, understanding students' perceptions of AI tools has become increasingly important. This study examines undergraduate students' perceptions of ChatGPT and its influence on their academic assignments within the context of higher education in Pakistan. A quantitative, cross-sectional research design was employed. Using convenience sampling, a total of 535 undergraduate students from various universities in Lahore, Pakistan, participated in the study. Descriptive statistics and a Chi-square test of independence were applied to examine the associations between demographic variables and the students' perceptions of ChatGPT. Findings revealed that the majority of students held positive perceptions of ChatGPT, describing it as amusing, practical, and effective for academic use. Statistically significant gender and age-based differences were observed in several areas, including ease of use ($p = 0.000$), ethical concerns such as plagiarism ($p = 0.001$), and perceived impact on learning and social skills ($p = 0.005$). While younger students showed greater enthusiasm, older students expressed more caution and concern regarding its academic implications. It is recommended that educational institutions promote the responsible integration of AI tools, such as ChatGPT, into academic environments. Faculty should guide students in the ethical and practical use of these tools while addressing potential drawbacks such as overdependence and academic dishonesty.

Keywords: ChatGPT, Student Perceptions, Academic Assignments, Higher Education, Learning Outcomes, Educational Technology

Introduction

The emergence of artificial intelligence (AI) technologies in education has significantly transformed how students engage with learning materials and academic tasks. Among these tools, ChatGPT—developed by OpenAI—has gained rapid popularity for its capabilities in assisting with writing, brainstorming, and problem-solving. While its utility in academic contexts is widely recognized (Embark & Amin, 2025; Kasneci et al., 2023), debates continue to emerge regarding its ethical use, potential misuse, and implications for academic integrity (Jmaiele et al., 2025; Tossell et al., 2024).

Studies suggest that students generally perceive AI tools like ChatGPT as helpful for enhancing productivity, improving understanding of complex topics, and increasing academic confidence (Ausat et al., 2023; Rudolph et al., 2023). However, concerns also arise about students' over-reliance on AI, the risk of superficial learning, and issues of plagiarism, particularly in contexts where digital literacy and institutional policies on AI use remain underdeveloped (Cotton et al., 2023; Michel Villarreal et al., 2023). These challenges are particularly pronounced in developing countries like Pakistan, where the digital divide, infrastructure limitations, and lack of teacher preparedness restrict the effective integration of AI into mainstream education (UNESCO, 2023; Ahmed et al., 2023).

In Pakistan, several national initiatives, including the Digital Pakistan Policy (2018), the Presidential Initiative for Artificial Intelligence and Computing (PIAIC), and the Punjab government's e-Rozgaar program, aim to promote AI literacy. However, their implementation remains inconsistent across educational institutions due to limited infrastructure, weak enforcement mechanisms, and a lack of targeted teacher training (Government of Pakistan, 2023). Consequently, students often rely on AI tools without formal instruction, leading to uncertainty about ethical boundaries and responsible usage (Ibeh et al., 2025; Zamora, 2023). These gaps in digital guidance exacerbate academic risks and raise important questions about students' preparedness for AI-enhanced learning environments.

Moreover, cultural factors and demographic characteristics may influence how students perceive and engage with AI technologies (Wang & Fan, 2025). Studies reveal mixed findings on gender and age-related differences, with male and younger students typically reporting greater confidence in using digital tools, while females and older learners approach them with more caution (Sun et al., 2025; Zhai, 2022; Khalil & Er, 2023; Empere et al., 2023). However, such generalizations require further exploration, particularly within non-Western academic contexts where cultural, institutional, and pedagogical norms vary significantly (Brauner et al., 2024; Etheredge et al., 2025).

Despite growing global research on AI integration in education, a notable lack of empirical studies from the Global South, particularly in Pakistan, remains. In most Pakistani universities, exam-oriented learning still dominates, and institutional support for digital tools remains insufficient (Siddiqui, 2021; Shidiq, 2023). Academic policies related to plagiarism and the ethical use of AI are either weakly enforced or absent altogether, further complicating students' understanding of responsible AI usage (Mahmood, 2020; Rehman et al., 2022).

