



Impact Of Generative AI On Students: A Descriptive Study Based On “Demographic Differences Among Students In The Adoption Of Generative Artificial Intelligence In Higher Education.”

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Abstract

The significance of artificial intelligence is increasing in academia, particularly in India. With this, the awareness of AI is being called into question. There is a need to assess students' level of AI for adapting learning, identify the factors influencing their awareness, and investigate the challenges they face in using these tools. The purpose of this study is to examine the level of awareness among students about AI in education and its impact on students' creativity. This employed a quantitative approach, distributing a questionnaire both offline and online via Google Forms. A survey of undergraduate, postgraduate, and research scholars was conducted through offline and online Google forms to measure the perceptions of students toward the usage of Gen AI as a learning tool. Data were collected from 102 students using a structured five-point Likert scale and analyzed using descriptive statistics, including percentages and averages, and by applying the t-test, one-way ANOVA, and Levene's test. This study found that there is no significant difference among students on the basis of gender, age, or academic level. It showed a strong level of awareness of GenAI, including ChatGPT, among students in education, particularly for adaptive learning purposes. Despite providing valuable insight into students' perception

of generative AI, the study had some limitations, indicating largely non-significant differences across gender, age, area, and academic level, suggesting limited variability in responses, which may reduce the accuracy of the statistical test to distinguish group variability. However, the study also identifies some major challenges, including data privacy, transparency, and trust issues, which create barriers to the adaptation of Gen AI among students in education.

Keywords: Generative AI, Natural Language Processing, ChatGPT, Awareness, Creativity.

Introduction

Over the last 2 decades, the evolution of technology in education has changed the learning patterns of students. The traditional education structure failed to provide personalized learning according to learners' diverse learning needs. As a subset of artificial intelligence, Generative AI-based tools such as ChatGPT, Gemini, and Perplexity, etc., have become prevalent for students in education. Traditionally, students used Google and other search engines to complete their academic tasks. But with the passage of time, students wanted such types of tools that are personalized and fulfill their diverse needs. Generative AI refers to the use of natural language processing and machine learning to provide individualized learning and improve the learning performance of students. It provides real-time feedback and other routine activities by automating the system (Kaur et al., 2025). The importance of Generative AI continues to grow among students, and it has the potential to provide user-friendly information and an interactive experience. Recent developments in technology have enabled chatbots like ChatGPT to create human-like text and make it personalized for users. The incorporation of artificial intelligence in education enhances the attention of students interactively and appealingly. The market size of artificial intelligence in 2025 is valued between \$6.9 billion and \$7.05 billion, and it's expected to grow to \$32.27 billion by 2030. It is predicted that GenAI will change the global education system by 2030. The purpose of AI in education is to create an individualized learning environment (Martinez et al., 2023). The benefit of Generative AI in education is explained as an anomaly because it is possible that it becomes an alternative to independent learning, but it also has the capacity to empower positive forces among students in higher education (Hamerman et al., 2024). Generative AI reforms the traditional learning environment by providing personalized tutoring to students, particularly in online and distance learning (Odoh & Ekene, 2025). Incorporating Gen AI into education offers a distinctive opportunity to inspect the interaction between innovation and emotional dimensions, whereas it increases anxiety for those who are not aware of these technologies (Kohnke & Moorhouse, 2025). All developing countries encounter quality education as a major challenge, but AI is capable of transforming linguistic problems according to the diverse students. AI has the potential to solve the problem of quality education and access issues observed in the Indian education sector. It effectively identifies the need for targeted student interventions, significantly reducing dropout rates and enhancing vocational training outcomes (National Strategy for Artificial Intelligence by NITI Aayog). To fully grasp the potential of AI, the "Ministry of Electronics & IT" implemented the India AI Mission, aimed at strengthening self-reliance and ensuring responsible and inclusive adoption of AI. YUVA AI for all is a big initiative taken by the Government of India to help every citizen understand AI without any fees. This study investigates Gen AI adoption across diverse contexts, such as Awareness, Belief, and Creativity, on learning performance and career opportunities for students across diversified socioeconomic backgrounds. Therefore, we need to understand the selected variables that help to conclude. Which are as follows:

Awareness

For this study, students' awareness of Gen AI means their familiarity with these tools, such as ChatGPT, Gemini, Perplexity, etc., and how these tools help students in their academics. Awareness refers to the degree to which students perceive and understand artificial intelligence tools and their use in practical implementation. It affects an individual's desire to adapt to an artificial intelligence-based solution, which impacts learning outcomes (Odoh & Ekene, 2025). It can be defined as a multifaceted form encompassing an individual's level of knowledge, habits, and understanding of ethics and social

responsibility, and its future impacts (Sahin et al.2025). It is essential to create awareness among students that differentiates conventional AI from Gen AI. Conventional AI is designed for specific and generally rule-based tasks. In contrast, Gen AI can generate new content from previously learned data. Stuart Marshal Bender (2024) suggested that, in the context of evolving Generative AI technologies, students must be aware of the capabilities of AI in text, video, and audio generation.

