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THE INFLUENCE OF ARTIFICIAL INTELLIGENCE LEARNING TOOLS ON PERCEIVED ACADEMIC PERFORMANCE AMONG ACCOUNTING STUDENTS IN MALAYSIA

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Abstract:

The increasing adoption of Artificial Intelligence (AI) learning tools has transformed higher education by providing students with innovative support for academic learning. While numerous studies have examined AI integration in education, limited empirical evidence exists regarding its relationship with academic performance among accounting students in Malaysian universities. This study aimed to identify the AI learning tools commonly used by accounting students, examine their perceptions of the usefulness of AI learning tools, and explore the relationship between AI learning tool usage and perceived academic performance. A quantitative cross-sectional survey design was employed using a structured questionnaire distributed to accounting students at a Malaysian university. A total of 30 valid responses were analysed using descriptive statistics, Cronbach's alpha, and Spearman's rank-order correlation. The findings revealed that respondents reported a high level of AI learning tool usage and generally perceived AI tools as beneficial in improving learning efficiency, assignment quality, and academic confidence. Reliability analysis indicated acceptable internal consistency for the measurement scales. Correlation analysis demonstrated a moderate positive relationship between AI learning tool usage and perceived academic performance ($r_s = 0.535$, $p = 0.002$), as well as between perceived usefulness of AI and perceived academic performance ($r_s = 0.430$, $p = 0.018$). However, no significant relationship was found between AI learning tool usage and perceived

usefulness. The findings suggest that AI learning tools are positively associated with students' perceived academic performance among accounting students. Given the exploratory nature of the study and its small sample size, future research involving larger and more diverse samples is recommended to validate and extend these findings.

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Accounting Education, Academic Performance, Artificial Intelligence, Technology Acceptance Model.



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Introduction

Background of Study

In the digital age, Artificial Intelligence (AI) has emerged as one of the most significant technological advancements impacting higher education. The development of generative AI technologies has altered how university students view and experience information, task assignments, and independent learning since the release of ChatGPT in late 2022. These AI tools, like ChatGPT, Grammarly, QuillBot, and Microsoft Copilot, provide instant feedback, language support, idea generation, and customized learning assistance, which can make it easier for students to finish their academic work faster (Dong et al., 2024; McDonald et al., 2024).

AI's integration into higher education has revolutionized the learning process from classroom-centric to technology-facilitated and flexible settings. AI tools are being more frequently employed by students to create summaries of learning materials, clarify difficult concepts, create practice questions, enhance writing skills, and aid in self-directed learning. These skills can support the effectiveness of learning and promote student engagement in learning. (Perhan et al., 2026) Meanwhile, universities around the globe are re-thinking how they will teach and assess students to ensure that AI is used responsibly and that academic integrity is maintained. (McDonald et al., 2024)

The adoption of AI in higher education has gained momentum in Malaysia along with the national initiatives of digital transformation and Education 4.0. To equip students for technology-driven workplaces, universities are increasingly encouraging students to build their digital skills and AI literacy. To prepare students for workplaces that are increasingly technologised, universities are encouraging students to develop digital competencies and AI

literacy. The proliferation of free and subscription-based AI tools has brought these innovations to the forefront for students in various subjects (Awang & Razak, 2026). Recent research in Malaysia suggests that AI tools such as ChatGPT are seen as beneficial for creating academic content, information retrieval, and assisting in learning at the university level (Chieh & Aun, 2025). But ethical issues, plagiarism, and excessive reliance on AI-generated content have emerged as concerns (Abdul Rahman et al., Kamarudin et al., 2025).

