The Dynamics of Perceived Benefits, Risks, and Frequency of ChatGPT Use in Indonesian Students' Academic Writing

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ABSTRACT

The rapid advancement of artificial intelligence (AI), especially LLMs like ChatGPT has changed students' school habits. It also highlights risks, such as copying and privacy concerns, that those who create rules must address. This research examines how students perceive the benefits and drawbacks of ChatGPT, as well as their frequency of use for school writing in Indonesia. We conducted a survey of 272 students from two government colleges, specifically targeting them. We changed some ideas from studies by Balraj (2025), Meyer et al (2024), Gocek & Patekar (2023), and OECD (2023). We analyzed the data using basic statistics, the Pearson correlation test, and multiple linear regression. The results show that students use ChatGPT extensively for writing papers, creating summaries, understanding complex ideas, and correcting their grammar. They thought the good things were good (M = 4.08), mainly because they made them faster and helped them write better. However, they also worried about issues such as AI causing copying, being overly reliant on it, incorrect information, and privacy concerns (M = 3.81). Regression analysis revealed that exposure to the positive aspects of ChatGPT was associated with increased usage (β = 0.39, $p < 0.001$). These results underscore the need for clear rules to ensure the integrity of schoolwork and protect privacy with AI, prompting educators and policymakers to take a proactive role in shaping ethical guidelines.

Keywords: AI Literacy, ChatGPT, Generative Artificial Intelligence, Perceived Benefits, Perceived Risks

INTRODUCTION

The rapid rise of AI over the past decade has had a significant impact on education. New LLMs, such as GPT-3.5, GPT-4, GPT-5, Gemini, and Claude, have revolutionized the way we obtain, create, and comprehend educational information. These models utilize deep learning to infer language and generate responses that appear to be from real people, creating a learning environment that's more engaging, rapid, and personalized (Bommasani et al., 2021). Generative AI gained significant momentum at the end of 2022 with the release of ChatGPT by OpenAI, which attracted over 100 million users in just two months, making it the fastest-growing product to date (OpenAI, 2023). It is easy to access, its capabilities are improving rapidly, and it integrates with various programs, making ChatGPT a significant development in higher education.

Adding LLMs to schools provides students with opportunities. However, it also raises concerns such as the dissemination of incorrect information and excessive reliance on AI, which teachers need to be aware of and address. Studies indicate that students use ChatGPT for academic assistance to generate innovative ideas, refine writing, improve grammar, expedite writing, and explore theories (Balraj, 2025). LLMs can also make thinking easier, help overcome writing fears, and aid in learning through reading. However, identifying concerns such as incorrect information and excessive reliance on AI can help teachers guide students in using AI effectively. Halaweh (2023) discusses the issue of being overly reliant on AI, where students use AI-generated answers without thinking critically for themselves. Another concern

is the generation of incorrect information, where LLMs produce false content but present it as accurate (Ji et al., 2023). These things make us wonder if the information is correct, if the sources are reliable, and if the learning is accurate, so teachers need to be aware and step in.

Črček & Patekar (2023) emphasize the importance of understanding how AI works, who is utilizing it, and how data is safeguarded when using AI in schools. They argue that AI should not be used to replace tasks such as critical thinking, grading schoolwork, and studying. The OECD (2023) also expresses concerns about AI being biased, with some individuals not having equal access to it, and schools being unprepared to implement AI rules effectively. Big school publishers, such as Elsevier, are also tightening their ethics rules, requiring writers to clearly state whether they used AI to write their papers.

In Indonesia, the use of ChatGPT has increased rapidly since 2023, as more people have gained access to the internet and students are increasingly seeking AI assistance with their schoolwork. The Indonesian Internet Service Providers Association (APJII, 2024) reports that 41.1% of college students in Indonesia have utilized generative AI for academic purposes. Google Trends analysis demonstrates a strong upward trend in searches for "ChatGPT" in Indonesia since 2023, indicating growing adoption and awareness of generative AI technologies among the public. Students often use AI to summarize readings, write essays, plan research, check grammar, and outline their thesis. However, AI is growing faster than schools can control it. Some prominent colleges, such as Universitas Indonesia and Universitas Gadjah Mada, have rules governing the use of AI, but most do not. This policy gap influences how students perceive and utilize ChatGPT, underscoring the need to examine the institutional impacts on student behavior.