Belief

Belief can be defined as an individual statement regarding right or wrong about anything or any person. It includes evaluative and judgmental statements, which differ from knowledge that is based on objective facts. Beliefs are fundamental for predicting the behavior and attitude of any person (Fishbein and Ajzen, 1977). When someone learn a particular fact, for example, when students read that generative artificial intelligence tools are beneficial for students, they acquire a new belief. Bewersdorf & Hornberger (2025) suggested that fostering a positive attitude toward artificial intelligence and providing opportunities for hands-on interaction directly contribute to developing self-efficacy among students.

Creativity

The emergence of Generative AI alters the conceptual understanding of creativity. Traditionally, it was understood as a divine gift from God. Now, with a paradigm shift in the concept of creativity, the tasks of humans are solved by artificial intelligence (Yasuda & Maruyama, 2025). Gen AI is reshaping creativity, introducing a novel mode of system-extensive mixture, and challenging traditional originality. Akanksha et al (2025) examined the influence of Gen AI on students' creativity. The paper highlights that GenAI increases students' creativity and problem-solving ability. But more study should be conducted to inspect the longitudinal impact of Gen AI on students' creativity.

The purpose of this study is to assess students' viewpoints regarding the use of Gen AI within the educational context. To achieve this, the study will focus on the following objectives;

1. To investigate students' awareness of Gen AI tools.
2. To assess students' beliefs in the application of Gen AI.
3. To identify variations in students' viewpoints of Gen AI on the basis of demographic features.

Literature Review

Dakani & Safa (2023) conducted a study to assess the attitudes of teachers and students toward AI tools in the second language (L2) classroom. The primary aim of this research was to investigate how frequently students use AI tools and for what academic purposes. The study utilized a descriptive, qualitative, and mixed-methods approach to gather data from students in Beirut, Lebanon. The findings revealed that 85% of students reported using AI unethically for their assignments and projects. However, it is important to note that this study was based on a sample of only 46 university students, which may not be sufficient to fully represent the opinions and attitudes of all students regarding AI and its applications. Roadway & Schman (2023) identify how students' perception of GenAI affects their satisfaction and learning performance. This study suggested that higher education institutions should use these tools carefully. Samala et al. (2024) suggested that ChatGPT and other GenAI tools' effectiveness depends on the use and regulations. ChatGPT supports a wide range of tasks for students and researchers. Its features include generating texts, translating language, role-playing, and data analysis for students in education. A study conducted by Rafiq et al. (2024) found that digital tools enhance students' motivation and academic performance in education. Jain & Raghuram (2024) conducted a study to identify the factors that influence students' adoption of GenAI in education. The aim of this study was to examine the willingness of students to use Gen AI in education. For this purpose, this study employed a questionnaire to collect data from students at various universities. This study found that ease of use, risk, trust, and technological knowledge had a significant impact on students' use

of GenAI in education. Mittal et al. (2024) highlight the potential of GenAI in the field of education and its ability to provide customized content. This study concluded that Gen AI is an emerging and progressing technology, and its applications are not limited to students but also to tutors. Imran & Almusharraf (2024) conducted a study to examine the relationship between Gemini and its educational outlook. This study found some significant challenges and ethical issues that must be taken into consideration to ensure its responsible integration in education. Kaur et al. (2025) examine the impact of artificial intelligence on education to achieve the vision of Viksit Bharat by 2047. This paper highlights some challenges and obstacles that need to be overcome for the proper implementation of AI in education. Chugh et al. (2025) investigate the impact of GenAI as a learning-assisted tool in education. This study used qualitative research methodology to achieve the objective. This study found a positive attitude among students toward GenAI as a learning tool in ICT education. Overall, participants expressed mixed opinions regarding the impact of Gen AI on academic performance, educational context, and trust. This study recommended that institutions should make clear policies and guidelines for the proper implementation of GenAI in ICT education. Yu & James (2025) examined the guidelines issued by the top universities regarding the use of GenAI in academic activities. For this purpose, this study employed a mixed-method approach to provide a detailed understanding of institutional responses to GenAI. The study highlights the need for flexible guidelines and policies for stakeholders in higher education. Joshi et al. (2021) analyze how AI helps to improve outcomes of students in developing countries. This study aimed to examine the perception of students and teachers regarding the effectiveness and usefulness of GenAI in education. This study showed that teachers and students perceived AI as a beneficial tool that helped them to develop skills in education. This study also recommended that optimal use of AI could produce better results. Ballesteros et al. (2024) conducted a study to examine the attitude of students toward the application of GenAI in education. This study found that students show positive attitudes regarding the adoption of GenAI in education. Chada (2025) describes the transformative potential of GenAI and emerging technology in higher education, using case studies and new teaching methods that are reshaping learning. Raman et al. (2025) proposed a framework to address the challenges of AGI development. The findings of the study emphasize the need for interdisciplinary collaboration to improve transparency and governance. The study suggests some strategies for equitable access and sustainable AI integration. Integrating the large language model in education brings both opportunities and challenges for users. While these AI tools can improve critical thinking, and also raise some ethical and overreliance concerns (Mondal 2025). Krause et al. (2025) this study found that students use these tools to complete their assignments and excel in exams, while other results suggest that excessive use of these technologies poses some challenges. Sahin et al. (2025) examine the awareness level of Generative AI among secondary school students in Türkiye. The objective of this study is to measure the awareness of students about the Gen AI context in Türkiye. But the findings of this study were limited only to secondary school students aged 14 to 18. This pose constraint generalizes the findings to other education systems. Future studies should undertake to assess the awareness level of students about GenAI. Yasuda & Maruyama (2025) explore the conceptual understanding of creativity in the age of Generative AI. This review describes how Gen AI transforms the concept of creativity, shifting it from a once-seen-as-human or divine gift. This transformation will bring some opportunities as well as pose some challenges. Akanksha et al (2025) examined the influence of Gen AI on students' creativity. This study concludes that Gen AI can enhance creativity and critical thinking among students.