Research Methodology

Research Design and Sampling Technique

This study adopted a quantitative, cross-sectional survey design to investigate undergraduate students' perceptions of ChatGPT's role in academic assignments across diverse institutional settings. The study population consisted of undergraduate students enrolled in various disciplines at public, private, and semi-government universities in Lahore, Pakistan. A total of 535 undergraduate students were selected using a convenience sampling technique, which allowed for the selection of accessible and willing participants across five universities.

Research Instrument

A structured, self-administered questionnaire was used as the primary data collection tool. The questionnaire comprised two main sections. The first section gathered demographic information, including gender, age, and type of institution. The second section included 20 closed-ended items designed to assess students' perceptions of the impact of ChatGPT on their academic work, including assignments, presentations, and projects. These 20 items were divided equally to reflect positive and negative perceptions of ChatGPT's use in academia. Responses were recorded on a five-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). The instrument was designed to capture the nuanced views of students regarding the benefits and potential drawbacks of using AI tools in educational settings.

Measures

The independent variables consisted of students' demographic characteristics, specifically their gender and age. The dependent variables in this study were students' positive and negative perceptions of using ChatGPT for academic purposes. These included perceptions of ChatGPT's utility in enhancing learning, fostering creativity, and supporting academic productivity, as well as concerns about dependency, shallow learning, and academic dishonesty.

Data Collection Procedure

Data collection was conducted physically by visiting the selected university campuses. Each student was informed about the purpose of the study and assured of confidentiality and anonymity. Participation was entirely voluntary, and informed consent was obtained from all respondents before their involvement in the study. Upon completion, students were allowed to review their responses, further enhancing the credibility and transparency of the data collection process.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. The responses were coded and tabulated for analysis, with the Likert scale responses grouped as follows: *Strongly Agree* and *Agree* were combined into a single category, as were Strongly Disagree and Disagree; meanwhile, *Neutral* responses remained unchanged. Descriptive statistics such as frequencies and percentages were calculated to summarize the demographic characteristics. We conducted bivariate analysis using Somer's D to examine associations between demographic variables and students' perceptions about ChatGPT, with all analyses carried out at a significance level of $p \leq 0.05$.

Table 1

Demographic Characteristics of Student Participants (N = 535)

Demographic Variable	Frequency	Percentage (%)
Gender		
Male	264	49.3
Female	271	50.7
Age Group		
Below 18 years	21	3.9
18–20 years	276	51.6
20–22 years	201	37.6
Above 23 years	37	6.9
Type of Institution		
Public	185	34.6
Private	239	44.7
Semi-government	111	20.7

Table 1 shows the demographic information of the student sample. Female students comprised a slightly larger portion of the sample (50.7%) compared to male students (49.3%). Most respondents were between 18 and 22 years of age, representing nearly 90% of the total sample. Regarding institutional affiliation, the majority were enrolled in private institutions, followed by public and semi-government colleges.

Table 2

Students' Positive Perceptions of Use of ChatGPT by Demographic Characteristics

Statements	Demographic Group	Disagree (%)	Neutral (%)	Agree (%)	(p)
Enhances brainstorming and assignment structuring	Male	4.0	17.9	78.0	0.169
	Female	1.3	14.0	84.7	
	Age <18	0.0	17.6	82.4	0.511
	Age 18–20	1.9	7.7	90.4	
	Age 20–22	0.0	13.2	86.8	
	Age >23	4.3	18.5	77.2	
Provides access to diverse academic perspectives	Male	19.1	16.8	64.2	0.221
	Female	12.1	18.5	69.4	
	Age <18	11.8	11.8	76.5	0.008
	Age 18–20	5.8	13.5	80.8	
	Age 20–22	18.4	5.3	76.3	
	Age >23	21.0	16.7	62.3	
Clarifies complex concepts and boosts confidence	Male	5.2	25.4	69.4	0.342
	Female	7.0	19.1	73.9	
	Age <18	11.8	23.5	64.7	0.309
	Age 18–20	9.6	19.2	71.2	
	Age 20–22	10.5	28.9	60.5	
	Age >23	2.5	22.8	74.7	
Assists multilingual learners with language and translation	Male	9.8	17.9	72.3	0.002
	Female	1.3	14.7	84.0	
	Age <18	0.0	23.5	76.5	0.566
	Age 18–20	5.8	11.5	82.7	
	Age 20–22	5.3	23.7	71.1	
	Age >23	8.1	16.8	75.2	
Encourages independent learning through guided prompts	Male	12.1	16.8	71.1	0.005
	Female	6.4	7.6	86.0	
	Age <18	0.0	23.5	76.5	0.548
	Age 18–20	9.6	5.8	84.6	
	Age 20–22	10.5	15.8	73.7	
	Age >23	11.1	13.6	75.3	
Fosters digital literacy via AI-integrated workflows	Male	2.3	9.2	88.4	0.853
	Female	3.2	8.3	88.5	
	Age <18	5.9	17.6	76.5	0.788
	Age 18–20	1.9	7.7	90.4	
	Age 20–22	0.0	13.2	86.8	
	Age >23	3.1	6.8	90.1	

