

ASSESSING THE ACCEPTANCE OF CHATGPT AMONG HIGHER EDUCATION STUDENTS: A CASE STUDY IN PAHANG

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Abstract

The current study, which is entitled Evaluating the Assessing the Acceptance of ChatGPT Among Higher Education Students: A Case Study in Pahang, aimed to assess the behavioural intention of university students with regard to using ChatGPT in various academic levels. The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) was selected as a cross-sectional survey approach, data were collected from 184 respondents between March and May 2025 through both online and printed questionnaires. The core antecedents included in the analysis were the performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, and personal innovativeness and were operationalised using a five-point Likert scale. Descriptive analysis revealed an overall mean behavioural intention score of 3.523 (SD = 0.901), indicating a generally positive inclination toward ChatGPT adoption. Notably, both bachelor and postgraduate students erred higher mean scores (4.400 and 4.370, respectively) in comparison with students of the foundation level (3.393), which suggests that students of higher learning level assign AI-based technologies a higher academic rating. These results highlight an increasing openness to generative AI among the population of higher education, and at the same time, they indicate the presence of strong inequalities among the academic layers. Therefore, the findings reinforce the need to introduce specific AI-literacy programmes and responsible digital education to facilitate fair and responsible usage. Despite the methodological constraints, such as sampling, and the disproportional number of groups, the generalisability of the findings is diluted but still, the study provides useful information to the growing discourse on AI implementation into higher education, at least in the developing regional milieus. Moreover, the study presents practical research implications to institutions of higher education working to come up with evidence-based, inclusionary, and ethically sustainable strategies to implement ChatGPT and other similar technologies in pedagogical and curricular contexts.

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INTRODUCTION

"Real world" acceptance of ChatGPT by students at the tertiary level depends on a range of parameters, as described in different research works. These studies are grounded in theoretical perspectives of user perceptions and behavior such as the Unified Theory of Acceptance and Use of Technology (UTAUT) and subsequent revisions, but shed light on factors that influence the adoption of ChatGPT. Performance expectancy, effort expectancy, social influence, and hedonic motivation are all salient determinants of students' intentions to use ChatGPT. The implications of the study highlight both the potential benefits and blockages around introducing ChatGPT into schools as students have a generally positive view toward it there are concerns that need to be addressed.

The integration of generative artificial intelligence (AI) into higher education has introduced transformative opportunities for teaching and learning. Among these technologies, ChatGPT has emerged as a widely adopted tool, offering capabilities such as real-time feedback, personalized learning support, and assistance in academic writing and problem-solving (Kasneci et al., 2023; Strzelecki, 2024). Its potential to enhance educational experiences aligns with global trends in digitalization and Malaysia's efforts to embrace the Fourth Industrial Revolution (Daud & Rasiah, 2023).

The integration of ChatGPT into higher education offers considerable pedagogical benefits; however, its adoption within universities located in rural regions such as Pahang remains uneven and is constrained by challenges related to ethical use, academic integrity, and digital readiness (Nebieridze & Jojua, 2024; Putra et al., 2023). Existing scholarship emphasizes that understanding the determinants of technology acceptance is critical for ensuring the effective and responsible incorporation of AI tools into educational contexts. Without a clear grasp of these factors, efforts to embed generative AI in teaching and learning risk being fragmented and misaligned with institutional objectives. Researchers have shown that we need to know what drives technology acceptance if we want to bring AI tools into education in a way. Technology acceptance matters. The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) gives a framework for looking at intention. The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) includes performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit and personal innovativeness (Venkatesh V. et al., 2012). AI tools need guidance. Education benefits from that. The belief that ChatGPT can improve performance – is the factor that drives adoption. Moreover, social influence and supporting conditions affect adoption well (Siyavooshi et al., 2019) (Guo et al., 2025; Strzelecki, 2024) (Li et al., 2024; Strzelecki, 2024). On the hand concerns, about privacy, reduced thinking and plagiarism show that we need ethical guidelines and AI literacy programs. Ethical guidelines and AI literacy programs can lower the risks (Consuegra-Fernández et al., 2024) (Khan, 2024).