The following hypotheses have been formulated to assess the objectives;

H₀₁ = Students' perspective on Generative AI adoption is not significantly different based on gender.

H₀₂= Students' perspective on Gen AI adoption is not significantly different based on the area

H₀₃= Students' perspectives on Gen AI adoption is not significantly different based on academic level.

H_{04} = Students' perspective on Gen AI adoption is not significantly different based on age.

Research Methodology

The present research study is based on survey data of 102 respondents from various academic backgrounds, such as undergraduate, postgraduate, and PhD students. The primary data has been collected from different colleges and university departments of Haryana. The objective of this paper is to understand the students' perception regarding GenAI, such as ChatGPT, Gemini, and other tools, as a regular assistance tool. The study used a questionnaire consists of 10 statements on a five-point Likert scale ranging from strongly disagree to strongly agree to examine the students' perception regarding the usage of GenAI in education. The given questionnaire was divided into two sections: the first section contains a demographic profile of respondents, such as gender, age, place of living, and academic level, and the second section contains statements related to the attitude of students toward GenAI. The data was analyzed and interpreted using descriptive statistics in SPSS.

Results and Discussion

Table 1: Respondents' Demographic Characteristics (N = 102)

Variable	Category	Frequency	Percentage %
Gender	Male	24	23.5
	Female	78	76.5
Area of living	Urban	59	57.8
	Rural	43	42.2
Academic level	Undergraduate	48	47.05
	Postgraduate	32	31.37
	PhD (Research scholar)	22	21.5
Age	Below 18	15	14.70
	18-21	31	30.39
	21-25	39	38.23
	Above 25	17	16.67

Source: Survey Data

The demographics have been shown in Table 1 on the basis of gender, age, education, and place of residence. Respondents in this study were from different specializations, including Humanities, Science, and Commerce, comprising 24 Males (23.5%) and 78 females (76.5%). There were 47.05% undergraduate, 31.37% postgraduate, and 21.5% research scholars. The majority of students belong to the urban area, approximately 57.8% and 42.2% from the rural area. Whereas 14.7% of students were below 18, while 30.39% students belong to the 18-21 age group, 38.23% belong to the 21-25 age group, and 16.67% students were above 25 years.

Table 2: List of Questions and Mean Value:

S.No.	Statements	Mean
01	I am aware of Generative AI tools (ChatGPT, Gemini). Yes or No	----
02	I believe Generative AI is useful in education.	4.20
03	Generative AI helps me to complete assignments and projects more efficiently.	4.16
04	Generative AI enhances my understanding of difficult subjects.	4.11
05	Generative AI reduces my mental ability to think critically and solve problems independently.	3.87
06	I feel worried about being overdependent on Generative AI.	3.53
07	Generative AI raises concerns about user privacy and data.	3.98
08	Transparency in how AI tools generate responses is essential for building trust.	4.01
09	Using Generative AI tools without giving credit feels like plagiarism.	3.67
10	The information generated by this Generative-AI tool is consistently accurate and trustworthy.	3.51

Source: Survey Data

It can be said that, based on the mean score (as the mean score is >3) mentioned in the table, students indicate a high level of awareness and show a positive attitude toward the usefulness of Gen AI in education. On the other hand, students moderately agreed that Gen AI reduces their ability to think critically and solve independently, and they expressed concern about being overly dependent on such tools. The first statement was measured using a dichotomous (yes/no) response format; therefore, a mean value was calculated for this item. Overall findings show that students perceive Gen AI as a useful and efficient tool in education. This perception emphasizes the need for responsible use of GenAI in education.

Table 3: Results of the Independent t-test based on Gender :

Statements	Gender	Average	Levene's test sig.	t-test for equality of means		Mean difference	Null hypotheses
				t	Sig. (2-Tailed)		
2. I believe Generative AI is useful in education.	Male	4.208	.103	0.014	0.989	.0032	Accepted
	Female	4.205					
3. Generative AI helps me to complete assignments and projects more efficiently.	Male	4.250	.192	0.529	0.598	.1090	Accepted
	Female	4.141					

4. Generative AI enhances my understanding of difficult subjects.	Male	3.917	.573	-1.28	0.203	-.2628	Accepted
	Female	4.179					
5. Generative AI reduces my mental ability to think critically and solve problems independently	Male	3.708	.070	-0.852	0.396	-.2147	Accepted
	Female	3.923					
6. I feel worried about being overdependent on Generative AI.	Male	3.333	.147	-1.019	0.310	-.2692	Accepted
	Female	3.603					
7. Generative AI raises privacy concerns about user data.	Male	4.042	.146	0.405	0.686	.0801	Accepted
	Female	3.962					
8. Transparency in how AI tools generate responses is essential for building trust.	Male	4.000	.402	-0.060	0.952	-.0128	Accepted
	Female	4.013					
9. Using Generative AI tools without giving credit feels like plagiarism.	Male	3.500	.489	-0.773	0.441	-.1795	Accepted
	Female	3.679					
10. The information generated by this Generative AI tool is consistently accurate and trustworthy.	Male	3.375	.154	-0.693	0.490	-.1763	Accepted
	Female	3.551					