One field in particular where the use of AI could be significant for education is accounting. In the field of academics, accounting education is an important field to consider when discussing the use of AI. It is important that students gain analytical reasoning, financial reporting, moral decision making and effective writing skills in the context of accounting. Such skills involve more than just using numbers; they involve analyzing financial data and tackling complex business challenges. Therefore, AI learning tools can provide valuable assistance to students in grasping accounting concepts, enhancing their report writing abilities, structuring information, and getting prompt feedback on coursework. Yet, the rise in the application of AI also brings with it concerns with students' technology usage, the cultivation of independent thinking, and the ethical boundaries of AI aided learning (Tharapos, 2025; Sehat et al., 2025).

Problem Statement

Existing studies typically show positive educational outcomes from using AI learning tools. Research indicates that AI can enhance students' learning productivity, writing skills, confidence, and engagement by offering customized learning experiences and instant academic assistance (Dong et al., 2024). Likewise, research on accounting education shows that students perceive AI as helpful in enhancing data analysis skills, problem-solving abilities, and career readiness (Gilreath et al., 2025). The findings show great potential for AI to support existing teaching strategies and enhance learning efficiency.

While these promising results exist, the impact of the use of AI learning tools on academic achievement is still unclear. While numerous students claim that AI has enhanced their learning journey, there is limited empirical evidence to back up the actual academic performance gains. A lot of the literature available uses self-reported, subjective measures instead of objective measures such as grade point average (GPA) or examination results. What's more, there are those who believe that relying on AI can stunt critical thinking, independent problem-solving, reflective learning, and even academic dishonesty, with the potential for plagiarism (Selvanathan & Narayanan, 2024; Lund, 2025).

Another problem with the current literature is that it is discipline specific. Past research has focused on how students in science, technology, engineering, and mathematics (STEM) fields are using AI or how technology is accepted like the Technology Acceptance Model (TAM). In comparison, the literature on the use of AI in accounting education is relatively limited, as the learning needs of accounting students vary significantly from STEM students. Moreover, the existing research in Malaysia focused on the intention to use ChatGPT or the overall perception of AI with students instead of exploring the correlation between using the AI learning tools and the students' accounting education performance (Abdul Rahman et al., 2025).

The Research Gap

The importance of this research gap is especially notable as accounting education focuses on professional competence, ethical judgement, analytical thinking, and proficient communication (Ismail & Rasheed, 2025). The information gathered from this survey will be of benefit to educators and higher education institutions that wish to better understand how accounting students are using AI learning tools, their perceived value and their perceived academic performance as a result of using AI. This proof can help shape teaching methods, guidelines for students using AI, and course curricula that foster responsible use of AI and maintain academic integrity. (Raime et al., 2026)

Objectives and Contributions

This study thus aims to explore the association between the use of AI learning tools and perceived academic performance of accounting students in a Malaysian university. In particular, the study aims to identify the AI learning tools that accounting students use, gain insights into the usefulness of accounting students' use of AI learning tools in supporting learning, and examine the relationship between using AI learning tools and accounting students' perception of their academic performance. This study is considered a preliminary exploratory study that brings some initial empirical evidence to the growing body of literature on the use of AI in accounting education in Malaysia (Alwi, 2025) due to the relatively small sample sizes. The results will be useful for teachers, university leaders, and policy makers because they provide information about students' use of AI and about ways to effectively and ethically incorporate AI into accounting education.

Literature Review

The next subsections systematically assess several key aspects of AI: pedagogical, theoretical, and geographical.

Artificial Intelligence in Higher Education

Artificial Intelligence (AI) has become one of the most transformative technologies in higher education, fundamentally changing the way teaching and learning are conducted. Recent advances in generative AI, particularly the emergence of Large Language Models (LLMs) such as ChatGPT, Microsoft Copilot, Claude, and Gemini, have enabled students to interact with intelligent systems that provide instant explanations, generate ideas, improve writing, summarise learning materials, and personalise learning experiences (Kasneci et al., 2023; Lo, 2023). Unlike conventional educational technologies that primarily deliver static learning content, generative AI actively supports students through interactive dialogue, immediate feedback, and adaptive responses, thereby enhancing independent and self-regulated learning.