Simulates peer feedback for assignment reflection	Male	18.5	17.9	63.6	0.000
	Female	6.4	8.9	84.7	
	Age <18	14.5	17.0	68.5	0.094
	Age 18–20	10.9	10.3	78.8	
	Age 20–22	17.6	0.0	82.4	
	Age >23	5.8	7.7	86.5	
Reduces deadline anxiety through instant support	Male	16.2	20.2	63.6	0.003
	Female	7.6	12.1	80.3	
	Age <18	15.2	17.6	67.3	0.001
	Age 18–20	9.1	15.2	75.8	
	Age 20–22	17.6	5.9	76.5	
	Age >23	7.7	11.5	80.8	
Increases accessibility in low-resource academic settings	Male	7.5	22.5	69.9	0.003
	Female	6.4	16.6	77.1	
	Age <18	8.5	20.6	70.9	0.000
	Age 18–20	5.5	18.8	75.8	
	Age 20–22	11.8	11.8	76.5	
	Age >23	3.8	13.5	82.7	
Refines grammar, vocabulary, and coherence in writing	Male	11.6	29.5	59.0	0.005
	Female	6.4	25.5	68.2	
	Age <18	11.5	24.2	64.2	0.000
	Age 18–20	6.7	30.9	62.4	
	Age 20–22	5.9	29.4	64.7	
	Age >23	5.8	23.1	71.2	

Our bivariate analysis shows that students' responses to the statement *"Assists multilingual learners with language and translation"* (p = 0.002), females (84.0%) reported significantly higher agreement than males (72.3%). This suggests that female students are more likely to view ChatGPT as a supportive tool for overcoming language barriers in academic contexts. Similarly, the statement *"Encourages independent learning through guided prompts"* showed a significant gender difference (p = 0.005), with 86.0% of females agreeing compared to 71.1% of males.

The item *"Simulates peer feedback for assignment reflection"* revealed a highly significant gender effect (p = 0.000). A greater proportion of females (84.7%) agreed compared to males (63.6%), highlighting that female learners may rely more on ChatGPT for reflective feedback in their academic work. In the case of *"Reduces deadline anxiety through instant support,"* both gender (p = 0.003) and age (p = 0.001) differences were significant. Female students (80.3%) were more likely than males (63.6%) to value ChatGPT for stress reduction, while students above 23 years (80.8%) showed the highest agreement among age groups.

The statement *"Increases accessibility in low-resource academic settings"* demonstrated significant variation for both gender (p = 0.003) and age (p = 0.000). Females (77.1%) reported higher agreement than males (69.9%), and older students, particularly those above 23 years (82.7%), expressed the strongest endorsement. Also, the statement, *"Refines grammar, vocabulary, and coherence in writing,"* showed significant associations for both gender (p = 0.005) and age (p = 0.000). Female students (68.2%) were more likely to acknowledge ChatGPT's writing support compared to males (59.0%), while students above 23 years (71.2%) also rated it more positively. This emphasizes the tool's perceived value among female and older learners in enhancing academic writing quality.

