Research Article

Researches on Multidisiplinary Approaches 2025, 5(2): 429-438 ISSN:2791-9099

Exploring University Students' Interactions with Chatgpt in Education: An Examination of Usages Based on the UTAUT Model

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Abstract

Recent advancements in AI have led to educational chatbots like ChatGPT, enhancing student engagement through personalized, interactive experiences. These tools provide tailored assistance and immediate feedback, improving learning outcomes. The Unified Theory of Acceptance and Use of Technology (UTAUT) model identifies four key factors—PE, EE, SI, and FC —that influence technology adoption. In ChatGPT's case, these factors affect students' perceptions of the tool's usefulness, ease of use, and available support. This study explores PE, EE, SI, and FC in ChatGPT use, focusing on differences between undergraduate and postgraduate students. 40 participants were interviewed using snowball sampling. Data were analyzed descriptively, with key statements quoted for insight. PE factors for undergraduates include task efficiency, convenience, academic productivity, and reliability issues, while postgraduates emphasized academic support, research applications, and reliability issues, with perceived usefulness and reliability common across both groups. EE factors for undergraduates include ease of use, prior experience, and educational assistance, while postgraduates emphasized prior experience, over-reliance, and self-reliance, with prior experience as the common theme. SIs for undergraduates are driven by "social pressure," while postgraduates are influenced by "misuse anxiety" and "independent usage." FC for both groups are centered on "accessibility," focusing on free availability.

Keywords: UTAUT, Chatgpt, AI Education, Undergraduate Students, Postgraduate Students.

JEL Codes: L86, I120, I123

Citation: Sabuncuoğlu İnanç, A., Akıncı Çötok, N., & Isman, A. (2025). Exploring university students' interactions with ChatGPT in education: An examination of usages based on the UTAUT model. *Researches on Multidisciplinary Approaches (ROMAYA Journal), 5*(2), 429–438.

Submission Date : 25.09.2025
Acceptance Date : 05.10.2025

1. Introduction

The rapid advancement of artificial intelligence has begun to reshape educational practices, complementing traditional approaches with personalized and adaptive systems. Applications such as ChatGPT provide learners with immediate feedback, individualized guidance, and interactive experiences that enhance both engagement and achievement. As one of the most widely used language models, ChatGPT serves diverse functions ranging from academic writing and research assistance to tutoring support. Nevertheless, its growing presence in education raises concerns related to academic integrity, dependence, and data privacy, underscoring the importance of responsible and balanced use. The Unified Theory of Acceptance and Use of Technology (UTAUT) offers a useful framework for examining the factors that shape technology adoption. It emphasizes four dimensions: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). In the context of ChatGPT, these correspond to perceptions of usefulness, ease of use, social encouragement, and access to resources. Prior research demonstrates that these factors significantly influence students' adoption of AI-based tools. For instance, postgraduate students tend to value ChatGPT for its efficiency and contribution to learning, though issues such as accuracy and over-reliance remain points of hesitation. In addition, elements such as trust, social support, and infrastructural conditions appear critical to its sustained integration. Despite increasing scholarly attention to AI acceptance, relatively little is known about how undergraduate and postgraduate students differ in their perceptions and use of ChatGPT. This study seeks to address that gap by comparing the two groups across the UTAUT dimensions. Specifically, it explores: (1) how performance expectancy is shaped and whether it varies between undergraduates and postgraduates; (2) what influences effort expectancy and how these perceptions diverge across groups; (3) which aspects of social influence encourage or discourage ChatGPT use; and (4) the conditions that facilitate or hinder adoption. To investigate these questions, snowball sampling was employed to recruit 40 participants (20 undergraduates and 20 postgraduates). Data were collected through in-depth email interviews and analyzed descriptively by categorizing similar responses, presenting findings in tabular form, and incorporating direct quotations to capture participants' perspectives more fully.