Since the launch of ChatGPT in November 2022, AI has been rapidly gaining traction in higher education. The world's universities have since seen unprecedented expansion in the educational applications of AI, leading researchers to examine the implications of its impact on the education, learning, assessment, and academic honesty of students (Dwivedi et al., 2023). Students increasingly utilize AI tools to clarify complex topics, summarize lecture content (Alwi & Khan, 2025), create test questions, enhance academic writing, assist in programming, and analyze data. The applications are especially appealing because they offer students an

opportunity to learn at their own speed, geographically and even temporally (Crompton & Burke, 2024).

Recent systematic reviews consistently report that AI technologies contribute positively to student engagement, learning efficiency, and personalised learning experiences. Batista et al. (2024) found that AI-supported learning enhances students' motivation, self-directed learning, and academic productivity by providing immediate feedback and personalised instructional support. Similarly, Crompton and Burke (2024) concluded that generative AI has significant potential to transform higher education by improving access to knowledge, facilitating collaborative learning, and supporting differentiated instruction. These findings suggest that AI can complement traditional teaching approaches rather than replacing educators.

Regardless of these educational advantages, researchers have raised concerns relating to the potential negative consequences of excessive AI use. Is AI a boon or a threat to students' critical thinking skills is one of the most controversial topics. Relying too heavily on AI-generated answers could stifle students' ability to reflect, think independently, and do deeper problem-solving, rather than encouraging such critical thinking skills (Kasneci et al., 2023). Furthermore, the information generated by generative AI systems is sometimes faulty or invented, and could mislead students when presented without critical evaluation (Lo, 2023). Another significant issue after the lightning speed of the adoption of generative AI is academic integrity. Within seconds, AI tools can generate essays, reports, computer code, and answers to assessment tasks, posing difficulties for universities in establishing that what they are evaluating is the student's own learning, not someone else's. In light of this, higher education institutions have started to make changes to their assessment methods and formulate institutional policies that encourage the positive application of AI and ensure the quality of the academic curriculum (Dwivedi et al., 2023). So, while some universities ban AI use, others encourage students to use it responsibly, with a focus on transparency, critical thinking, and proper citation of AI-generated content (Raime et al., 2026).

In sum, current literature indicates that AI has become an integral part of higher education. AI provides valuable potential benefits for learning productivity and engagement, but the learning value of AI technologies is heavily reliant on the ways in which learners utilize them effectively and responsibly. The advances in these show the need to explore the use of AI by students in their learning and if there is a correlation between their use of AI and their academic outcomes.

Applications of Artificial Intelligence in Accounting Education

The accounting industry is currently in the midst of a digital transformation, with automation, AI, cloud computing and data analytics leading the way. With the rise of AI in accounting practices and its integration into auditing, taxation, financial reporting, and decision support, HEIs should equip their graduates with the necessary digital skills for the profession (AICPA & CIMA, 2024). Thus, the topic of accounting education has become more and more related to the importance of analytical reasoning, professional judgment, ethical consciousness, successful communication skills, etc., which are developed by students in the process of learning. Therefore, the relevance of accounting education to the application of AI is increasingly becoming relevant, in developing analytical reasoning, professional judgment, ethical sensitivity and communication skills. (Alwi, 2025)

Artificial intelligence (AI) tools like ChatGPT, Grammarly, QuillBot, Microsoft Copilot, and AI tutoring platforms are increasingly popular among accounting students for different types of academic tasks. There have been recent studies showing that AI applications including ChatGPT, Grammarly, QuillBot, Microsoft Copilot, and AI tutoring systems are being widely used by accounting students for a variety of academic tasks. This involves clarifying accounting principles, enhancing reports, ideating assignments, editing assignments, and editing exams (Tharapos et al., 2025). In contrast to traditional search engines, generative AI offers contextually relevant explanations and engaging dialogue, helping students to understand intricate accounting concepts and address real-world challenges. (May et al., 2022)

There are several empirical studies that demonstrate positive perceptions of AI among accounting students. Students feel that AI contributes positively to learning productivity by saving them time in task completion and making it easier to understand and produce quality written work. AI can also provide instant feedback, which helps students to learn independently out of the classroom (Ng et al., 2024). Moreover, students feel that AI can be a good study buddy for them to grasp concepts and aid in exam preparation.

