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## STUDENTS' ATTITUDES TOWARDS CHATGPT AS A LEARNING ASSISTANT

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### Abstract:

The emergence of artificial intelligence (AI) technologies has transformed teaching and learning practices in higher education institutions. Among all, ChatGPT has gained widespread attention as a learning assistant capable of supporting academic writing, idea generation, research assistance as well as personalised learning. Despite its increasing use among university students, concerns regarding academic integrity, reliability of information, ethical usage, and overdependence on AI technologies continue to raise questions about students' acceptance and attitudes towards ChatGPT in educational settings. Therefore, the aim of this study is to examine the influence of perceived usefulness and perceived ease of use on attitudes as well as the influence of attitudes on behavioral intention to use ChatGPT as a learning assistant among students in higher education institutions. A quantitative cross-sectional research design was employed using a survey method. Data were collected from 250 undergraduate students from public and private higher education institutions in Malaysia through an online questionnaire distributed via Google Forms. The measurement items were adapted from previous validated studies and assessed using a five-point Likert scale. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) and Partial Least Squares Structural Equation Modelling (PLS-SEM) through SmartPLS. The findings revealed that perceived usefulness and perceived ease of use significantly influenced students' attitudes towards ChatGPT as a learning assistant. In addition, students' attitudes

significantly influenced behavioural intention to use ChatGPT for academic purposes. The structural model explained 68.7% of the variance in behavioural intention. The findings indicate that students generally hold positive attitudes towards ChatGPT and perceive the technology as useful, accessible, and supportive of learning activities. The study contributes to the growing literature on AI adoption in higher education by extending the Technology Acceptance Model (TAM) within the context of AI-powered conversational learning tools.

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Artificial Intelligence, AI Learning Assistant, ChatGPT, Behavioral Intention, Students' Attitudes, Technology Acceptance Model (TAM)



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## Introduction

The integration of digital technologies into education has significantly transformed teaching and learning practices in higher education institutions worldwide (Crompton & Burke, 2023; Tlili et al., 2023). In recent years, artificial intelligence (AI) has emerged as one of the most influential technological innovations in education, offering new opportunities for personalised learning, academic support, and enhanced knowledge accessibility (Kasneci et al., 2023). Among these innovations, ChatGPT has gained substantial attention due to its ability to generate human-like responses, provide explanations, summarise information, assist in writing tasks, and support interactive learning experiences (Lo, 2023; Zhai, 2022).

ChatGPT, developed by OpenAI, is an advanced conversational AI model based on natural language processing and machine learning technologies. Since its introduction, students across higher education institutions have increasingly utilised ChatGPT for a wide range of academic purposes, including assignment assistance, language learning, brainstorming, coding support, and research-related tasks (Firat, 2023; Sallam, 2023). Its accessibility, ease of use, and real-time responsiveness have contributed to its rapid adoption as a learning assistant among university students (Farrokhnia et al., 2024).

However, despite its growing popularity, the integration of ChatGPT into higher education is accompanied by several concerns and uncertainties. Key issues include academic integrity risks, misinformation, overdependence on AI tools, and potential negative impacts on students' critical thinking and independent learning skills (Dwivedi et al., 2023). These challenges have prompted ongoing debates among educators, policymakers, and institutional leaders regarding the appropriate and ethical use of generative AI in academic environments (Chiu, 2024).

The problem becomes more pronounced in the context of Malaysia, where higher education institutions are actively embracing digital transformation and Education 5.0 initiatives, yet are still in the early stages of developing comprehensive policies and governance frameworks for AI usage (Ministry of Higher Education Malaysia, 2023). Issues such as plagiarism concerns, lack of clear AI usage guidelines, data privacy risks, and inconsistent institutional policies further complicate the integration of ChatGPT into teaching and learning processes (Rahim et al., 2024).

In addition, although students widely adopt ChatGPT for academic purposes, there remains limited empirical understanding of their attitudes, perceptions, and behavioural intentions towards using AI as a learning assistant, particularly within developing country contexts such as Malaysia (Rahim et al., 2024). Existing literature has largely focused on traditional e-learning systems and digital learning platforms (Al-Emran et al., 2022), with fewer studies examining AI-powered conversational tools in higher education settings (Lo, 2023). This creates a research gap in understanding how factors such as perceived usefulness and perceived ease of use influence students' acceptance of ChatGPT.