2. ChatGPT: An AI Tool for Enhancing Education

The rapid development of artificial intelligence (AI) has significantly influenced education by accelerating the adoption of digital technologies that enhance both teaching and learning. Once viewed as a futuristic concept with untapped potential, AI is now a transformative force that reshapes university operations, teaching practices, and students' learning experiences (Özbay et al., 2025). Through intelligent systems—often described as AI-assisted teaching or AI-based learning—it provides innovative solutions to long-standing educational challenges. McCarthy (2007) defines AI as the creation of machines capable of intelligent, human-like behavior, while Naqvi (2020) emphasizes its focus on simulating such behavior to extend human capacities. In this sense, AI seeks to imitate natural intelligence by perceiving, analyzing, and responding to human actions (Nilsson, 1990; Chowdhary, 2020), thereby influencing both computational and human intelligence (Fjelland, 2020). Technologies such as machine learning and neural networks enable systems to perform tasks traditionally associated with human cognition—including speech recognition, visual perception, and decision-making (Tsz et al., 2021; Ferrara, 2022). With these capabilities, AI is positioned to play a transformative role in education. Projections indicate that the global AI user base will expand by 414.7 million between 2024 and 2030, reaching 729.11 million users (Statista, 2024). Parallel to this, the AI education market is expected to grow to $53.11 billion by 2032, reflecting rising investment in educational technologies (Shahzad et al., 2024). This expansion is driven by technological advances, economic shifts, lifestyle changes, and evolving student needs, while also sparking increased public, academic, and policy interest in digital learning (Asthana & Hazela, 2020). AI's role in education is not entirely new. Its roots trace back to the 1920s, when Pressey developed feedback machines (Petrina, 2004). Today, its applications range from software and mobile apps to robotics and recognition, decision-making, and translation systems (Hwang et al., 2020). AI offers solutions to common limitations in traditional lectures, such as one-size-fits-all pacing and limited feedback, though challenges remain in large-class settings (Kestin et al., 2024). Effective implementation of AI tools—particularly chatbots—relies on core principles such as goal setting, progress monitoring, self-assessment, personalized feedback, and adaptive algorithms (Chang et al., 2023; Hajian et al., 2023). These mechanisms enhance e-learning by tailoring content to individual strengths and weaknesses, rather than delivering uniform material. Personalization extends to both instruction and assessment, addressing learners' specific needs. Examples include social robots, intelligent platforms, and adaptive tutoring systems that adjust content according to student difficulties (Rodrigues et al., 2019). AI-powered assessment tools also improve the efficiency and accuracy of evaluations while providing individualized feedback. Similarly, AI-based libraries and learning environments enrich higher education by offering

tailored resources that align with students' preferences and characteristics (Walkington & Bernacki, 2020). Recent innovations such as educational chatbots highlight AI's potential to foster motivation and engagement. By providing immediate feedback, interactive experiences, and personalized assistance, chatbots expand learning opportunities (Kuhail et al., 2023). Initially designed as text-based systems for natural language interaction, chatbots now incorporate speech-to-text and text-to-speech functions, enabling real-time, multimedia communication (Able-Kader & Woods, 2015; Barış, 2020; Um et al., 2024). Empirical studies demonstrate that chatbots support learning by enhancing motivation, active participation, peer interaction, and performance through adaptive and metacognitive feedback. They also help increase students' self-confidence and emotional engagement (Kuhail et al., 2023; Studente et al., 2020; Lee et al., 2022). While learners often associate chatbot use with positive emotions, some confusion persists, pointing to the need for further improvements in their design (Qu et al., 2022; Gkinko & Elbanna, 2022).