In addition to academic support, AI is now playing a crucial role in equipping accounting graduates for the future job market. In the context of technology-driven environments, the digital skills of accountants, such as AI literacy, data analytics and automation, have been recognised by professional accounting organisations as essential skills (IFAC, 2024). It is therefore recommended that universities incorporate AI as not just a teaching method but a skill students will need in their professional lives in their accounting programs. (Krishnanraw & Ismail, 2025)

Despite these advantages, researchers warn against relying too much on AI in accounting education. It is important that learners can think critically, make ethical decisions and be professionally sceptical, which is something that can not be taught by AI-generated answers alone. (Aiyubkhan & Narendrabhai, 2026). Students who use AI tools too much might exhibit limited analytical skills and less financial information assessment ability (Tharapos et al., 2025). Moreover, errors in the accounting information produced by AI could result in conceptual misunderstanding if students don't cross-check the AI's output with authoritative accounting standards and textbooks. (Sugahara & Kano, 2026)

Assessment is another big hurdle. Traditional take-home assignments have been subject to more and more AI-driven completion, making it challenging for teachers to gauge students' actual understanding of accounting concepts. Researchers suggest the redesign of assessments, by incorporating authentic learning activities such as case studies, oral presentations, simulations, reflective journals, and hands-on problem-solving tasks that emphasize higher order cognitive skills (Ng et al., 2024).

International literature about the role of AI in accounting education has grown significantly, but more research evidence is limited within the context of Malaysia. In most published studies, it has been the business students or general university students who have been studied, not accounting students. This discrepancy highlights the importance of discipline-specific inquiries exploring the use of AI learning tools by accounting students, and their perceptions of their performance in relation to such use.

Artificial Intelligence Learning Tools in Higher Education in Malaysia

Malaysia has been actively advocating the concept of digital transformation in the field of higher education, with the launch of national programs like the Malaysia Education Blueprint (Higher Education) and Education 4.0. (Aun et al., 2023) These schemes aim to encourage the institutions of higher education to use digital technologies in education and learning, and to provide graduates with skills necessary for the Fourth Industrial Revolution. In the wake of the availability of ChatGPT and other generative AI tools, the use of AI learning tools by Malaysian university students has also become a growing trend (Pasi & Dhamak, 2026).

Recent Malaysian studies consistently report positive student perceptions regarding AI-assisted learning. Abdul Aziz et al. (2025) found that most Malaysian university students considered ChatGPT useful for understanding complex concepts, generating ideas, and supporting assignment completion. Similarly, Abdul Rahman et al. (2025) reported that perceived usefulness and perceived ease of use significantly influenced Malaysian students' intention to adopt ChatGPT for academic purposes. These findings are consistent with international studies suggesting that students adopt AI when they believe it improves learning efficiency and academic productivity (Marmolejo-Ramos et al., 2026).

AI applications were also found to be positively linked with students' academic performance, mediated in part by time management, according to the research of Kanapathipillai et al. (2025). Students who incorporated AI into their study processes were more likely to be able to plan learning activities and manage their academic workloads (Alwi & Khan, 2025). However, the authors stressed the importance of complementing rather than replacing autonomous learning approaches with AI. (Yusoff et al., 2025)

Previous research in Malaysia has identified issues of AI literacy, ethics, and information credibility. While students find ChatGPT easy and accessible to use, many are also unsure about the reliability of AI-generated responses and recognize the importance of cross-checking information with trustworthy academic sources, as reported by Younes et al. (2024). Similarly, Haziana et al. (2025) found that students needed more assistance in critically assessing AI-generated material and the responsible use of AI in academic tasks.