Even though there is research, on AI adoption around the world we still have data from Malaysia. The lack of data is especially true in places like Pahang, where the amount of technology and the quality of infrastructure differ a lot. A few studies have looked at how UTAUT2 constructs work with innovativeness to affect how students accept generative AI tools. his study aims to address the identified gap by examining the factors that influence university students in Pahang to utilize ChatGPT

and by analyzing the relationship between UTAUT2 constructs and the acceptance of ChatGPT. By providing localized insights, the research seeks to inform institutional strategies, guide the development of AI literacy initiatives, and promote equitable and ethical integration of generative AI within higher education.

Previous studies have demonstrated that students' acceptance of ChatGPT is influenced by several technological and behavioural factors, particularly performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit and personal innovativeness. However, findings may vary across institutional and regional contexts. In addition, relatively limited attention has been given to differences in behavioural intention across academic levels. Therefore, this study extends previous research by examining the level and determinants of behavioural intention to use ChatGPT among higher education students in Pahang and by comparing behavioural intention across foundation, bachelor's degree and postgraduate students.

OBJECTIVES

The research aims to examine the acceptance of ChatGPT among higher education students in Pahang. It is also to see the level of behavioral intention among higher education students in Pahang to use ChatGPT for academic purposes. Other than that, this paper aims to examine the influence of performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit and personal innovativeness on students' behavioral intention to use ChatGPT. The last objective is to examine differences in behavioral intention to use ChatGPT among students from different academic levels which are foundation, bachelor's degree and postgraduate programme.

METHODOLOGY

Study Area

This research endeavour, entitled "Evaluating the Acceptance of ChatGPT Among Higher Education Students: A Case Study in Pahang," sought to investigate the level behavioural intentions of students regarding the utilization of ChatGPT, alongside their educational qualifications. A cross-sectional survey methodology was employed, informed by the methodological frameworks posited by Wang and Cheng (2020). This methodological strategy was considered appropriate due to its ability to scrutinize multiple variables within a constrained temporal framework while upholding methodological rigor and economic viability.

The data collection process extended over a two-month timeframe, specifically from March to May of the year 2025. To alleviate potential common method bias, the research adhered to the procedural guidelines advocated by Podsakoff et al. (2003), which encompassed the assurance of participant anonymity and confidentiality. These protocols were instituted to promote frank and impartial responses.

Acknowledging the intrinsic difficulties associated with engaging student participants, as underscored by Aguirre-Urreta and Hu (2019), the research team implemented focused recruitment methodologies. These strategies encompassed digital outreach initiatives via university communication platforms and student networking channels to augment participation rates across institutions situated in Pahang. The research involved systematic data collection using a thoughtfully crafted questionnaire, which was based on theoretical models from the Unified Theory of Acceptance and Use of Technology

2 (UTAUT2). The measurement tool implemented a five-point Likert scale, going from 1 ('Strongly Disagree') to 5 ('Strongly Agree'), to analyse perceptions across different significant dimensions. These dimensions encompass performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, and personal innovativeness—all of which are essential for comprehending students' behavioural intentions regarding the utilization of ChatGPT. Due to the absence of a comprehensive sampling frame for university students in Pahang, a non-probability convenience sampling method was employed. Despite this limitation, the study successfully recruited a total of 184 respondents, surpassing the required minimum sample size of 153. This threshold was determined using G*Power analysis for linear multiple regression (F-Test: R^2 deviation from zero) with parameters set at a medium effect size, $\alpha = 0.05$, and statistical power = 0.95. The survey was predominantly conducted online utilizing Google Forms, disseminated through digital platforms affiliated with the university and various social media outlets. In order to accommodate participants who faced limitations in internet connectivity, printed copies of the questionnaire were also circulated. Responses obtained from both digital and hardcopy formats were aggregated and subsequently entered into Microsoft Excel for the preliminary phases of data cleansing and organization. Following this, the refined dataset was transferred into IBM SPSS Statistics Version 26 for an extensive analysis of the data. The statistical methodologies employed were centered on descriptive analysis aimed at investigating the extent of students' behavioral intentions to utilize ChatGPT in conjunction with their educational backgrounds.