ChatGPT, one of the most advanced AI chatbots, illustrates the wide scope of AI applications (Kohnke et al., 2023). Using machine and deep learning, it generates human-like text that supports lesson planning, delivery, and grading (Kovačević, 2023). Released by OpenAI in November 2022, it builds on earlier GPT models and specializes in conversation, explanation, and coding. OpenAI also developed DALL·E 2 for text-to-image generation (Eke, 2023). In education, ChatGPT is used for tutoring, research, and academic discussions (Dwivedi et al., 2023). It quickly became the fastest-growing AI tool, reaching 100 million users within two months and 400 million weekly by February 2025, with expectations of 1 billion by year's end (Andriansyah, 2023; Duarte, 2025). It has transformed academic practices by assisting with text production, assignments, grammar, vocabulary, tone, and feedback (Ivanov & Soliman, 2023; Barrot, 2023). Through self-supervised learning, it identifies patterns without manual labeling (Brown et al., 2020) and produces contextually relevant text from large datasets (Radford et al., 2019). It also helps outline essays, adapt material to learning progress (Cao et al., 2023), personalize content (Zhong et al., 2020), and support research through data analysis (Koltovskaia et al., 2024). Its abstracts can rival human-written ones (Casal & Kessler, 2023), though reliability concerns remain (Hill, 2020). Despite these benefits, ChatGPT lacks the nuanced feedback and emotional support provided by educators (Al Faruq et al., 2023). Its human-like text generation also raises ethical concerns over authorship and integrity (Eke, 2023; Cotton et al., 2023), with risks of academic dishonesty (Gamage et al., 2023). Universities must therefore adapt teaching strategies to balance AI use and dependence (Ivanov & Soliman, 2023). Research shows ChatGPT-generated exam answers can surpass student work and remain undetected (Scarfe et al., 2024), highlighting the importance of ethical integration to protect critical thinking, privacy, and fairness (Halaweh, 2023).

3. Integrating ChatGPT with the UTAUT Model

Worldwide initiatives increasingly emphasize educational technology, and its acceptance and adoption have become central research themes under Educational Technology Acceptance (ETA) (Šumak et al., 2011). By the early 2000s, studies had already explained user behavior in technology adoption (Hu et al., 1999). Venkatesh et al. (2003) compared widely used frameworks—such as TAM, TRA, TPB, Diffusion of Innovation, the Motivational Model, and Social Cognitive Theory—and integrated fourteen constructs into the UTAUT model, which has been shown to outperform earlier approaches (Oliveira et al., 2014). UTAUT highlights four main dimensions: performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC), shaped by demographic factors (Venkatesh et al., 2003). PE refers to the perceived usefulness and impact of a system (Cox, 2012; Brachten et al., 2021). In the case of ChatGPT, it reflects beliefs about efficiency and compatibility with academic practices (Menon & Shilpa, 2023). EE, which denotes perceived ease of use (Twum, 2021), is influenced by prior experience, complexity, and support systems (Muriithi et al., 2016) and plays a decisive role in adoption (Menon & Shilpa, 2023). SI, defined as the effect of others' opinions, can strengthen user confidence when positive but may increase ethical or reliability concerns when negative (Joa & Magsamen-Conrad, 2021; Astuti et al., 2023). ChatGPT's global spread underscores the significance of SI (Menon & Shilpa, 2023). FC refers to the availability of resources, training, and technical support (Jain et al., 2022; Oye et al., 2014). For ChatGPT, this includes access to devices, reliable internet, and troubleshooting, all of which facilitate routine integration (Menon & Shilpa, 2023). Together, these four dimensions generally encourage a positive attitude toward adoption (Donmez-Turan, 2019). Applications of UTAUT in higher education have extended to AI and digital platforms (Kalinkara & Özdemir, 2023). Factors such as outcomes, cost, and accessibility shape adoption (Nazri et al., 2023), while ethical awareness prevents misuse (Gupta et al., 2004). ChatGPT acceptance is further influenced by user experience, PE, and established habits (Romero-Rodríguez et al., 2023). Trust, privacy, SI, EE, and PE predict adoption intentions, while FC and behavioral intention determine actual use (Rana et al., 2024). Studies on Moodle confirm that PE and EE affect intentions, although SI may not (Abbad, 2021). AI anxiety mediates the relationship between EE