Ethics are a big worry when using ChatGPT. Students might copy without knowing, where writing looks real but is not their own. Additionally, a lack of knowledge about AI prevents students from distinguishing between accurate and fabricated information, which can lead to the sharing of incorrect information. Data safety is another concern, as many users are unaware that AI systems may retain or reuse their words to train themselves. Algorithmic bias is another issue, where AI may be unfair due to how it was trained, leading to incorrect understandings of things. It is crucial to examine students' awareness of these ethical issues to inform the development of practical guidelines and educational interventions.

Beyond perceived usefulness and ease of use, recent studies emphasize the importance of AI literacy as a critical factor shaping how students engage with generative AI tools such as ChatGPT. AI literacy refers to individuals' ability to understand how AI systems function, critically evaluate AI-generated outputs, recognize their limitations and biases, and use them responsibly in ethical and socially acceptable ways (Ng et al., 2021). In the context of academic writing, insufficient AI literacy may lead students to uncritically accept AI-generated content, increasing the risk of misinformation, superficial learning, and unintentional plagiarism.

Concerns regarding academic integrity further complicate the adoption of ChatGPT in higher education. While generative AI can support idea generation and writing efficiency, it also blurs the boundaries between legitimate academic assistance and academic misconduct. Cotton et al. (2023) argue that without clear guidance and ethical awareness, students may engage in practices that undermine authorship, originality, and scholarly accountability. These challenges suggest that students' acceptance of ChatGPT is not solely driven by perceived benefits but is also influenced by their awareness of ethical risks and institutional norms.

Integrating AI literacy and academic integrity into the Technology Acceptance Model (TAM) provides a more comprehensive framework for understanding students' ChatGPT usage. Students with higher AI literacy are more likely to perceive ChatGPT as useful while simultaneously recognizing its limitations, which may moderate the relationship between

perceived usefulness, perceived risk, and actual usage behavior. Conversely, low levels of AI literacy may increase reliance on ChatGPT while reducing critical engagement, thereby affecting both perceived risk and ethical judgment. Therefore, examining students' perceptions of benefits and drawbacks alongside actual usage frequency offers valuable insights into how AI literacy and academic integrity considerations shape technology acceptance in the era of generative AI.

Therefore, it is becoming increasingly important to understand what Indonesian students think about using ChatGPT. Many studies have examined the teaching and ethics of generative AI, but there have been few in Indonesia. Local studies primarily describe its use without examining the relationship between the benefits, drawbacks, and frequency of AI use in school writing. The Technology Acceptance Model (TAM) suggests that perceiving something as applicable and not risky influences whether people adopt it (Davis, 1989; Venkatesh et al., 2012). Therefore, studying these aspects together is crucial to understanding how Indonesian students perceive and utilize ChatGPT.

This study aims to fill this gap by examining what students think about the benefits and drawbacks of ChatGPT, and how these perceptions influence their frequency of using ChatGPT for school writing. We hope schools will use these results to develop ethics guidelines for generative AI, teach students about AI, and create learning plans that ensure academic integrity in the digital age.

RESEARCH METHOD

This study employed a survey with numerical questions to gauge college students' opinions on using ChatGPT for academic purposes. We used numbers to gain a clear and measurable understanding of how often it is used and what people see as good and bad aspects of it at school. A survey was suitable for this purpose because generative AI is evolving rapidly, as other studies on technology in schools suggest (Ajibade et al, 2025; Dwivedi et al., 2023).

The data collection was conducted from September to November 2025 involving undergraduate students from two public universities in Indonesia, namely Universitas Sebelas Maret (UNS) and Universitas Negeri Semarang (Unnes). Participants were selected based on three inclusion criteria: (1) being an active student, (2) having used ChatGPT at least once for academic purposes, and (3) providing informed consent to complete the survey. A total of 300 online questionnaires were distributed, and 284 responses were returned. After data screening, 272 valid responses were retained for analysis. This sample size is considered adequate for the analytical procedures employed in this study, meeting the recommended minimum ratio of 5–10 participants per item (Hair et al., 2019).

The survey instrument was adapted from established measures developed by Balraj (2025) and Meyer et al (2024), and further informed by ethical frameworks for AI use in education issued by Črček & Patekar (2023) and the OECD (2023). The final questionnaire consisted of 30 questions and four sections: (1) demographic information, (2) frequency and purpose of ChatGPT use, (3) perceived academic benefits of AI, and (4) perceived risks and ethical concerns, including issues related to plagiarism, overreliance, misinformation, and data privacy. All items were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

To assess the instrument's validity and reliability, exploratory factor analysis (EFA) was performed. Sampling adequacy and data suitability were examined using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity. Internal consistency was evaluated with Cronbach's alpha, with a minimum threshold of 0.70 considered acceptable (Nunnally & Bernstein, 1994). Subsequently, descriptive statistics, Pearson correlation, and

multiple linear regression analyses were applied to examine the extent to which perceived positive and negative aspects of AI predicted the frequency of ChatGPT use. All analyses were conducted using SPSS version 26. The study adhered to the ethical standards of the British Educational Research Association (BERA, 2022) and relevant national regulations. Participation was voluntary, and informed consent was obtained prior to data collection. Personal identifiers were not recorded, and all data were stored securely in accordance with Črček & Patekar (2023) recommendations for responsible AI governance.