Table 3:

Students' Negative Perceptions of Use of ChatGPT by Demographic Characteristics

Statements	**Demographic Group**	**Disagree (%)**	**Neutral (%)**	**Agree (%)**	**(p)**
Discourages critical thinking and originality	Male	19.1	21.4	59.5	0.001
	Female	8.3	14.0	77.7	
	Age <18	17.6	17.0	65.5	0.162
	Age 18–20	10.3	18.8	70.9	
	Age 20–22	5.9	29.4	64.7	
	Age >23	7.7	9.6	82.7	
Promotes superficial learning through	Male	6.9	15.6	77.5	0.773

uncritical copying					
	Female	5.1	15.3	79.6	
	Age <18	7.3	17.0	75.8	0.449
	Age 18–20	4.8	13.9	81.2	
	Age 20–22	5.9	11.8	82.4	
	Age >23	5.8	5.8	88.5	
May generate inaccurate or misleading academic information	Male	9.8	26.0	64.2	0.206
	Female	7.6	19.1	73.2	
	Age <18	5.5	21.2	73.3	0.001
	Age 18–20	12.1	24.2	63.6	
	Age 20–22	5.9	11.8	82.4	
	Age >23	9.6	21.2	69.2	
Reinforces biases from training data	Male	9.8	28.3	61.8	0.485
	Female	10.8	33.8	55.4	
	Age <18	10.9	25.5	63.6	0.100
	Age 18–20	9.7	36.4	53.9	
	Age 20–22	11.8	23.5	64.7	
	Age >23	3.8	36.5	59.6	
Enables plagiarism and unethical assignment practices	Male	23.7	15.8	60.5	0.005
	Female	22.8	24.7	52.5	
	Age <18	10.4	27.1	62.5	0.000
	Age 18–20	0.0	23.1	76.9	
	Age 20–22	11.8	17.6	70.6	
	Age >23	11.1	13.6	75.3	
Reduces classroom engagement	Male	23.1	22.0	54.9	0.019
	Female	11.5	22.9	65.6	
	Age <18	13.9	24.2	61.8	0.207
	Age 18–20	21.2	20.6	58.2	
	Age 20–22	11.8	17.6	70.6	
	Age >23	9.6	17.3	73.1	
Lacks alignment with local curricula	Male	7.5	13.3	79.2	0.023
	Female	2.5	7.6	89.8	
	Age <18	3.6	9.1	87.3	0.280
	Age 18–20	6.7	12.1	81.2	
	Age 20–22	11.8	17.6	70.6	
	Age >23	1.9	7.7	90.4	
Obscures actual student abilities, hindering authentic assessment.	Male	16.8	17.3	65.9	0.000
	Female	2.6	17.3	80.1	
	Age <18	13.3	17.0	69.7	0.001
	Age 18–20	6.7	17.7	75.6	
	Age 20–22	11.8	17.6	70.6	
	Age >23	3.8	15.4	80.8	
Blurs the ethical boundaries between help and dishonesty	Male	12.1	31.2	56.6	0.029
	Female	7.6	21.7	70.7	
	Age <18	12.1	27.9	60.0	0.325
	Age 18–20	7.9	25.5	66.7	
	Age 20–22	5.9	23.5	70.6	
	Age >23	13.5	26.9	59.6	
Undermines peer collaboration	Male	9.2	20.2	70.5	0.566
	Female	7.6	24.8	67.5	
	Age <18	9.1	17.0	73.9	0.005
	Age 18–20	7.9	27.9	64.2	
	Age 20–22	5.9	17.6	76.5	
	Age >23	5.8	11.5	82.7	

Table 3 shows that the students with the statement *"Discourages critical thinking and originality"* showed a significant gender difference ($p = 0.001$), with a higher proportion of females (77.7%) agreeing compared to males (59.5%). This suggests that female students are more cautious

about the risk of overreliance on ChatGPT undermining creativity and originality in academic work. Age-related variation was significant for the statement *"May generate inaccurate or misleading academic information"* ($p = 0.001$). Students aged 20–22 years (82.4%) reported the highest agreement, whereas those aged 18–20 years showed comparatively lower levels (63.6%). This finding indicates that mid-range learners are more sensitive to the potential risk of misinformation generated by ChatGPT.