and intention (Yin et al., 2023), and EE is particularly crucial for novices (Strzelecki, 2023). Recent findings indicate that students' attitudes toward ChatGPT are shaped by usefulness, ease, feedback, and social norms (Almogren et al., 2024; Astuti et al., 2023; Supianto et al., 2024). Less confident learners tend to use it more but often experience anxiety about detection (Bin-Nashwan et al., 2023). FC has been shown to strongly predict intention (Habibi et al., 2023), while PE positively affects acceptance in assessments (Budhathoki et al., 2024). Trust emerges as the strongest predictor, whereas moral obligation and perceived risk act as barriers, though risk does not mediate between trust and intention (Lai et al., 2024). Students generally prefer user-friendly, efficient tools that reduce workload (Lai et al., 2024). Graduate students report higher levels of engagement with ChatGPT due to academic requirements (Bonsu & Baffour-Koduah, 2023; Chia et al., 2024), while positive perceptions overall enhance motivation and achievement (Shoufan, 2023). Both undergraduate and postgraduate students value its usability and time-saving benefits, though undergraduates express greater willingness for future use, whereas postgraduates remain more cautious given their expertise (Elkhodr et al., 2023). These dynamics reveal not only theoretical implications but also the lived realities of students who balance innovation with concerns over trust, ethics, and academic integrity.

4. Research Gap and Questions

Integrating ChatGPT into education has become increasingly important, yet significant challenges remain (Yang et al., 2021). As AI tools are still in the early stages of adoption, their full potential and benefits are not yet fully understood (Venkatesh, 2022). Although prior research has examined factors shaping AI acceptance, particularly in relation to ChatGPT, little is known about how undergraduate and postgraduate students differ in their use of such tools. While the UTAUT model emphasizes performance expectancy, effort expectancy, social influence, and facilitating conditions, variations between student groups remain underexplored. In-depth interviews offer an effective way to uncover how these dimensions operate differently across contexts. Moreover, issues of trust and privacy require closer examination, especially in relation to effort expectancy and facilitating conditions. Against this background, the present study investigates these dynamics through comparative in-depth interviews. It aims to provide deeper insights into technology acceptance in education by examining how performance expectancy, effort expectancy, social influence, and facilitating conditions shape the adoption and use of ChatGPT among undergraduate and postgraduate students. The research questions are structured accordingly.

RQ1: What factors influence the PE regarding the perceived contributions of ChatGPT for educational purposes among undergraduate and postgraduate students, and how do these factors differ between the two groups?

RQ2: What factors influence the EE regarding the perceived ease of use of ChatGPT among undergraduate and postgraduate students, and how do these factors vary between the two groups?

RQ3: What factors contribute to the SI that either encourage or discourage ChatGPT use for educational purposes among undergraduate and postgraduate students, and how do these factors differ between the two groups?

RQ4: What factors are perceived as supporting or hindering ChatGPT use for educational purposes, in terms of FC, among undergraduate and postgraduate students, and how do these factors differ between the two groups?

This study aims to deepen understanding of technology acceptance in education by examining UTAUT factor differences in ChatGPT use between undergraduate and postgraduate students, highlighting barriers and opportunities for AI integration.