RESULTS AND DISCUSSION

Respondent Profile

Table 1 Demographic Characteristics of the Respondents (N = 272)

Variable	Category	Frequency (n)	Percentage (%)
Age	18–22 years	225	82.7
	>22 years	47	17.3
Field of Study	Education	94	34.6
	Economics	47	17.3
	Engineering	43	15.8
	Science	31	11.4
	Other disciplines	57	20.9
Duration of ChatGPT Use	> 6 months	159	58.5
	≤ 6 months	113	41.5

Based on Table 1, data from 272 students who met the inclusion criteria were included in the analysis. Most respondents were between 18 and 22 years old (82.7%) and were in their first year of study, a group generally known for frequent engagement with digital technologies and emerging AI tools (APJII, 2024). The participants were drawn from two public higher education institutions, Universitas Sebelas Maret (UNS) and Universitas Negeri Semarang (Unnes). They represented a diverse range of academic disciplines, including education (34.6%), economics (17.3%), engineering (15.8%), science (11.4%), as well as various other fields of study (20.9%), thereby contributing to a more comprehensive depiction of student perspectives. This diversity helps provide a richer picture of student experiences, although the scope of the study remains limited because the sample reflects only two institutions rather than the broader higher education landscape in Indonesia. Since all respondents came from public universities, their learning environments were relatively comparable. A majority also indicated that they had been using ChatGPT for more than six months (58.5%), suggesting that they were familiar enough with the tool to reflect meaningfully on both its benefits and its potential drawbacks. This pattern aligns with the growing global trend of LLM use among university students (Balraj, 2025; Dwivedi et al., 2023).

Frequency and Purposes of ChatGPT Use

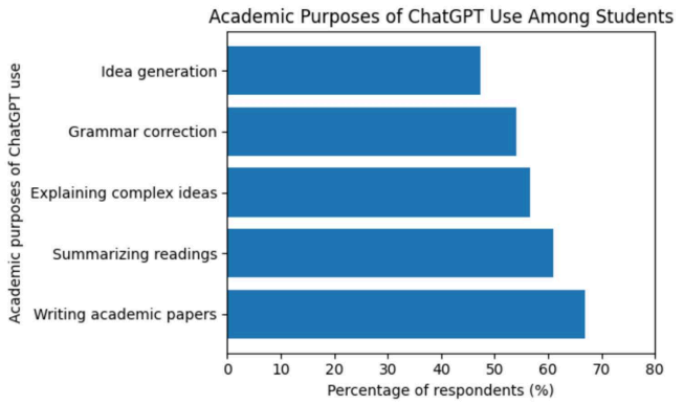

Figure 1 Academic Purposes and Frequency of Chatgpt Use Among Students

As shown in Figure 1, statistics indicate that students use ChatGPT frequently, with 71.0% of respondents reporting usage at least three times per week, primarily for academic-related activities. The most common purpose of ChatGPT use is writing academic papers (66.9%), followed by summarizing readings (61.0%), highlighting its role in supporting academic writing and information processing. Additionally, students utilize ChatGPT to explain complex ideas (56.6%) and correct grammar (54.0%), suggesting that the tool functions as both a cognitive aid and a linguistic support system. Meanwhile, idea generation (47.4%) represents the least frequently reported academic use, although nearly half of the respondents still rely on ChatGPT during the early stages of academic tasks. Overall, the figure demonstrates that ChatGPT is predominantly employed to enhance efficiency, comprehension, and writing quality in students' academic work.

This means that ChatGPT is not just a tool, but also a learning companion that helps students think critically during school tasks. This aligns with Balraj (2025), who found that students utilize LLMs to enhance their understanding of concepts and create content. It also supports Holmes et al. (2022), who argue that AI is facilitating learning rather than merely automating tasks.