Source: Survey Data, and Level of Significance ($\alpha=0.05$)

Table 3 displays the result of Levene's Test and the independent t-test. The result of the independent sample t-test was found to be no significant difference between male and female respondents for all 9 statements, as all sig. (2-tailed) values exceed 0.05. This indicates that the perception of respondents toward Generative AI was similar across gender. Both male and female students expressed an identical level of agreement regarding the usefulness of Gen AI in academics and its ability to enhance understanding of difficult subjects. Besides perception related to the negative impact, such as reduced critical thinking skills, lack of transparency, and privacy concerns, were found to be similar across gender. Therefore, at the 5% level, the null hypotheses for all statements were accepted, suggesting that gender did not significantly influence students' perceptions of Gen AI.

Table 4: Summary of the Independent t-test on the basis of Area:

Statements	Area	Average	Levene's test sig.	t-test for equality of means		Mean difference	hypotheses
				t	Sig. (2-tailed)		
2. I believe Generative AI is useful in education.	Rural	4.116	.371	-.765	.446	-.1549	Accepted
	Urban	4.271					
3. Generative AI helps me to complete assignments and projects more efficiently.	Rural	4.233	.902	.644	.521	.1139	Accepted
	Urban	4.119					
4. Generative AI enhances my understanding of difficult subjects.	Rural	4.023	.989	-.922	.359	-.1632	Accepted
	Urban	4.186					
5. Generative AI reduces my mental ability to think critically and solve problems independently	Rural	3.860	.287	-.096	.924	-.0209	Accepted
	Urban	3.881					
6. I feel worried about being overdependent on Generative AI.	Rural	3.535	.375	-.033	.974	-.0075	Accepted
	Urban	3.542					
7. Generative AI raises privacy concerns about user data.	Rural	3.907	.239	-.748	.456	-.1269	Accepted
	Urban	4.034					
8. Transparency in how AI tools generate responses is essential for building trust.	Rural	4.000	.582	-.093	.926	-.0169	Accepted
	Urban	4.017					
9. Using Generative AI tools without giving credit feels like plagiarism.	Rural	3.581	.380	-.483	.630	-.0966	Accepted
	Urban	3.678					
10. The information generated by this Generative AI tool is consistently accurate and trustworthy.	Rural	3.581	.478	.573	.1238	.2188	Accepted
	Urban	3.458					

Source: Survey Data ($\alpha=0.05$)

Table 4 displays the results of Levene's Test and the independent t-test. The result of the independent sample t-test was found to be no significant difference between rural and urban respondents for all listed statements, as all sig. (2-tailed) values exceed 0.05. For all items, the sig. (2-tailed) values were more than 0.05, indicating that the observed mean differences were not significant at the 5% level. Although minor mean differences exist, with urban means slightly higher in some cases and rural in others, these differences are small and insignificant. Therefore, the null hypotheses were accepted for all statements, suggesting that perceptions regarding the usefulness of Gen AI in education, efficiency in completing assignments, understanding of difficult subjects, trust, and privacy concerns did not differ significantly based on area.

Table 5: Summary of One-way ANOVA on the basis of Academic level

Statements	Mean value of the Academic level			Levene's	One-way Anova		Null Hypotheses
	UG	PG	Ph. D	Sig.	F	Si g.	
2. I believe Generative AI is useful in education.	4.021	4.125	4.727	.085	4.089	.020	Rejected
3. Generative AI helps me to complete assignments and projects more efficiently.	4.104	4.094	4.409	.337	1.068	.348	Accepted
4. Generative AI enhances my understanding of difficult subjects.	4.021	4.000	4.500	.092	2.731	.070	Accepted
5. Generative AI reduces my mental ability to think critically and solve problems independently.	4.042	3.875	3.500	.149	1.940	.149	Accepted
6. I feel worried about being overdependent on Generative AI.	3.667	3.500	3.318	.685	.739	.480	Accepted
7. Generative AI raises privacy concerns about user data.	4.021	4.000	3.864	.547	.270	.764	Accepted
8. Transparency in how AI tools generate responses is essential for building trust.	4.125	3.844	4.000	.269	.924	.400	Accepted
9. Using Generative AI tools without giving credit feels like plagiarism.	3.563	3.531	3.955	.513	1.455	.238	Accepted
10. The information generated by this Generative AI tool is consistently accurate and trustworthy.	3.604	3.313	3.591	.272	.765	.468	Accepted

Source: Survey data ($\alpha=0.05$)

To examine the difference in perception of Generative AI among undergraduate, postgraduate, and research scholars, Levene's test and one-way ANOVA were used. The results indicate a statistically significant difference only for one statement, "I believe Gen AI is useful in education" ($F = 4.089$, $p = 0.020$); therefore, the null hypothesis was rejected for this statement. For all other statements related to efficiency, overdependence, privacy, and transparency of Gen AI, the p-values were greater than 0.05. Hence, no significant differences were found among UG, PG, and PhD students. Overall academic level has a limited influence on students' perceptions of Gen AI in education.