5. Method

Snowball sampling was employed to recruit participants, starting with individuals reached through social media and similar networks who were then encouraged to share the study link (Thompson, 1997). This semi-automatic process continued until the required number of participants was achieved (Sadler et al., 2010), a method particularly effective for groups that are difficult to access or hesitant to disclose their identity (Atkinson & Flint, 2001). Participants provided demographic information such as age, education level, and gender, but no personal identifiers were collected due to ethical concerns surrounding ChatGPT use. Recruitment began with one undergraduate student, who referred peers using ChatGPT in their studies, and the same approach was applied with postgraduate students, allowing the sample to expand through peer referrals. As snowball sampling was employed, participants' disciplines or institutions were not prioritized, since this information was not central to the study's aim. Instead, the focus was placed on whether participants were undergraduate or postgraduate students, which was directly relevant to the research objectives. After providing consent, participants completed in-depth interviews via email, and their responses were transcribed verbatim and reviewed for language consistency before analysis. Because of the nature of snowball sampling, gender and age balance could not be fully ensured. Data collection was carried out between January 4 and January 22, 2025. The study included 40 participants (N = 40): 20 undergraduates and 20 postgraduates. Among

undergraduates, 12 were male (60%) and 8 female (40%), aged 19–23 (M = 21.2). Of these, 30% were aged 19–20, 50% aged 21–22, and 20% were 23. Among postgraduates, 9 were male (45%) and 11 female (55%), aged 26–33 (M = 29.8). Here, 25% were aged 26–28, 45% aged 29–30, and 30% aged 31–33. After collecting demographic data, participants answered 8 interview questions—two for each UTAUT construct—adapted from Venkatesh et al. (2003). Items from validated scales related to PE, SI, and FC were adapted to fit the study context. The questionnaire was reviewed by 7 experts, as recommended by Aung et al. (2021), and refined based on their feedback. A pilot interview with 5 participants ensured clarity. Data analysis involved repeated transcript reviews to identify themes. Common first-order codes like "ease of use" and "reliability issues" were grouped into the four UTAUT dimensions. A table was created to align quotes and themes, ensuring a clear and consistent analysis.

6. Findings

Table 1. shows the themes of undergraduate and postgraduate students' experiences and perceptions of using ChatGPT based on the four main dimensions of the UTAUT model.

Table 1. UTAUT-Themed Overview for University Students

S/n	First-order Concepts (UG Students, n = 20)	Second-order Concepts	Dimensions
1	Speed access to information (n = 19)	Task efficiency	PE
2	Accessibility (n = 15)	Convenience	PE
3	Positive perception of usefulness (n = 11)	Perceived Usefulness	PE
4	Usage for homework (n = 10)	Academic Productivity	PE
5	Concerns about reliability (n = 8)	Reliability Issues	PE
6	Easy to use and understand (n = 16)	Ease of Use	EE
7	Familiarity with AI tools (n = 12)	Prior Experience	EE
8	Exploring Educational Functions (n = 8)	Educational Assistance	EE
9	External pressure to use (n = 18)	Social Pressure	SI
10	Free of charge usage (n = 18)	Accessibility	FC
S/n	**First-order Concepts (PG Students, n = 20)**	**Second-order Concepts**	**Dimensions**
1	Assistance in academic writing (n = 18)	Academic Support	PE
2	Positive perception of usefulness (n = 17)	Perceived Usefulness	PE
3	Usage for thesis and publications (n = 15)	Research Applications	PE
4	Concerns about reliability (n = 14)	Reliability Issues	PE
5	Familiarity with AI tools (n = 16)	Prior Experience	EE
6	Concerns about over-reliance (n = 12)	Over-reliance	EE
7	Limited need for assistance (n =9)	Self-Reliance	EE
8	Concerns about misuse/academic integrity (n = 16)	Misuse Anxiety	SI
9	No external influence (n = 14)	Independent Usage	SI
10	Free of charge usage (n = 19)	Accessibility	FC

Below are the themed responses from the open-ended questionnaire. Participants, identified as "P1," "P2," etc., answered all eight questions. Undergraduate students are labeled UGP, and postgraduate students as PGP. This section highlights similarities and differences between these groups, with multi-theme responses categorized for further analysis.