Furthermore, students' acceptance of AI technologies plays a critical role in shaping their willingness to rely on ChatGPT for academic tasks. If students perceive the system as unreliable or difficult to interpret, their acceptance and continued use may be negatively affected (Baabdullah et al., 2019). Studies in Malaysian higher education institutions suggest generally positive perceptions towards AI-assisted learning, but concerns regarding ethical use, accuracy of AI-generated content, and overreliance on technology remain persistent (Rahim et al., 2024).

Therefore, there is a clear need for empirical research that examines students' attitudes towards ChatGPT as a learning assistant and identifies the key determinants influencing its acceptance and behavioural intention in higher education. Addressing this issue is particularly important in Malaysia's evolving digital education landscape, where universities are increasingly integrating AI technologies to support teaching, learning, and innovation-driven education aligned with national higher education transformation goals (Ministry of Higher Education Malaysia, 2023).

The objectives of this study are:

- i. To examine the influence of perceived usefulness on attitudes towards ChatGPT as a learning assistant among students in higher education institutions.
- ii. To examine the influence of perceived ease of use on attitudes towards ChatGPT as a learning assistant among students in higher education institutions.
- iii. To determine the relationship between attitudes and behavioural intention of using ChatGPT in higher education among students in higher education institutions.

## Literature Review

### *Artificial Intelligence in Higher Education*

Artificial intelligence (AI) has increasingly become part of educational transformation initiatives across higher education institutions worldwide (Kasneci et al., 2023). AI technologies are capable of supporting teaching, learning, administration, and assessment

processes through automation, intelligent tutoring systems, adaptive learning platforms, and conversational AI tools (Chiu, 2024). The integration of AI in education aims to improve learning efficiency, personalisation, and accessibility for students from diverse educational backgrounds (Crompton & Burke, 2023).

In Malaysia, the adoption of AI in higher education has accelerated alongside the implementation of digital transformation agendas and Education 5.0 initiatives introduced by Ministry of Higher Education Malaysia. Malaysian universities have increasingly encouraged the use of digital learning technologies, virtual learning environments, and AI-supported educational tools to enhance students' learning experiences and digital competencies (Ministry of Higher Education Malaysia, 2023). Universities such as Universiti Teknologi MARA and Universiti Malaya have begun integrating AI-related learning activities and digital innovation programmes into teaching and learning practices.

Recent developments in generative AI technologies have further accelerated the adoption of AI-based learning tools among students. ChatGPT represents one of the most widely used AI applications in educational settings due to its ability to provide immediate responses, generate explanations, and assist students in solving academic problems (Lo, 2023; Tlili et al., 2023).

### ***ChatGPT as a Learning Assistant***

ChatGPT functions as a conversational learning assistant capable of supporting students across various academic disciplines (Firat, 2023). Students may use ChatGPT to obtain explanations of difficult concepts, summarise lecture materials, generate writing ideas, improve language skills, and receive guidance for assignments and projects (Kasneci et al., 2023). In Malaysian universities, students increasingly use ChatGPT for academic writing assistance, coding support, research idea generation, and English language enhancement, especially among students involved in online and blended learning environments (Rahim et al., 2024).

The flexibility and accessibility of ChatGPT make it attractive to students seeking immediate academic support outside traditional classroom settings. Unlike conventional learning resources, ChatGPT offers interactive and personalised responses based on users' prompts (Farrokhnia et al., 2024). The convenience of accessing ChatGPT through smartphones and laptops has also contributed to its widespread use among Malaysian university students, particularly among digital-native learners who are highly familiar with online technologies.

However, concerns regarding misinformation, overreliance, plagiarism, and ethical usage have raised questions about the responsible integration of ChatGPT into higher education (Dwivedi et al., 2023). In Malaysia, educators have expressed concerns regarding students submitting AI-generated assignments without proper citation or critical evaluation of the information provided by AI systems (Rahim et al., 2024). Consequently, universities are increasingly discussing the development of AI ethics guidelines and responsible AI usage policies within academic settings.

### ***Technology Acceptance Model (TAM)***

The Fred Davis Technology Acceptance Model (TAM) is one of the most widely used theories for explaining users' acceptance of technology (Davis, 1989). TAM proposes that perceived usefulness and perceived ease of use influence users' attitudes and behavioural intentions

towards technology usage. The model has been extensively applied in studies related to e-learning, online learning systems, and digital technologies in education (Al-Emran et al., 2022). Perceived usefulness refers to the extent to which individuals believe that using a technology enhances their performance, while perceived ease of use refers to the degree to which a technology is perceived as easy to learn and operate (Davis, 1989). In the context of ChatGPT, students are more likely to adopt the technology if they perceive it as beneficial for improving learning efficiency, completing academic tasks, and supporting academic achievement (Baabdullah et al., 2019).