Perceived Benefits of Using ChatGPT

Table 2 Students' Perceived Academic Benefits of ChatGPT

Dimension	Mean (M)	SD
Overall perceived academic benefits	4.08	0.61
Faster completion of assignments	4.29	-
Improved understanding of academic content	4.18	-
Improved writing quality	4.14	-

As shown in Table 2, students reported generally positive perceptions of ChatGPT's academic benefits, with an overall mean score of 4.08 (SD = 0.61) on a five-point scale. This positive evaluation was evident across three key dimensions. Specifically, ChatGPT was perceived to facilitate faster completion of academic assignments (M = 4.29), indicating its usefulness in improving task efficiency. In addition, students reported that ChatGPT supported their understanding of complex academic content (M = 4.18), suggesting its role as a cognitive aid in learning. Furthermore, students perceived that ChatGPT contributed to improvements

in their writing quality (M = 4.14). Taken together, these results demonstrate that students view ChatGPT as a beneficial learning tool that enhances both academic understanding and productivity. These findings are consistent with prior studies by Meyer et al (2024) and Balraj (2025), which emphasize the role of ChatGPT in idea generation, writing support, and task streamlining. Moreover, the results align with the Technology Acceptance Model (Davis, 1989), which posits that perceived usefulness is a key factor influencing individuals' acceptance and continued use of technology.

Perceived Risks and Ethical Concerns

Table 3 Students' Concerns Regarding the Use of Large Language Models (LLMs)

Dimension / Indicator	Mean (M)	SD
Overall perceived concerns about LLM use	3.81	0.74
Risk of plagiarism or overly similar writing	3.98	-
Over-reliance on AI affecting critical thinking	3.87	-
Risk of incorrect or fabricated information	3.84	-
Privacy and data security concerns	3.72	-

Table 3 presents students' concerns regarding the use of Large Language Models (LLMs) in academic settings. Overall, students reported moderate to high levels of concern, with an average score of 3.81 (SD = 0.74) on a five-point Likert scale. The highest concern was related to the risk of copying or producing work that is too similar when using AI (M = 3.98), followed by worries about overreliance on AI potentially hindering critical thinking and academic independence (M = 3.87). Students also expressed concerns about receiving incorrect or fabricated information from LLMs (M = 3.84) and about privacy and data security risks (M = 3.72). These results indicate that while students recognize the benefits of LLMs, they remain critically aware of the potential drawbacks. Such concerns are consistent with reports from Črček & Patekar (2023) and OECD (2023), which emphasize ethical considerations in AI use, including bias, misinformation, and threats to academic integrity. Furthermore, Spector (2023) highlights that effective AI use in education requires the ability to verify the correctness of generated information.

Relationships Between Perceived Benefits, Perceived Risks, and Usage Frequency

Table 4 Correlation Between Perceived Benefits, Perceived Concerns, and ChatGPT Usage

Variables	1	2	3
1. ChatGPT usage frequency	—		
2. Perceived benefits	0.44***	—	
3. Perceived concerns	−0.26***		—

Table 5 Multiple Linear Regression Predicting ChatGPT Usage

Predictor	β	t	p
Perceived benefits	0.39	—	< .001
Perceived concerns	−0.20	—	< .001

Model Fit Statistics	Value		
F	74.52***		
R^2	0.31		
Predictor	β	t	p
Perceived benefits	0.39	—	< .001
Perceived concerns	−0.20	—	< .001

The Pearson correlation coefficients indicated relationships between students' perceived benefits, perceived concerns, and their ChatGPT usage frequency. As shown in Table

4, students' perceptions of the positive aspects of ChatGPT were positively associated with usage frequency ($r = 0.44$, $p < .001$), suggesting that the more students recognized its benefits, the more frequently they used it. Conversely, perceptions of negative aspects were negatively correlated with usage frequency ($r = –0.26$, $p < .001$), indicating that concerns about potential risks reduced students' engagement with ChatGPT.

Furthermore, multiple linear regression analysis demonstrated how both perceived benefits and perceived concerns jointly predicted ChatGPT usage. According to the results presented in Table 5, the model was significant ($F = 74.52$, $p < .001$) and explained 31% of the variance in usage ($R^2 = 0.31$). Among the predictors, perceived benefits were the strongest positive influence on usage ($\beta = 0.39$, $p < .001$), whereas perceived concerns negatively predicted usage ($\beta = –0.20$, $p < .001$). These findings are consistent with the Technology Acceptance Model (Davis, 1989; Venkatesh et al., 2012), highlighting that perceived usefulness drives technology adoption. Additionally, the negative effect of perceived concerns aligns with prior research suggesting that worries about AI can deter its use in academic settings. Overall, students' engagement with ChatGPT is shaped by a balance between recognizing its benefits and being aware of potential risks.