Research Design

This study is categorized as social science research, focusing on human knowledge, attitudes, behavior, and practices. A non-experimental, quantitative approach was employed, using a survey to collect data from a large population, while excluding individual emotions and feelings (Rahi, 2020). The study utilized a cross-sectional design, measuring both exposure and outcomes at a single point in time. This design is cost-effective and time-efficient, often used for descriptive purposes without hypotheses, aiming to describe populations or subgroups with respect to outcomes and risk factors (Levin, 2021).

For data analysis, inferential statistics were used to make inferences about the population. A correlation coefficient test was applied to explore relationships between variables. While the data initially showed non-normal distribution, the central limit theorem was applied (sample size > 30), allowing the assumption of normality and the use of parametric tests to compare data differences across variables and sociodemographic profiles.

Sampling

The study successfully attained a final sample of 184 participants, surpassing the requisite minimum sample size of 153, as established through G*Power analysis for F-Test: Linear Multiple Regression (R^2 deviation from zero, medium effect size, $\alpha = 0.05$, power = 0.95). The final sample of 184 participants exceeded the minimum requirement by 31 participants, providing an adequate sample for the planned statistical analyses. This larger sample size enhances the precision of parameter estimates, improves the stability of the regression model, and increases the reliability and generalizability of the study findings. Furthermore, obtaining a sample larger than the minimum recommended by the power analysis helps to compensate for potential data loss arising from incomplete responses, missing values, or outliers, thereby strengthening the overall robustness of the statistical analyses.

Sampling size

The sample size is only 153 respondents. It is determined using G*Power analysis for linear multiple regression, with a medium effect size, a significance level of $\alpha = 0.05$, and statistical power of 0.95. The final sample size exceeded the minimum requirement determined using G*Power. Although the required sample size was 153 respondents, a total of 184 respondents participated in the study, providing an adequate sample for the planned statistical analysis.

The sampling elements refer to the individual respondents from whom the research data were collected. In this study, the sampling elements consisted of students enrolled in higher education institutions in Pahang. The respondents included students from different levels of study from foundation students to postgraduate students. The distribution of respondents across educational levels was uneven. As a result, the sample may not fully represent the educational-level distribution of the target population. The unit of analysis was the individual higher education student who had knowledge of or experience using ChatGPT.

A non-probability convenience sampling technique was employed because a complete sampling frame of higher education students in Pahang was unavailable. Respondents were recruited through university communication platforms, student networks, social media, and printed questionnaires.

Research Instrument

A structured questionnaire was used to collect data on the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). The questionnaire was designed to measure the factors influencing higher education students' behavioral intention to use ChatGPT. The questionnaire was developed based on previous research and converted into a Google Form, which was distributed via WhatsApp, a widely used social platform. The questionnaire consisted of two main sections:

- **Section A:** Demographic profile, including age, gender, education level, type of higher education institution, previous experience using ChatGPT and frequency of ChatGPT use..
- **Section B:** Measuring the main constructs adapted from the UTAUT2 framework using a 5-point Likert scale.

Data Analysis

Table 1. Level of Behavioural Intention

	N	Mean	Std. Deviation
Behavioural Intention	184	3.523	.901
Valid N (listwise)	184		

Table 2. Distribution of the Means Scores on 5-Point Likert Scale

Mean Value	Estimation Degree
1.00 - 1.80	Very Low
1.81 - 2.60	Low

2.61 - 3.40	Average
3.41 - 4.20	High
4.21 - 5.00	Very High

Table 3. Level of Behavioural Intention (Education level)

Education level	N	Mean	Std. Deviation
Foundation	160	3.393	.843
Bachelor Degree	15	4.400	.808
Master's Degree / PhD	9	4.370	.857
Total	184	3.523	.901