Table 6: Summary of One-way ANOVA on the basis of Age

Statements	Mean value of Age				Levene's test	One-way Anova		Null Hypotheses
	Below 18	18-21	21-25	Above 25	Sig.	F	Sig.	
2. I believe Generative AI is useful in education.	4.200	4.129	4.256	4.206	.855	.095	.963	Accepted
3. Generative AI helps me to complete assignments and projects more efficiently.	4.400	3.968	4.205	4.235	.573	.938	.426	Accepted
4. Generative AI enhances my understanding of difficult subjects.	4.200	4.097	4.077	4.176	.916	.100	.960	Accepted
5. Generative AI reduces my mental ability to think critically and solve problems independently	3.867	3.935	3.923	3.647	.159	.306	.821	Accepted
6. I feel worried about being overdependent on Generative AI.	3.400	3.548	3.641	3.412	.900	.248	.863	Accepted
7. Generative AI raises privacy concerns about user data.	3.933	3.968	4.051	3.882	.138	.181	.909	Accepted
8. Transparency in how AI tools generate responses is essential for building trust.	4.067	4.194	4.000	3.647	.316	1.368	.257	Accepted
9. Using Generative AI tools without giving credit feels like plagiarism.	3.267	3.613	3.718	3.824	.843	.988	.402	Accepted
10. The information generated by this Generative AI tool is consistently accurate and trustworthy.	3.533	3.677	3.462	3.294	.535	.489	.691	Accepted

Table 6 exhibits the results of Levene's test and one-way ANOVA. The purpose of this analysis is to

check whether students of different age groups differ significantly in their opinion about Generative AI. The one-way ANOVA results show that age did not significantly influence students' perception of Generative AI usage in education, as the p-values were greater than 0.05 for all statements. For all statements related to the usefulness of Gen AI in education, its role in enhancing understanding, and concerns about overdependence on Gen AI, the p-values were greater than 0.05. This shows that there is no significant difference in the mean of students across different age groups. Although small differences were observed in the mean values of each age group. Although these differences were not significantly material. Therefore, null hypotheses were accepted for all statements. It highlights that students of all age groups, ranging from below 18 to above 25, had a similar attitude toward the application of GenAI in education.

Figure 1: Awareness of GenAI tools among students (N = 102)

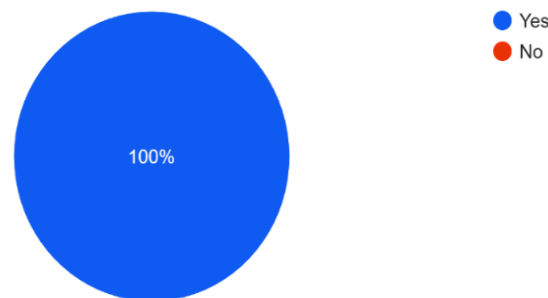


Figure 1 depicts the awareness of GenAI among students. It indicates that students were aware of large language models such as ChatGPT, Google Gemini, and other AI tools, and their application in education. A dichotomous question was asked of all participants to assess the awareness of students regarding these AI tools. All participants agreed that they were aware of GenAI tools such as ChatGPT, Meta, and perplexity.

Figure 2: The Extent to which Gen AI is useful in Education:

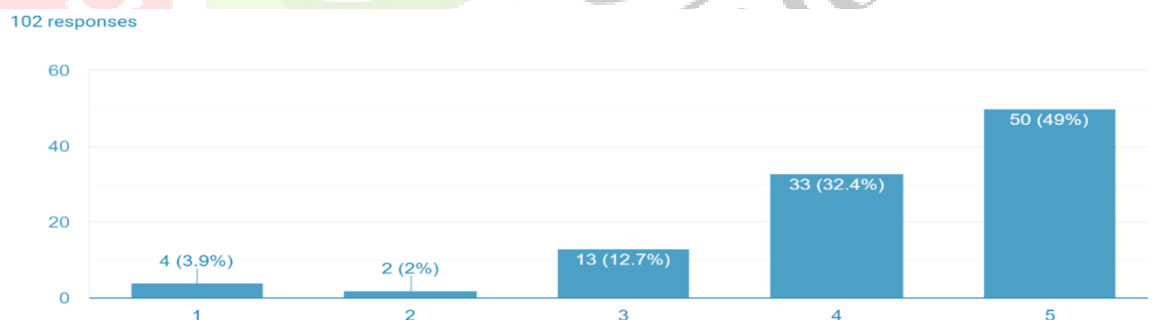
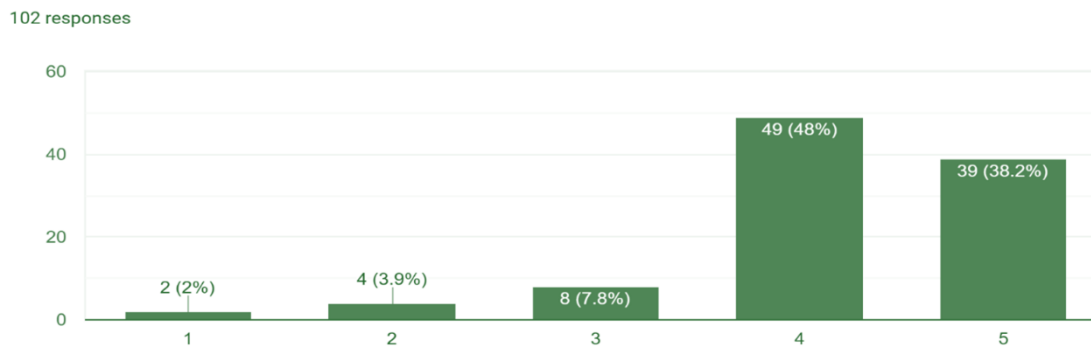