Although there has been a rise in the number of Malaysian studies, there are still some gaps. The majority of investigations focus on either students' acceptance, awareness or intention to use AI and do not consider instructional outcomes. In addition, many studies pool respondents across disciplines, thus making it hard to detect differences between disciplines. Little empirical research has investigated specifically the accounting students, who experience different educational needs from other business subjects due to the profession's focus on analytical thinking, professional behaviors, and ethics (Alwi, 2025). To fill this gap is the main motivator of the present study.

Theoretical Perspective: Technology Acceptance Model

Davis (1989) suggested a theoretical framework known as the Technology Acceptance Model (TAM) that is suitable for understanding students' use of AI learning tools. TAM postulates that two beliefs have a significant impact on users' acceptance of a technology: perceived usefulness and perceived ease of use. Technology that is viewed as useful and easy to use is likely to be adopted and become part of everyday activities. (Alwi & Khan, 2024)

In the field of higher education, TAM has been extensively used to understand students' acceptance of e-learning systems, learning management systems, mobile learning applications, and, more recently, generative AI technologies (Abdul Rahman et al., 2025). For both constructs, perceived usefulness is found to be the strongest factor that influences students' intention to use AI, and students are more likely to accept technologies that increase learning effectiveness, decrease effort, and increase academic productivity. (Pham et al., 2025)

The present study does not examine all of the TAM model, but the PU construct in the questionnaire is very similar to TAM. In particular, students' willingness to report positive learning experiences and perception of academic performance is expected to increase when they find the use of AI learning tools helpful. Specifically, the more students find the use of AI learning tools helpful, the more they are expected to report positive learning experiences and a higher perceived academic performance. Thus, TAM is an appropriate theoretical framework for understanding the relationships explored in this research, hence the inclusion of perceived usefulness as one of the important constructs.

AI Learning Tools and Academic Performance

One of the most widely studied effects of using AI in education at the collegiate level is on student achievement. With the integration of generative AI into the daily learning process, researchers have been trying to find out if AI is leading to better learning outcomes or if it is just increasing the students' perception of learning. While the past studies mostly show positive educational results, the evidence is not conclusive in terms of the extent to which AI usage translates into measurable academic results.

AI learning tools have been shown to have a positive impact on students' academic achievement through several studies, which include the ability to enhance learning efficiency, alleviate cognitive load, and deliver real-time feedback. The applications of generative AI, like ChatGPT, Grammarly, and QuillBot, allow students to explain concepts, organise ideas, enhance the quality of written content, and get individual explanations, thus supporting self-regulated learning (Batista et al., 2024; Crompton & Burke, 2024). These features are especially useful for university students who need to be constantly assisted outside class time. (Chieh & Aun, 2025)

Empirical studies in recent years have shown positive relationships between the use of AI and students' sense of success in their studies. The study by Chen et al. (2025) is a meta-analysis that suggested generative AI has a moderate to large positive impact on students' academic achievement, learning motivation, and learning satisfaction in various educational contexts. Likewise, Batista et al. (2024) found that AI learning enhanced students' engagement, knowledge, and self-assurance in academic tasks. The results suggest that AI can be used as a learning support system and not simply as a tool for information retrieval. (Perhan et al., 2026)

AI has gained more significance in accounting education due to the need for students to possess analytical reasoning, communication and problem-solving skills. Tharapos et al. (2025) noted that accounting students found ChatGPT to be helpful when learning about accounting concepts and comprehending the process of creating ideas or reports. Students also shared how AI helped them understand accounting principles, clarify technical jargon, and streamline their coursework. Based on the results of these findings, it is expected that the use of AI will be able

to help students learn by themselves with the ability to strengthen learning in the classroom. (Alwi, 2025)

Similarly, evidence in Malaysia shows that using AI has positive educational impacts. Kanapathipillai et al. (2025) reported that AI application had a positive effect on academic performance in university students from Malaysia, mediated by time management. Pupils involved with using AI in learning processes were found to be more organised in their learning activity and were more productive in learning. Similarly, Abdul Aziz et al. (2025) found that the Malaysian students found the ChatGPT beneficial in comprehending challenging concepts, completing assignments, and improving learning efficiency.