Determinants of Performance Expectancy for ChatGPT Among University Students

The factors influencing performance expectancy (PE) regarding ChatGPT's educational benefits were grouped into five themes for undergraduates: task efficiency (90%), convenience (75%), academic productivity (50%), perceived usefulness (55%), and

reliability issues (40%). For postgraduates, themes included academic support (90%), perceived usefulness (85%), research applications (75%), and reliability issues (70%). Both groups shared perceived usefulness and reliability issues, while other themes differed.

"Perceived usefulness" was a key shared theme: about half of undergraduates praised ChatGPT's speed and effectiveness in providing quick, reliable answers, reflecting its learning enhancement potential (e.g., UGP9). Likewise, most postgraduates valued ChatGPT for research and academic tasks, highlighting its accuracy and ability to simplify complex concepts (e.g., PGP17).

UGP9: *"I think ChatGPT is really useful. It's not always possible to get such quick and effective responses from other sources, it seems like it's pretty handy."*, PGP17: *""I genuinely perceive ChatGPT as a highly useful tool for my research and academic work. I expect it to provide quick and accurate responses that help me grasp complex concepts much faster. I don't have to waste time searching through multiple sources, and I can get concise and relevant information. It's really an efficient way to enhance my learning and productivity, especially during crunch times with deadlines."*

Another shared theme in the PE category was "reliability issues." Undergraduates expressed concerns about inconsistent answers from ChatGPT, questioning its reliability (e.g., UGP2). Postgraduates similarly noted accuracy problems, warning that overreliance might cause missing critical information, emphasizing caution in its use (e.g., PGP6).

UGP2: *"The other day, our professor asked a concept in class, and at the same time, 2-3 of us asked ChatGPT. Two of us got the same answer, but one of us got a different one. Now, which one are we supposed to trust?"*, PGP6: *"I asked ChatGPT if there was an article on a specific topic, but it couldn't find one. Instead, it suggested some articles, but they weren't that high-quality, not even peer-reviewed journal articles. Then I searched on Google myself and found what I was looking for. If I had fully trusted ChatGPT, I might have thought there was no article available. That's why I remain cautious because it doesn't always provide accurate and reliable results."*

Undergraduates in the PE category highlighted fast information access, easy accessibility via internet-enabled devices, and heavy use for writing assignments, all contributing to greater task efficiency and academic productivity.

Determinants of Effort Expectancy for ChatGPT Among University Students

The factors affecting EE for ChatGPT's ease of use among undergraduates were ease of use (80%), prior experience (60%), and educational assistance (40%). For postgraduates, the themes were prior experience (80%), over-reliance (60%), and self-reliance (45%). The only common theme was prior experience. Over half of undergraduates noted their familiarity with similar AI tools helped them use ChatGPT efficiently (e.g., UGP11), while most postgraduates also reported minimal adjustment needed due to prior AI use (e.g., PGP19).

UGP11: *"Having used similar tools in the past, I was already familiar with how AI works, so using ChatGPT felt very natural and efficient."*, PGP19: *"As a PHD student, having used various AI tools for research purposes before, I didn't find ChatGPT difficult to use. I was able to quickly understand its features and use it efficiently for academic tasks. Given my previous experience with AI applications, I expected ChatGPT to be straightforward, and the learning curve was minimal."*

Undergraduates in the EE category found ChatGPT easy to use and understand, enabling quick, efficient use. They also highlighted that exploring its educational features helped them access content suited to their academic needs.

Social Influence Factors Affecting ChatGPT Use Among University Students

Undergraduates' SI factors focused on "social pressure" (n=18, 90%), with peers encouraging use and a sense of widespread adoption (UGP4). In contrast, postgraduates emphasized "misuse anxiety" (n=16, 80%) and "independent usage" (n=14, 70%), expressing concerns about plagiarism detection and noting a lack of peer influence (PGP3).