In Malaysian higher education institutions, TAM has frequently been used to examine students' acceptance of learning management systems, online learning applications, and mobile learning technologies (Rahim et al., 2024). Given the rapid emergence of generative AI tools, TAM provides an appropriate theoretical framework for examining students' attitudes towards ChatGPT as a learning assistant.

### Research Framework

The conceptual framework of this study is based on the Technology Acceptance Model (TAM) to explain students' intention to use ChatGPT for learning in higher education. TAM suggests that two main factors influence technology use: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to how much students believe ChatGPT can improve their academic performance, such as helping them understand topics or complete assignments faster. PEOU refers to how easy students feel ChatGPT is to use without much effort. When students find ChatGPT useful and easy to use, they are more likely to develop a positive attitude toward it. Attitude plays an important role in the model because it acts as a link between beliefs and intention. A positive attitude toward ChatGPT leads to a stronger intention to use it for learning in the future. Overall, behavioural intention is the final outcome of the model. It is influenced by attitude, PU, and PEOU. The framework shows that PU and PEOU influence intention through attitude, which ultimately shapes students' behavioural intention to use ChatGPT for learning. However, in this paper, the authors will only examine direct relationship between PU and PEOU with attitude and between attitude and behavioural intention to use ChatGPT.

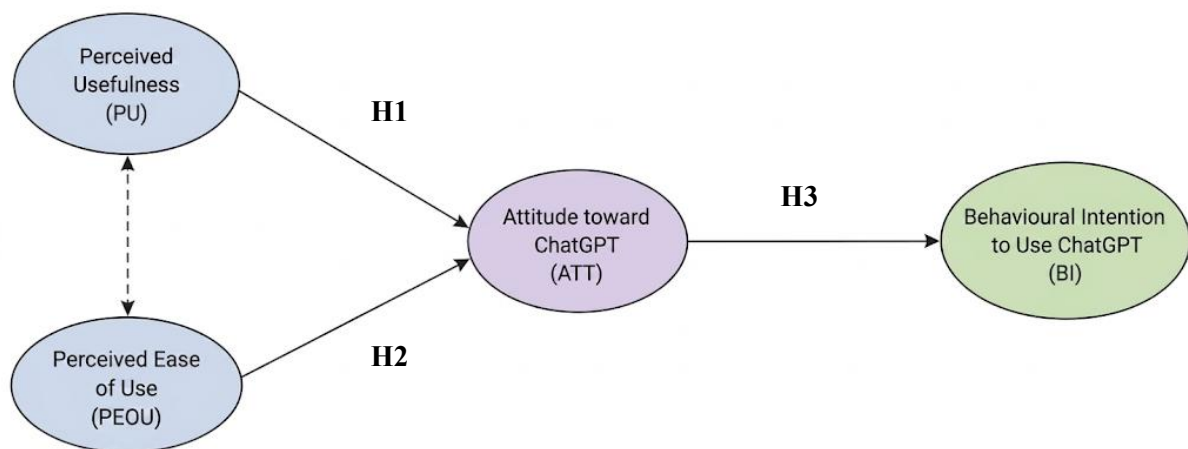


Figure 1: Research Framework

## Methodology

This study employed a quantitative cross-sectional research design to analyze the relationships between perceived usefulness (PU), perceived ease of use (PEOU), attitudes towards ChatGPT (ATT), and behavioural intention to use ChatGPT (BI) as a learning assistant among higher education institution students. Data collection was done through distribution of a set of survey to 250 conveniently selected undergraduate students in public and private higher education institutions. This population represented active users of digital technologies and AI-based learning tools within higher education environments. Additionally, the sample size was considered adequate for the intended Partial Least Squares Structural Equation Modelling (PLS-SEM) analysis, which is suitable for exploratory studies and predictive models involving multiple constructs and relationships (Hair et al., 2021).

The research instrument was adapted from established TAM instruments originally developed by Davis (1989) as well as AI and educational technology adoption studies by Venkatesh, et al. (2003). The questionnaire comprised 29 measurement items, organized in two sections: Section A contained items related to demographic information such as gender, age, programme of study, type of institution, and frequency of ChatGPT usage; and Section B contained measurement items related to perceived usefulness (6 items), perceived ease of use (6 items), attitudes towards ChatGPT (6 items), and behavioural intention to use ChatGPT for learning purposes (6 items). It is noted that all constructs are measured reflectively. All measurement items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), selected for its effective use in social science and educational research for measuring perceptions and attitudes (Sekaran & Bougie, 2020). The questionnaire items were reviewed and refined by two subject-matter experts to ensure clarity, relevance, and suitability within the Malaysian higher education context, particularly in terms of AI familiarity, academic usage scenarios and institutional learning practices.