An evaluative study concerning the overall behavioral intention to utilize ChatGPT among university students in Pahang was executed via a survey encompassing 184 participants. The aggregate mean score was recorded at 3.523 (SD=0.901), as demonstrated in Table 1. These findings imply that students, on average, exhibit a moderate to high propensity for employing ChatGPT in their academic endeavors or quotidian activities. In more straightforward terms, a prototypical university student appears to be generally receptive and inclined to adopt artificial intelligence tools such as ChatGPT. The outcomes of this investigation furnish empirical evidence that a substantial proportion of university students are amenable to the utilization of ChatGPT, with the mean score skewing above the midpoint of the evaluative scale. This observation underscores a favorable behavioral intention, although it may not yet signify profound familiarity or habitual engagement among the entire student body. When analyzed according to educational attainment, the data delineate significant variations. Students at the foundational level (N = 160) reported a mean behavioral intention of 3.393, which, while still indicative of a positive inclination, represents the lowest score among all educational cohorts. This phenomenon may be indicative of either limited exposure to or a perceived irrelevance of ChatGPT within their current academic context. Conversely, individuals holding Bachelor's degrees (Mean = 4.400) and those with Master's/PhD qualifications (Mean = 4.370) exhibit a markedly higher behavioral intention to utilize ChatGPT. Although their respective sample sizes were modest 15 and 9 participants, these scores imply that students at more advanced academic stages likely perceive greater utility in artificial intelligence tools, potentially owing to more intricate academic requirements or enhanced digital literacy. It is significant to note that the elevated levels of intention among postgraduate students may signify the necessity of incorporating artificial intelligence tools into pedagogical frameworks across all academic strata. The relatively lower inclination observed among foundational students suggests an imperative for targeted initiatives in digital awareness and training, particularly for novice university entrants. These findings substantiate the increasing receptiveness to artificial intelligence technologies such as ChatGPT among university students in Pahang. Nonetheless, they also emphasize the critical need for educational interventions aimed at bridging disparities in behavioral intention across various academic levels. Promoting consistent, ethical, and informed utilization of such tools will be vital in ensuring that all students are adequately equipped for AI-integrated learning environments.

The results of this study point to a generally positive attitude among university students in Pahang toward using ChatGPT, with an overall mean score of 3.523. This suggests that many students are open

to integrating AI tools into their academic routines, especially those at more advanced levels of study. Notably, students pursuing Bachelor's and postgraduate degrees showed the highest levels of intention to use ChatGPT (Mean = 4.400 and 4.370 respectively), which may reflect their greater familiarity with research tasks, writing demands, and digital tools. These findings echo broader trends in higher education, where AI is increasingly seen as a practical aid for learning and productivity. This is supported by research done by Siddiqui et al. (2025) and Al-abdullatif and Alsubaie (2024) which demonstrated that students with higher academic standing and AI literacy showed higher behavioral intention.

In contrast, foundation-level students reported a lower mean score (3.393), indicating a more cautious or uncertain stance toward ChatGPT. It emphasized the need for foundational AI literacy programs to bridge gaps among early-stage students (Al-kfairy, 2024). This could be due to limited exposure, unfamiliarity with AI, or a perception that such tools are not yet relevant to their coursework. It highlights the need for early-stage interventions such as introductory workshops, guided practice, and curriculum support to help these students build confidence and competence in using generative AI responsibly.

Among the seven predictors, performance expectancy emerged as the strongest determinant of behavioural intention, followed by habit and personal innovativeness. In contrast, effort expectancy and facilitating conditions did not significantly predict behavioural intention. This pattern suggests that students may be influenced more by the perceived academic usefulness and routinised use of ChatGPT than by ease of use or institutional support.

Beyond usage intention, the study also touches on an important ethical layer: cybersecurity awareness. While students generally show moderate to high awareness, the literature reveals persistent gaps in safe digital practices such as password hygiene, phishing detection, and browser security. These vulnerabilities are especially concerning in the context of AI tools like ChatGPT, which rely on responsible prompting and data handling. Without proper safeguards, students may inadvertently expose themselves or their institutions to risks. This is where the integration of business ethics becomes crucial. Cybersecurity isn't just a technical issue. It is a matter of personal and professional responsibility. Students need to understand that actions like sharing passwords, ignoring phishing warnings, or misusing AI-generated content aren't just risky, they are ethically problematic. Embedding ethical reasoning into digital education, through case studies, simulations, and values-based discussions, can help students develop a stronger sense of accountability in online spaces (Chiu, 2025).