Similarly, *"Enables plagiarism and unethical assignment practices"* demonstrated significant variation across both gender ($p = 0.005$) and age ($p = 0.000$). Males (60.5%) were more likely than females (52.5%) to perceive ChatGPT as facilitating unethical practices. Among age groups, students aged 18–20 years (76.9%) and those above 23 years (75.3%) expressed higher agreement, suggesting heightened awareness of plagiarism risks among older learners and mid-level undergraduates. The statement *"Reduces classroom engagement"* revealed a significant gender difference ($p = 0.019$). Female students (65.6%) were more likely than males (54.9%) to believe that ChatGPT use may diminish active participation in classroom discussions, reflecting a stronger concern among females regarding its impact on collaborative learning.

For *"Lacks alignment with local curricula"* ($p = 0.023$), females (89.8%) reported significantly higher agreement than males (79.2%). This highlights that female students are more critical of ChatGPT's applicability to localized educational requirements. The item *"Obscures actual student abilities, hindering authentic assessment"* showed highly significant associations for both gender ($p = 0.000$) and age ($p = 0.001$). Female students (80.1%) were substantially more likely than males (65.9%) to view ChatGPT as compromising fair evaluation. Age-wise, the highest agreement was recorded among students above 23 years (80.8%), while those aged 18–20 years showed comparatively lower levels (75.6%). These results suggest that both females and older students are more concerned about ChatGPT masking genuine student performance.

Gender differences also emerged in *"Blurs the ethical boundaries between help and dishonesty"* ($p = 0.029$), with 70.7% of females agreeing compared to 56.6% of males. This indicates stronger ethical concerns among female students regarding the fine line between legitimate academic assistance and academic misconduct. Also, the statement *"Undermines peer collaboration"* exhibited significant age-related variation ($p = 0.005$). Agreement was highest among students above 23 years (82.7%) and lowest among those aged 18–20 years (64.2%), suggesting that older learners are more apprehensive about ChatGPT reducing the value of direct peer-to-peer interaction.

Discussion

The integration of artificial intelligence (AI) tools, particularly ChatGPT, into higher education has generated both enthusiasm and apprehension among students. The findings of this study reveal a predominantly positive perception of ChatGPT among undergraduates, with many students highlighting its usefulness in facilitating academic tasks such as assignments, presentations, and projects. However, these perceptions are not without reservations. While some students embrace ChatGPT as a supportive learning tool, others express concerns about dependency, ethical implications, and the limitations it may pose to deeper learning processes.

The positive responses align with prior research that emphasis the academic utility of ChatGPT. For instance, Bishop (2023) affirms that ChatGPT can complement traditional teaching methods by offering tailored support and immediate access to academic content. Similarly, Suri (2021) emphasizes the accessibility of ChatGPT outside formal instructional hours, which enhances student autonomy in learning. Wang et al. (2020) argue that AI tools like ChatGPT are capable of providing individualized feedback, thereby promoting student-centered learning. Consistent with these findings, our study confirms that students perceive ChatGPT as a platform that facilitates personalized learning, enhances brainstorming and structuring of assignments, and provides access to diverse perspectives. In addition, many students reported that ChatGPT clarifies complex concepts, boosts confidence, and reduces deadline-related anxiety through instant support. These insights further highlight ChatGPT's role in encouraging independent learning, simulating peer feedback, and fostering digital literacy in AI-integrated academic workflows.

However, while students acknowledge these benefits, they also voice critical concerns regarding the potential negative impact of ChatGPT on their learning trajectories. A significant proportion of students, particularly older undergraduates, reported apprehensions about the ethical implications of ChatGPT, including its potential to disseminate misinformation, blur ethical

boundaries between academic help and dishonesty, and contribute to plagiarism or other unethical assignment practices. These findings align with Robert's (2023) observations, which highlight issues such as data privacy, algorithmic bias, and overreliance on machine-generated content. Hernandez (2020) further contends that while AI may enhance access to knowledge, it cannot replace the role of the human teacher in fostering critical thinking and reflective dialogue. Our results support this position, as students expressed concerns that ChatGPT may obscure actual student abilities, hinder authentic assessment, discourage originality, and reduce classroom engagement when relied upon excessively.