Data collection was conducted efficiently using an online questionnaire via Google Forms, which was distributed through social media platforms, student communication groups, and academic networks to students across multiple institutions. Participation was entirely voluntary, with high importance placed on ethical considerations; respondents were informed about the study's purpose and assured that all information provided would remain confidential and anonymous, ensuring privacy and informed consent throughout the process.

The collected data were analyzed using Statistical Package for the Social Sciences (SPSS) and SmartPLS software. SPSS was used to perform descriptive statistical analyses (frequency, percentage, mean, and standard deviation) to describe the demographic profiles of respondents and summarise the data. Meanwhile, Partial Least Squares Structural Equation Modelling (PLS-SEM) through SmartPLS was employed for testing the research model and hypotheses. PLS-SEM was selected because it is suitable for predictive and exploratory research involving latent constructs and complex relationships between variables (Hair et al., 2021). The analysis involved assessing the measurement model, including reliability and validity tests, followed by evaluation of the structural model to examine the relationships among the study variables.

## Results dan Discussions

### *Demographic Profile and Usage Patterns*

The demographic analysis included 250 undergraduate students from public and private higher education institutions in Malaysia. The gender distribution of the sample was 58% female and 42% male. A significant majority of respondents, totaling 74.8%, were within the age bracket of 20 to 24 years. These students were primarily enrolled in programs such as Business (31.2%), Social Sciences (22.0%), Education (18.8%), and Engineering (16.8%). Regarding technology adoption, 85.2% of the participants reported having used ChatGPT for academic purposes at least once. Students utilized ChatGPT for a variety of academic tasks, most notably for assignment assistance (79.2%), idea generation (69.6%), and research support (66.8%), while coding assistance (35.2%) was the least frequent application.

**Table 1: Demographic Profile of Respondents**

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	105	42.0
	Female	145	58.0
Age	Below 20 years	28	11.2
	20–24 years	187	74.8
	25 years and above	35	14.0
Programme	Business	78	31.2
	Social Sciences	55	22.0
	Education	47	18.8
	Engineering	42	16.8
	Others	28	11.2
ChatGPT Usage for Academic Purposes	Yes	213	85.2
	No	37	14.8

**Table 2: Frequency of ChatGPT Usage by Academic Purpose**

Academic Purpose	Frequency	Percentage (%)
Assignment Assistance	198	79.2
Research Support	167	66.8
Language Improvement	152	60.8
Idea Generation	174	69.6
Coding Assistance	88	35.2
Presentation Preparation	141	56.4

Besides that, students also generally demonstrated positive perceptions and attitudes towards ChatGPT, with behavioural intention recording the highest mean score (Refer Table 3).

**Table 3: Mean and Standard Deviation of Constructs**

Construct	Mean	Standard Deviation
Perceived Usefulness	4.18	0.63
Perceived Ease of Use	4.24	0.58
Attitudes	4.20	0.60
Behavioural Intention	4.27	0.57

**Measurement Model Assessment**

The measurement model was evaluated to ensure the reliability and validity of the research constructs. Reliability tests indicated that all constructs exceeded the recommended threshold of 0.70 for both Cronbach's Alpha and Composite Reliability (CR). Specifically, Cronbach's Alpha values ranged from 0.887 to 0.913, while CR values ranged from 0.918 to 0.935. Convergent validity was established as the Average Variance Extracted (AVE) for all variables exceeded the 0.50 threshold, with values ranging from 0.691 to 0.761. Furthermore, discriminant validity was confirmed using the Heterotrait-Monotrait (HTMT) ratio, where all calculated values remained below the 0.90 limit, indicating that each construct in the model is statistically distinct.

**Table 4: Reliability and Convergent Validity Results**

Construct	Items	Cronbach's Alpha	Composite (CR)	Reliability AVE	Result
Perceived Usefulness	5	0.901	0.926	0.714	Accepted
Perceived Ease of Use	5	0.887	0.918	0.691	Accepted
Attitudes	5	0.913	0.935	0.742	Accepted
Behavioural Intention	4	0.896	0.927	0.761	Accepted

**Table 5: Discriminant Validity (HTMT Ratio)**

Construct	PU	PEOU	ATT	BI
PU	—			
PEOU	0.812	—		
Attitudes	0.834	0.798	—	
Behavioural Intention	0.781	0.743	0.845	—