In short, while the enthusiasm for ChatGPT is encouraging, it must be matched by thoughtful support systems, both technical and ethical. Universities have a responsibility to ensure that all students, regardless of academic level, are equipped not just to use AI tools, but to do so wisely, safely, and with integrity.

CONCLUSIONS

Notwithstanding the valuable insights provided by this investigation, several limitations warrant acknowledgment. Primarily, the research adopted a non-probability convenience sampling methodology, which, although pragmatic in light of the absence of a comprehensive sampling framework for higher education scholars in Pahang, intrinsically constrains the generalizability of the outcomes. The sample size, while deemed sufficient (N = 184), may not adequately encapsulate the

diversity of viewpoints across various universities, academic disciplines, or socioeconomic strata within the region. Furthermore, the utilization of a self-reported questionnaire gives rise to the potential for response bias, as respondents may have either inflated or diminished their behavioral intentions due to social desirability pressures or misinterpretation of specific items. Although measures were implemented to mitigate common method bias through assurances of anonymity, the dependence on a singular data collection technique persists as a methodological limitation. Moreover, the disparity in group sizes across different educational tiers most notably, the limited number of participants from the Bachelor's (N = 15) and Master's/PhD (N = 9) cohorts could compromise the robustness of the comparative analysis. Consequently, statistical interpretations involving these groups necessitate a cautious approach.

Future investigations may pursue multiple research trajectories, First, utilizing a probability sampling methodology, such as stratified or cluster sampling, would significantly improve the representativeness of the sample and facilitate broader generalizations across the Malaysian context or the Southeast Asian region. Second, broadening the geographical parameters to encompass a comparative examination of urban versus rural institutions, or public compared to private universities, could yield a more sophisticated understanding of the contextual factors influencing the acceptance of ChatGPT. Third, subsequent studies could gain from implementing a longitudinal research design aimed at monitoring the evolution of students' behavioral intentions and actual engagement with ChatGPT over time, particularly as generative AI technologies increasingly integrate into educational frameworks. Fourth, incorporating qualitative methodologies such as interviews or focus group discussions could yield profound insights into the motivations, challenges, and ethical dilemmas perceived by students in relation to the utilization of ChatGPT. Lastly, additional investigations should also assess the ramifications of digital literacy training and AI-focused curricula on students' perceptions and behavioral intentions, especially at the foundational educational stage.

This study makes a substantial contribution to the expanding corpus of scholarly literature regarding the adoption of technology in higher education by analyzing the particular instance of ChatGPT, a preeminent generative AI instrument. The results emphasize a predominantly positive behavioral inclination among university students in Pahang towards the adoption of ChatGPT, especially among those engaged in advanced academic pursuits. This underscores the prospective capabilities of artificial intelligence technologies to augment academic involvement and productivity. Significantly, the research also highlights the disparities in artificial intelligence readiness across various educational strata, indicating the necessity for focused pedagogical approaches and institutional frameworks that promote equitable access and utilization of AI instruments. By elucidating critical areas of concern and opportunity, the study provides a foundational basis for institutional leaders, educators, and policymakers to formulate interventions that facilitate the informed, ethical, and extensive integration of artificial intelligence within higher education environments.

Ultimately, this research not only enlightens academic stakeholders but also contributes to the ongoing discourse surrounding AI literacy, digital equity, and the preparation of future-ready education, particularly within developing regional contexts such as Pahang.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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AUTHOR CONTRIBUTIONS STATEMENT

N.S.Ahmad (Methodology; Data curation; Formal analysis; Visualisation; Writing-original draft.

M.N.Azman (Methodology; Data curation; Formal analysis; Visualisation; Writing-original draft.

A.M.I Bin Mamat (Conceptualisation, Validation; Formal analysis; Writing-review & editing; Supervision).

AVAILABILITY OF DATA AND MATERIALS

The data supporting this study's findings are available on request from the corresponding author.

ETHICS STATEMENT

Not applicable.

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