Discussion

This study confirms that Indonesian students perceive ChatGPT as highly beneficial for academic purposes, particularly in terms of efficiency, organization of ideas, and support for academic writing. The frequent use of ChatGPT positions Indonesia alongside countries such as the United States, Australia, and South Korea, where generative AI has become embedded in higher education practices (Zawacki-Richter, 2023; Lim et al., 2023). Consistent with theories of distributed and extended cognition, students increasingly view ChatGPT not merely as a supplementary tool but as an integral part of their learning process, enabling human–AI collaboration rather than independent human effort alone (Holmes et al., 2022; Risko & Gilbert, 2016). These findings reinforce prior research suggesting that large language models can meaningfully support writing, idea development, and conceptual understanding when used strategically (Balraj, 2025).

At the same time, students demonstrate clear awareness of the risks associated with ChatGPT use. Concerns related to plagiarism, reduced cognitive effort, and the generation of inaccurate or fabricated information were consistently reported. These findings align with prior studies highlighting the phenomenon of AI hallucination, where outputs appear plausible but are factually incorrect (Meyer et al, 2024; Črček & Patekar, 2023). Such risks threaten core educational values, particularly critical thinking and epistemic responsibility. When students rely on AI-generated content without verification or reflection, learning may shift from knowledge construction toward passive consumption, undermining the development of analytical and reflective skills that higher education seeks to cultivate.

A key contribution of this study lies in demonstrating that, although students recognize these risks, perceived benefits exert a substantially stronger influence on actual ChatGPT usage. Regression results indicate that the positive effect of perceived benefits outweighs the negative effect of perceived risks, suggesting that awareness of ethical or cognitive concerns alone does not significantly deter usage. This imbalance helps explain why students continue to rely on ChatGPT despite acknowledging its drawbacks. As Amiel and Reeves (2023) describe, this reflects the growing inevitability of educational AI, in which technologies become so embedded in academic practices that avoidance becomes unrealistic, even in the presence of recognized risks.

These dynamics are further shaped by the Indonesian higher education context, where clear institutional policies on generative AI remain uneven or absent. In universities with explicit AI ethics guidelines, students receive clearer direction regarding acceptable use. In contrast, the absence of formal regulations in many institutions leaves students to navigate AI use independently, often guided by peer norms rather than institutional standards. Selwyn (2023) warns that such policy vacuums may encourage superficial compliance, misuse, or reliance on unreliable sources, particularly under academic pressure. The OECD (2023) similarly emphasizes that effective AI governance requires neither unconditional acceptance nor outright rejection, but carefully articulated rules supported by institutional readiness.

These findings highlight the need to move beyond access and regulation toward AI literacy and pedagogical transformation. Students' ability to use ChatGPT responsibly depends on their understanding of how AI systems work, their limitations, biases, and the need for verification (Long & Magerko, 2020). Limited AI literacy among both students and educators in Indonesia may explain why ChatGPT is sometimes used in ways that appear productive yet compromise academic integrity. Moreover, as AI can enhance the surface quality of academic work without guaranteeing deep understanding, traditional assessment methods are increasingly vulnerable (Spector, 2023). Institutions should therefore redesign pedagogy and assessment to emphasize learning processes, critical reasoning, and reflective engagement through oral examinations, draft-based writing, peer review, and process-oriented evaluation. Without such shifts, higher education risks falling into the "automation trap," where AI gradually replaces rather than augments human cognition (Brynjolfsson & McAfee, 2023).

CONCLUSION

This study reveals that ChatGPT is now an integral part of how Indonesian college students approach their academic work. Students use it frequently for learning complex concepts, writing papers, summarizing readings, and refining their writing. They think ChatGPT is helpful, especially for learning more quickly, understanding academic material, and writing more effectively. This means AI can help students at school when used correctly. However, students are also aware of the drawbacks of ChatGPT, such as copying, not requiring critical thinking, providing incorrect answers, and concerns about data safety. These worries make them use it less, but they still use it because they need it for school.

The relationship between the frequency of use and the good and bad aspects of ChatGPT reveals that students consider computer skills, ethics, and rules when using it. This means that using ChatGPT is not just about technology, but also about understanding AI, being honest in school, and whether schools are prepared to establish rules for its use. Not all schools have the same rules, so students often guess what is okay instead of following them. This study suggests that ChatGPT can aid students in learning. However, it also highlights risks that require addressing through the development of computer skills, revisions to teaching methods, and the establishment of ethics guidelines for AI in schools. Schools need to create rules and plans that strike a balance between utilizing technology and encouraging students to think critically.

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