In the meantime, the mixed results and the ongoing dispute over the effectiveness of AI in improving academic performance or only students' sense of improved learning leaves researchers speculating about the true impact of the technology. Many of the studies that have been conducted in the past are based on self-reported surveys instead of objective measures like grade point average (GPA), test scores, or even a student's academic history over the years (Lo, 2023). While students might think that AI is improving their academic outcomes, there's not much evidence to back that up. (Krishnanraw & Ismail, 2025)

Another constraint is related to the research design. The majority of published studies use a cross-sectional survey design, which is appropriate for the examination of relationships, but cannot be used to establish causal effects. Only a few studies have followed students over time to see how AI affects their academic performance or have conducted experiments on students to compare their performance before and after the use of AI. Therefore, although positive relationships between the use of AI and academic achievement have been consistently found, it is unclear whether the positive impact of AI directly stems from AI use or from other factors such as student motivation, prior academic achievement, and digital literacy (Dwivedi et al., 2023).

Overall, what evidence does exist indicate that AI learning tools can enhance students' learning experience and perceived academic success. Despite this, more empirical studies based on objective academic measures and discipline-specific data sets are needed to illuminate the learning effects of AI.

Ethical Issues and Challenges of AI in Higher Education

While AI learning tools have the potential to enhance education, their widespread adoption has raised significant ethical and pedagogical concerns. Academic integrity is an issue that comes up a lot. The applications of Generative AI can generate essays, reports, programming codes, and answers to assessment tasks in seconds. Thus, universities are facing more difficulties in differentiating AI-generated content (AGC) from students' original work (Bittle et al., 2025).

Plagiarism is one of the most common issues raised about AI in education. Contrary to regular plagiarism, AI-generated assignments do not copy and paste from a source but are created using the technology, making them much harder to detect with plagiarism detection software. This has encouraged universities to rethink their strategies to assess and create policy guidelines for acceptable AI use (Dwivedi et al., 2023).

Another concern relates to students' overdependence on AI. Relying too heavily on AI can limit students' critical thinking abilities, their capacity for analysis and problem-solving, and their ability to seek out answers. Kasneci et al. (2023) proposed that AI should be used as a learning assistant and not as a replacement for thinking. Also, Lo (2023) noted that teachers need to teach students to critically analyze AI-provided information instead of blindly accepting it.

Validity and reliability are still important issues. LLMs sometimes return wrong information, fake citations, or wrong explanations. These "hallucinations" are especially worrisome in certain professional areas like accounting, where precision, accounting standards, and ethical consideration are critical. Students may also misconceive or hand in incorrect academic assignments if they do not verify results obtained from AI (Tharapos et al., 2025).

Ethical issues with adopting AI have also been found in Malaysia. While the students found ChatGPT to be helpful, there were concerns about the reliability of the information produced by the AI, and some students noted a need for them to verify the information with credible academic sources (Abdul Aziz et al., 2025). Haziana et al. (2025) also suggested that universities should offer structured AI literacy programs to ensure students are aware of the capabilities and limitations of AI, which is also known as "generative AI."

The literature does not call for the abolition of AI but rather a responsible integration of AI in school settings, in line with institutional policies, AI literacy programmes, the revision of assessment, and guidance for educators. (Raime et al., 2026) These methods acknowledge that AI is a nuisance in the context of higher education, but also hold that students should assess and use AI-produced information correctly.