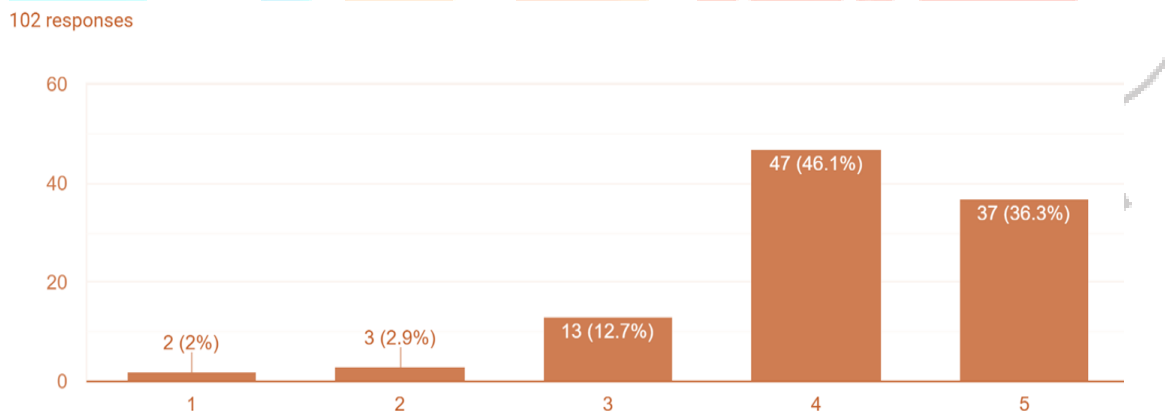
Figure 3 depicts that a large number of students perceived GenAI as a useful tool in education. It shows a high level of acceptance among respondents regarding its application in academia. Out of 102 respondents, 49% of students strongly agree that GenAI is useful in education. Although a small number of students show a neutral response regarding the usage of GenAI in education. However, on the basis of the academic level of respondents, PhD students show a higher mean as compared to UG and PG students. This specifies that as students reach a higher academic level, their beliefs regarding the usefulness of GenAI would change.

Figure 3: Students viewpoints regarding GenAI efficiency in Completing Projects:

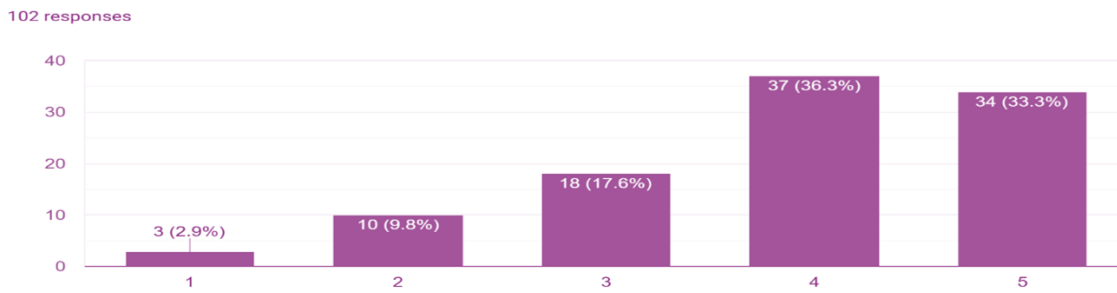


The findings depict that students perceived GenAI as a supporting tool in completing assignments more efficiently. The mean score of students below 18 was greater than the mean score of other age levels, which shows that students below 18 use it more than other students of different age groups. On the basis of academic level, research scholars again showed the highest mean, followed by UG and PG students. However, the findings show a positive attitude of students toward the role of GenAI in completing their work efficiently.