UGP4: *"It just felt like everyone was relying on it for assignments, and I thought if they're using it, I should be using it too. I remember my friend telling me, 'Come on, you should use it too, I did my assignment with it the other day, and the professor gave me a great grade!' After hearing that, I decided to give it a try."*, PGP3: *"No one really told me to use or not use ChatGPT. Most of us were just worried about plagiarism software or professors noticing it while writing our thesis. We had to be careful, so we mostly used it independently without telling to each other."*

No common SI themes appeared between undergraduates and postgraduates, highlighting a clear difference unlike other categories.

Facilitating Conditions Influencing ChatGPT Use Among University Students

For undergraduates and postgraduates, the sole FC theme was accessibility (90% and 95%), with both groups highlighting ChatGPT's free access, as seen in UGP6 and PGP8.

UGP6: *"It's free to use, so I can access ChatGPT whenever I want without worrying about costs. That ma-*

kes it really helpful for me.”, PGP8: *“There is a paid version of ChatGPT, but honestly, the free version is more than enough for me. I have other applications at my disposal for doing more detailed analyses, so the free version works perfectly for my needs.”*

7. Discussion and Conclusion

Recognizing the importance and challenges of integrating ChatGPT into education is crucial, especially as AI adoption and benefits remain unclear. While factors influencing ChatGPT use have been studied, differences between undergraduate and postgraduate students are less explored. This study examines how PE, EE, SI, and FC affect ChatGPT use and how these vary by student group, guided by four research questions.

The first research question aimed to identify factors influencing Performance Expectancy (PE) regarding ChatGPT's perceived educational contributions and differences between undergraduate and postgraduate students. Undergraduate students highlighted fast information access, convenience of use anytime and anywhere, and increased academic productivity, mainly using ChatGPT for homework. Some, however, questioned its reliability. Postgraduate students also emphasized PE, focusing on academic support, especially academic writing, thesis, and research tasks, but similarly raised concerns about reliability and accuracy.

Both groups identified “perceived usefulness” and “reliability concerns” as common themes. Undergraduates focused on short-term goals like quick information access and homework use, while postgraduates prioritized long-term academic activities such as writing and research. Postgraduates expressed greater anxiety over reliability due to higher accuracy demands.This comparison reveals similarities and differences between groups. Literature highlights PE as key in technology acceptance: students adopt technologies when they perceive improved task performance (Budhathoki et al., 2024), value accessibility and cost-effectiveness (Nazri et al., 2023), and are motivated by perceived usefulness (Bonsu & Baffour-Koduah, 2023). Reliability concerns hinder adoption (Rana et al., 2024; Lai et al., 2024), especially among postgraduates requiring accuracy (Elkhodr et al., 2023). Research use of ChatGPT aligns with Chia et al. (2024), who stress its role in thesis and publication support. Undergraduates' PE themes—task efficiency, accessibility, usefulness, academic productivity—reflect positive learning impacts and strong intention to use ChatGPT. Postgraduates emphasize academic support and research applications, with reliability concerns reflecting advanced academic needs.

The second research question explores factors influencing Effort Expectancy (EE) regarding ChatGPT's ease of use among undergraduate and postgraduate students. Undergraduates found ChatGPT easy to use, helped by familiarity with AI tools and its educational functions, making it a valuable academic resource. Postgraduates also noted prior AI experience but worried that over-reliance on ChatGPT might reduce problem-solving skills. Some preferred relying on their own expertise. “Prior experience” was the only common theme across both groups, while other themes differed. EE is crucial for AI adoption. Strzelecki (2023) highlights EE's importance for students lacking prior AI experience, reflected in undergraduates' ease-of-use perceptions here. Undergraduates emphasized familiarity with AI and ChatGPT's user-friendliness, consistent with literature (Rana et al., 2024; Almogren et al., 2024). For postgraduates, prior AI experience also influenced EE (Yin et al., 2023), but they expressed caution about over-dependence and limited need for assistance, reflecting greater self-reliance (Bonsu & Baffour-Koduah, 2023). Overall, findings align with literature on the significance of ease of use and prior experience in ChatGPT adoption, with postgraduates demonstrating more caution and independence.