Research Gap

While the literature shows increasing interest in AI-assisted learning, there are some gaps that need to be addressed. First, current research mainly focuses on the adoption of AI in general University populations or STEM-related student groups. Although accounting is a profession that is increasingly reliant on AI technologies, and the unique skills needed for accounting education, there are relatively few studies that specifically focus on accounting students (Tharapos et al., 2025). Second, the majority of research on the topic of Malaysian students and AI has been focused on their awareness, technology acceptance, behavioural intention or overall perceptions of AI. So far, there has been a lack of empirical research that investigates the relationship of using AI learning tools on perceived academic performance of accounting students in Malaysia (Abdul Rahman et al., 2025; Abdul Aziz et al., 2025). Thirdly, much of the evidence currently available is based on self-reported cross-sectional data. There are still relatively few objective academic success indicators, longitudinal research and experimental research. For this reason, the current study findings mainly illustrate correlation and not causality between the use of AI and academic achievement (Lo, 2023). Finally, past literature has typically examined AI use without also accounting for students' perceived usefulness of AI. According to the Technology Acceptance Model, if technology is perceived as useful, then it should be accepted and learning outcomes achieved. Few studies, however, have considered how the use of AI learning tools, their perceived usefulness, and perceived academic performance relate in accounting education.

To fill these gaps, the present study examines the use of AI-based learning tools by accounting students in a Malaysian university. In particular, the study found that students commonly use

the following types of AI learning tools: quizzes, chatbots, research assistants, and writing and speaking assistants. The study revealed that the students commonly use the following AI learning tools: quizzes, chatbots, research assistants and writing and speaking assistants. This study is specific to accounting students and adds to the growing body of literature on AI in learning in Higher Education in Malaysia and yields initial empirical data that can be used for further large-scale studies.

Methodology

Research Design

A quantitative cross-sectional survey was utilized in this study to investigate the relationship between the use of an Artificial Intelligence (AI) learning tool and perceived academic performance of accounting students in a Malaysian university. A quantitative approach was deemed to be suitable as it allows for numerical data to be collected and analysed statistically to find patterns, relationships and trends between the study variables (Creswell & Creswell, 2018).

This study used a cross-sectional design, and data were collected at one point in time. This design can be used in exploratory research, which aims to explore students' perceptions and experiences with AI learning tools without controlling the research environment. The relatively small sample size of this study places it as a preliminary exploratory study to support future large-scale studies.

Research Population and Sample

The subjects of the study were undergraduate accounting students studying at higher education institutions in Malaysia. Students from the accounting field were chosen as this subject is increasingly vital to accounting education and professional practice, including financial reporting, auditing, taxation, business analytics, and professional communication.

A convenience sampling technique was used because of its accessibility and time. The questionnaire was sent by e-mail to be accounting students who volunteered to be part of the study. 30 valid responses were received and used in final analysis. The sample size is relatively small but is deemed suitable for a preliminary exploratory study that is not designed to yield findings generalizable to the broader student population.

Research Instrument

A structured self-administered questionnaire was employed for collecting data, which was designed from the previous studies on AI adoption, educational technology and academic performance. The questionnaire had five parts:

Section A: Demographic Information

- Age
- Gender
- University
- Programme of Study

- Year of Study

Section B: AI Learning Tool Usage

This section consisted of four items measuring students' usage of AI learning tools for academic purposes, including ChatGPT, Grammarly, QuillBot, and AI-based quiz applications.

Section C: Perceived Usefulness of AI

Five items measured students' perceptions of the usefulness of AI learning tools in improving learning effectiveness, assignment quality, study efficiency, academic confidence, and concerns regarding dependency.

Section D: Perceived Academic Performance

Four items assessed students' perceptions of the influence of AI learning tools on their academic performance, including writing improvement, critical thinking, problem-solving, and overall learning support.

Items in Sections B, C, D, and E were measured using a five-point Likert scale, ranging from:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

The five-point Likert scale was selected because it is widely used in educational and behavioural research and provides sufficient sensitivity for measuring respondents' attitudes and perceptions.