Interestingly, gender and age differences emerged in students' perceptions. Female students were significantly more likely to describe ChatGPT as user-friendly, supportive in meeting academic deadlines, and helpful for multilingual learners and guided prompts. They also showed stronger agreement that ChatGPT simulates peer feedback and enhances writing skills such as grammar and coherence. At the same time, females expressed greater concern than males about ethical issues, reporting ChatGPT as more likely to blur boundaries between support and dishonesty, facilitate plagiarism, and hinder authentic assessment. This observation suggests a dual dynamic: while female students may adapt more readily to AI for academic support, they also demonstrate heightened ethical sensitivity. On the other hand, older students consistently showed stronger recognition of both benefits and risks. Those above 23 years were more inclined to value ChatGPT for reducing deadline anxiety, improving accessibility in low-resource settings, and refining academic writing, but they also expressed greater concern about misinformation, reduced peer collaboration, and the erosion of critical and independent learning skills.

Negative sentiments also focused on the cognitive limitations of ChatGPT. Several students reported that the tool does not always understand context-specific queries, which can hinder the learning process. This was particularly true for younger students, who often appeared frustrated with the tool's responses. These findings highlight a possible gap in digital communication skills and raise important considerations about how AI can be effectively integrated into teaching methods that foster both efficiency and understanding. Moreover, a large proportion of students expressed concern that ChatGPT could facilitate plagiarism and academic dishonesty. The gender-based difference in these perceptions reflects varying degrees of ethical sensitivity and points to the need for digital ethics training. Students across all demographics also voiced concern about overreliance on ChatGPT, suggesting that AI might reduce opportunities for independent thinking and academic ownership.

Despite these concerns, it is clear that ChatGPT holds considerable potential to enhance teaching and learning when implemented responsibly. Students acknowledge that while ChatGPT is not a substitute for human educators, it can be a valuable supplement that enhances accessibility, motivation, and efficiency in academic work. These insights support the conclusions of Smith (2019) and Jones et al. (2022), who argue that AI tools can contribute positively to academic performance when integrated with pedagogical intention. Nonetheless, White (2021) warns against overreliance, emphasizing the irreplaceable role of human educators in nurturing critical thought and communication skills. While many students appreciate its capacity to provide academic support, others caution against its drawbacks, particularly its ethical implications and potential to diminish cognitive engagement. These findings emphasize the need for a balanced and well-regulated approach to AI integration. Educators, policymakers, and researchers must work collaboratively to harness the educational benefits of ChatGPT while addressing its limitations through the development of appropriate guidelines, digital literacy training, and the continued reinforcement of teacher-led learning. Only through such a balanced approach can AI's transformative potential be fully realized in creating inclusive, ethical, and practical learning environments.

Conclusion

The study concludes that the majority of students find ChatGPT practical, engaging, and supportive for completing assignments. Others express concerns about academic dishonesty, reduced critical thinking, and overreliance on AI. Perceptions varied across age groups, with younger students showing greater enthusiasm and older students demonstrating more caution. Despite these differences, the findings highlight the dual nature of ChatGPT, both as a beneficial academic tool and a source of ethical and pedagogical concern. To ensure its responsible integration into higher education, institutions must develop clear usage guidelines, promote digital literacy, and emphasize the

importance of human guidance in the learning process. ChatGPT holds promise—but its value depends on how thoughtfully it is used in educational settings.

Recommendations

To promote the responsible and effective use of ChatGPT in higher education, future studies could support longitudinal research to evaluate its impact on student performance, learning outcomes, and potential dependency over time. Teachers must play a key role in guiding students to use ChatGPT as a supportive tool while preserving independent thought, with professional development helping educators model ethical AI usage. Before widespread adoption, ethical concerns—including data privacy, algorithmic bias, academic integrity, and equitable access—should be addressed through awareness campaigns and institutional discourse. Additionally, academic leaders should collaborate on developing pedagogical frameworks and institutional policies, crafting clear guidelines and training resources that align AI integration with broader educational goals and safeguard against misuse.

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