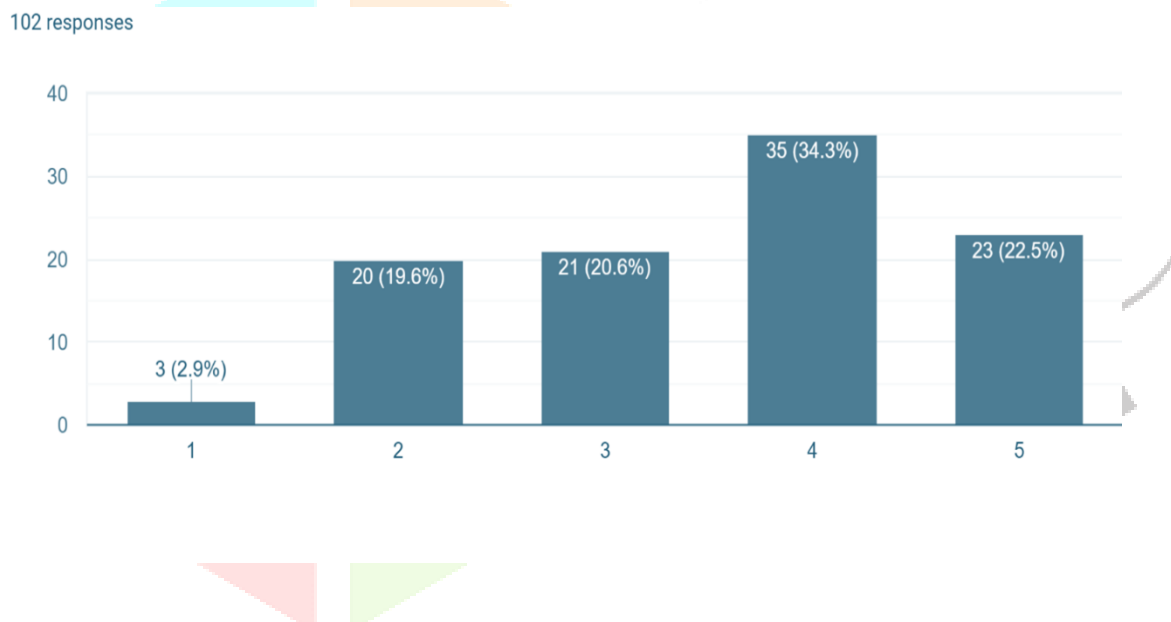
Figure 4: Perception of students regarding comprehension of tough Subjects:



As depicted in Figure 4, out of 102 respondents (82.4%), students agree or strongly agree that GenAI increases their understanding of difficult subjects in education. This suggests students look at GenAI as a helpful tool for simplifying difficult subjects and improving their understanding.

Figure 5: Students opinion regarding GenAI independent problem-solving ability:

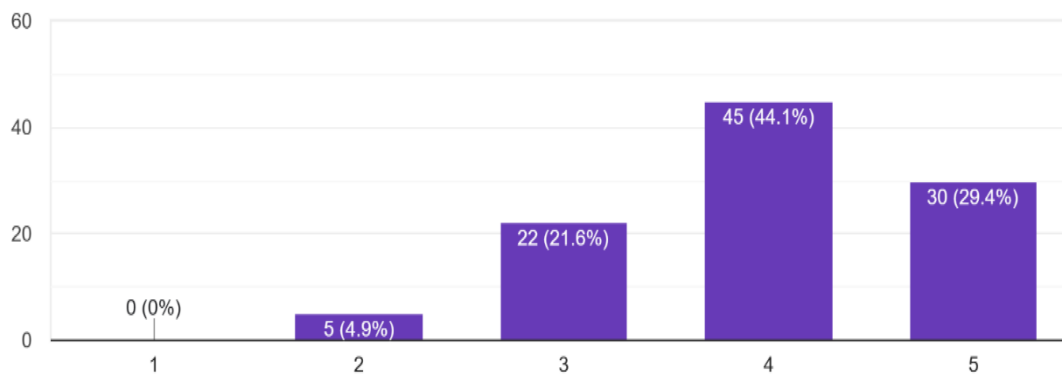
The results indicate that students agree or strongly agree with the statement that the use of these tools regularly reduces their ability to solve problems independently. The mean score of UG students was greater than the mean score of other students, which indicates that UG students were more dependent on these tools, and they accept that it reduces their ability to solve problems independently. This suggests that GenAI is viewed as an aid rather replacement of independent thinking.

Figure 6: Students Opinion on Excessive Dependence on GenAI:

The Figure 6, represent the perspective of students on excessive use of GenAI in education. The responses show a varied perspective. The majority of students agree that they were more dependent on these tools and it reduces their critical thinking skills. In contrast, 22.5 % students disagree or strongly disagree on the perspective of excessive use of GenAI in education.

Figure 7: Respondents' potential risk of personal data privacy:

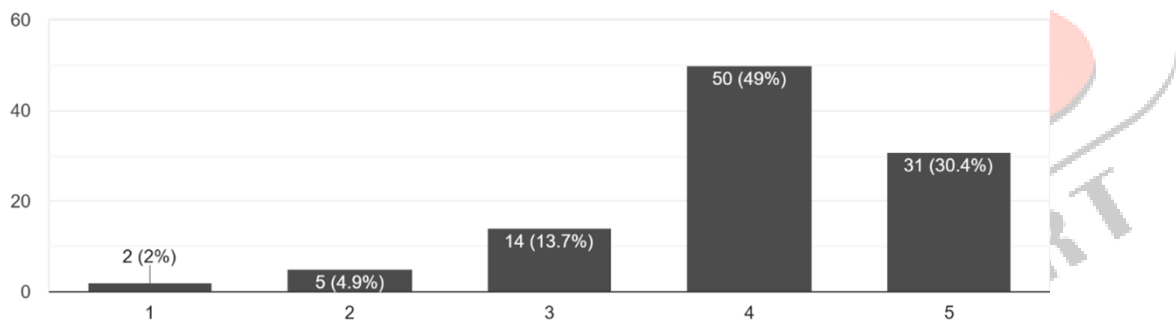
102 responses



Many respondents agree that they have concerns about their personal data privacy. This suggests that respondents are aware of the potential risk associated with the use of Gen AI tools. Overall, the findings highlight that data privacy is a significant concern among students and the need for clear policies related to the data privacy of users.