**Structural Model and Hypothesis Testing**

The structural model results demonstrated substantial predictive power for the proposed framework. The model successfully explained 61.2% of the variance in students' attitudes and 68.7% of the variance in their behavioural intention to use ChatGPT. All three primary hypotheses were supported by the data with high levels of statistical significance where  $p < 0.001$ . Perceived usefulness (PU) significantly influenced attitudes ( $\beta = 0.412$ ,  $t = 6.284$ ), and perceived ease of use (PEOU) also showed a significant positive effect on attitudes ( $\beta = 0.356$ ,

$t = 5.117$ ). Additionally, attitudes ( $\beta = 0.428$ ,  $t = 6.913$ ) was found to be significant predictor of students' behavioural intention to use ChatGPT for academic purposes.

**Table 6: Coefficient of Determination (R<sup>2</sup>)**

Endogenous Construct	R <sup>2</sup>	Interpretation
Attitudes	0.612	Substantial
Behavioural Intention	0.687	Substantial

**Table 7: Structural Model Results and Hypothesis Testing**

Hypothesis	Relationship	$\beta$	t-value	p-value	Result
H1	Perceived Usefulness → Attitudes	0.412	6.284	0.000	Supported
H2	Perceived Ease of Use → Attitudes	0.356	5.117	0.000	Supported
H3	Attitudes → Behavioural Intention	0.428	6.913	0.000	Supported

The findings reveal that Malaysian undergraduate students generally maintain positive attitudes toward ChatGPT as a learning assistant. PU was identified as the most significant predictor of these attitudes, suggesting that students value the tool's ability to enhance academic performance, improve efficiency, and support the completion of complex learning tasks. This finding is consistent with recent studies demonstrating that perceived usefulness remains the strongest determinant of students' acceptance and intention to use ChatGPT in educational settings (Alshammari & Babu, 2025; Stroud & Du, 2025; Pham et al., 2025). Students are more likely to embrace generative AI when they perceive tangible benefits such as time savings, improved productivity, enhanced creativity, and assistance with information gathering. In the Malaysian higher education context, these positive perceptions may also be influenced by increasing academic workloads, time constraints, and the growing emphasis on self-directed learning among university students.

Similarly, PEOU significantly influenced students' attitudes toward ChatGPT, indicating that accessibility, convenience, and user-friendly interaction are important factors in the adoption of conversational AI technologies. Recent studies have likewise reported that ease of use contributes positively to students' acceptance of ChatGPT, either directly or indirectly through enhancing perceptions of usefulness (Jamieson & Fuchs, 2024; Alshammari & Babu, 2025). The conversational interface of ChatGPT reduces technological barriers and enables students to obtain immediate assistance with academic tasks, thereby fostering favourable attitudes toward its use. These findings reinforce the continued applicability of the Technology Acceptance Model (TAM) in explaining the adoption of generative AI tools in higher education environments.

The high adoption rates and positive attitudes observed in this present study reflect the broader digital transformation occurring within higher education and are aligned with Malaysia's aspiration to integrate advanced digital technologies into teaching and learning. However, several challenges remain. The substantial use of ChatGPT for assignment assistance raises concerns regarding academic integrity, plagiarism, authorship, and the potential weakening of students' critical thinking and independent learning abilities. Recent research has highlighted

similar concerns, with students and educators expressing apprehension about overreliance on AI-generated content, the accuracy of generated information, and the ethical implications of submitting AI-produced work without appropriate disclosure or critical evaluation (Stroud & Du, 2025). Furthermore, evidence suggests that the rapid growth of generative AI use among university students has prompted higher education institutions worldwide to reconsider assessment practices and strengthen academic integrity policies.

## Conclusion

The rapid growth of generative AI, particularly ChatGPT, has significantly transformed higher education learning environments by providing students with personalized and accessible academic assistance. This study contributes to the existing literature by extending the Technology Acceptance Model (TAM) within the context of AI in education, finding that perceived usefulness and perceived ease of use significantly influence students' attitudes and behavioral intentions. These findings offer critical practical insights for educators and policymakers, suggesting that universities must develop ethical guidelines, provide AI literacy training, and encourage the responsible integration of technology to ensure that AI supports rather than replaces critical thinking and independent learning. However, the study is limited by its use of convenience sampling and a cross-sectional design, which may impact generalizability and the ability to track changes in student attitudes over time. Future research should therefore focus on longitudinal effects, comparative studies between different AI tools, and the role of digital readiness in academic performance. Ultimately, while students perceive ChatGPT positively, higher education institutions must adopt balanced strategies that promote ethical awareness and strategic integration to foster a productive and responsible learning experience.

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