The third research question explored factors influencing Social Influence (SI) on ChatGPT use, revealing contrasting themes between undergraduate and postgraduate students. Undergraduates emphasized social pressure from peers encouraging ChatGPT use, while postgraduates expressed “misuse anxiety,” fearing negative impacts on academic integrity and preferring independent use without external influence. Ethical concerns about ChatGPT facilitating cheating and undermining integrity align with literature (Eke, 2023; Gamage et al., 2023; Gupta et al., 2004). Postgraduates' self-reliant approach reflects findings by Bonsu and Baffour-Koduah (2023), highlighting graduate students' autonomous engagement due to academic demands. Literature underscores SI's role in technology adoption in education, with peer influence prominent for undergraduates (Astuti et al., 2023; Supianto et al., 2024), and negative SI linked to concerns about ethics and misuse among postgraduates (Menon & Shilpa, 2023), emphasizing their focus on academic integrity and research accuracy.

To answer the final research question on factors supporting or hindering ChatGPT use in terms of Facilitating Conditions (FC), both undergraduate and postgraduate students emphasized “free usage” as a key enabler, removing financial barriers and enhancing accessibility for educational use. This aligns with Venkatesh et al. (2003), who noted that access to resources and support influences technology use. Similarly, Menon & Shilpa (2023) and Rana et al. (2024) highlighted those adequate resources, including cost-free access, promote adoption. Astuti et al. (2023) and Habibi et al. (2023) further emphasized the role of FC in AI and e-learning adoption, with

Habibi et al. (2023) identifying FC as a strong predictor of students' intention to use ChatGPT. These findings reinforce that accessible, low-barrier conditions—especially free access—play a vital role in supporting educational engagement with AI tools.

In conclusion, ChatGPT has transformed education by offering personalized learning, writing, research, and data analysis support, while also raising ethical concerns around academic integrity and responsible use. Guided by the UTAUT model—comprising PE, effort expectancy, SI, and FC—this study explored how these factors influence ChatGPT use among undergraduate and postgraduate students. While prior studies emphasize these factors (e.g., PE, familiarity, accessibility), limited research compares different educational levels. This study addressed that gap, revealing that undergraduates see ChatGPT as enhancing task efficiency and academic productivity, despite concerns about reliability. Postgraduates value its support in academic writing and research but also question its accuracy. Both groups find it easy to use; undergraduates benefit from AI familiarity, while postgraduates worry about over-reliance affecting critical thinking. SI varies: undergraduates report peer influence, while postgraduates highlight independent use and integrity concerns. Both agree that free access, as an FC, significantly facilitates adoption and usage in educational settings.

This study offers practical insights for integrating ChatGPT into education by highlighting how PE, effort expectancy, SI, and FC influence its use among undergraduate and postgraduate students. Educators can enhance adoption by improving accessibility, addressing reliability concerns, and tailoring support for students with limited AI experience. The findings provide practical implications for integrating ChatGPT into education. Enhancing accessibility, addressing reliability concerns, and offering tailored support for students with limited AI experience can encourage effective adoption. Insights from this study can inform policy development for curriculum integration while safeguarding academic integrity. Moreover, future research should explore how issues of trust and privacy affect students' willingness to adopt AI. From the authors' perspective, these results highlight the importance of balancing the pedagogical benefits of ChatGPT with the risks of overreliance, underscoring the need for educators to adopt a critical and guided approach in classroom practices.

However, the study has limitations. Snowball sampling may have restricted participant diversity and failed to ensure balanced representation across demographics like gender, age, and education level. Email interviews may also have limited data depth due to the lack of direct interaction. Future studies should use broader sampling methods, increase sample size, and adopt richer qualitative approaches, such as face-to-face or virtual interviews, to better understand how demographic factors affect ChatGPT use in education.

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