Figure 8: Effect of Transparency in Building Confidence among Students:

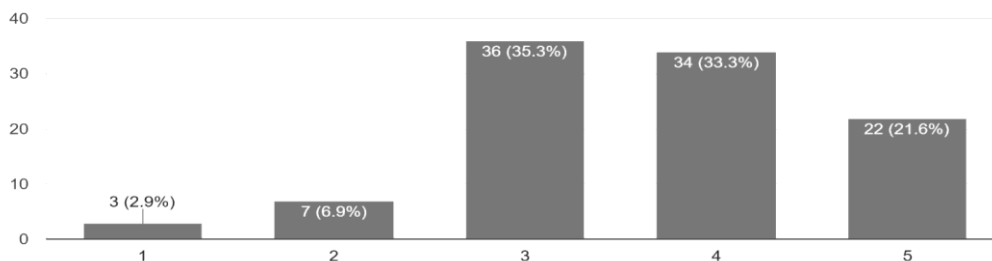
102 responses



The results show in Figure 12 that the majority of students agree that transparency in how Gen AI generates responses is essential for building trust. The findings highlight transparency as a key factor in developing trust in GenAI among students.

Figure 9: Viewpoint regarding unauthorized use of GenAI:

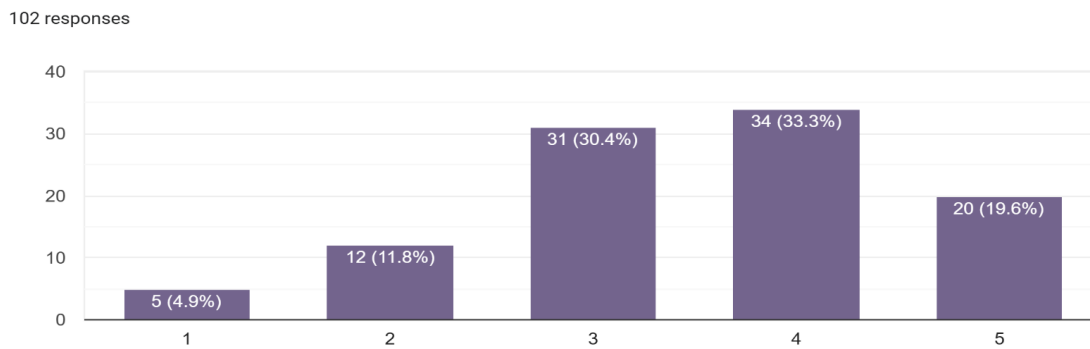
102 responses



The findings indicate that students selected the neutral option regarding whether using GenAI without giving credit constitutes plagiarism. This neutral shows a lack of clarity among students about rules related to these tools. This result highlights the need for clear guidance and awareness regarding the

proper ethical use of Gen AI in education.

Figure 10: Level of Accurate information generated by GenAI:



The findings of the above figure indicate that students show mixed opinions regarding the accuracy of information generated by AI. This highlights that students recognize the usefulness of GenAI but don't view it as consistently reliable without verification.

Conclusion

The utility of GenAI tools is growing quickly among students in education. These tools offer personalized content to students instantly and on a real-time basis. To obtain benefits from these tools, students' level of awareness, attitude, and belief regarding GenAI is of critical significance. The present study aimed to assess the perception of students regarding GenAI in education. This study adds value by providing evidence on demographic differences in students' perceptions of GenAI in higher education. Previous studies that are based on GenAI adoption, this study highlights how the way students use these technologies varies across demographic groups. The findings indicate that educators and policymakers should design inclusive and equitable strategies for effective integration of GenAI in education. This study found that students perceive GenAI as a useful tool in education. Although some students believe that excessive use of these tools reduces their ability to think independently. This study employed a t-test and an Anova for hypothesis testing at a 5% level of significance. The results show that there is no significant difference among students on the basis of gender, area, and academic level; the null hypothesis was accepted for all statements. While a small number of students believe that overdependence on these reduces their creativity, there is always a potential risk of misuse of their personal data. These concerns suggest the need for proper guidelines and policies to implement GenAI in education. This study provides critical insights for educators and students, highlighting the benefits of integrating technology into education. It showed a strong level of awareness of GenAI, including ChatGPT, among students in education, particularly for adaptive learning purposes. It is necessary to be aware of concerns related to data privacy, transparency, unauthorized use, and overreliance on technology that also prevail. Educational institutions can support the findings to make students aware of the significance of technology in academics. Additionally, this research also provides valuable insight to educators and regulators.

Limitations and Scope for Future Research

This study aimed to develop a reliable scale to assess the perception of students regarding GenAI in education. It has several limitations that present a research opportunity. First, the sample size was limited, which restrained the generalizability of findings. Second, this research study emphasizes a specific demographic variable and a cross-sectional design. Further study should explore additional variables such as peer influence and social and emotional domains. For the purpose of understanding, how culture and cross-culture affect the promotion of GenAI in higher education should also be examined. Furthermore, it is essential to incorporate a longitudinal design to assess the impact of GenAI among

students. This would provide more information and reveal the effects of GenAI on learning behavior. Independent thinking and long-term academic results.

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