Data Collection Procedure

The questionnaire was designed in Google Forms and sent electronically to accounting students via online communicative tools. The study was non-obligatory, and respondents were briefed about the study before they filled the questionnaire.

Respondents were assured that:

- participation was voluntary;
- respondents would not be identified; and
- no personally identifiable information would be collected; and

The information would only be used for academic research. Downloaded completed questionnaires were analysed using the Statistical Package for the Social Sciences (SPSS) Version 29.

Ethical Considerations

The researchers followed ethical guidelines throughout the study. All participation in this study was voluntary, and respondents gave their informed consent prior to filling out the questionnaire. All respondents' anonymity and confidentiality were ensured and collected data was only used for academic purposes. No identifying information was gathered, and participants were told that they have the freedom to leave the study at any time without repercussions.

Results

Respondent Profile

The 30 total responses that were valid were analyzed. Demographic characteristics of the respondents are shown in table 1. The 20-year-old age group had the largest number of respondents at 50.0%, and the 43.3% were aged 21. Only one respondent each (3.3%) was aged 23 and 25 years. The majority of the students, 80.0%, were female students, and 20.0% of the respondents were male students. The results of this study show that the majority of the sample was female accounting students aged 20-21 years.

AI Learning Tool Usage

The descriptive analysis showed that the overall level of the use of the AI learning tools was high among the respondents. A majority of respondents (56.7% strongly agreed and 30.0% agreed) had experience using AI learning tools for their studies. Likewise, 80.0% of the respondents agreed or strongly agreed that they frequently utilized AI tools when studying and working on projects. When it comes to the introduction of AI tools by the lecturer, 56.7% agreed or strongly agreed, 26.7% were neutral, and 16.7% disagreed. Moreover, 83.3% of the respondents agreed or strongly agreed that they are aware of how to use AI tools effectively in their studies. In general, the results indicate that there is a high level of adoption of AI learning tools among the accounting students surveyed.

Perceived Usefulness of AI

Overall, it was found that respondents had positive attitudes towards the usefulness of AI learning tools. Nearly all respondents (96.6%) agreed or strongly agreed that AI tools aided in better understanding of course content. Similarly, 86.7% said that AI enhanced the quality of their assignments and 90.0% felt that AI helped save time when studying or preparing assignments on their coursework. For academic confidence, 70.0% of respondents agreed or strongly agreed that AI boosted their academic confidence to complete tasks. Respondents also had concerns about relying on artificial intelligence, as 83.4% agreed or strongly agreed that they feared becoming too dependent on artificial intelligence (AI) learning tools.

Perceived Academic Performance

The results revealed a positive overall attitude of the respondents towards the use of AI learning tools. About 60.0% indicated that they had seen positive changes in their academic grades since using AI learning tools. More respondents agreed or strongly agreed that AI tools supported them in detecting mistakes and enhancing their academic writing (86.7%). In addition, 66.6%

of respondents felt that AI improved their critical thinking and problem-solving skills, and 76.7% felt that AI aided in their learning process but did not replace it. Overall, these findings indicate positive attitudes toward the use of AI learning tools and their impact on academic achievement.

Reliability Analysis

Cronbach's alpha was used to assess the internal consistency of the measurement scales. The Cronbach's alpha coefficient for AI Learning Tool Usage was 0.606, and that for Perceived Usefulness of AI was 0.638, reflecting reliabilities of the constructs. Table 1 presents the Cronbach's alpha coefficient for the constructs that were used, illustrating reliabilities of the constructs: AI Learning Tool Usage = 0.606, and Perceived Usefulness of AI = 0.638. Achievement of the students showed highest reliability with Cronbach's alpha coefficient of 0.755 for Academic Performance construct.

Reliability coefficients suggest good internal consistency for subsequent statistical analyses as this is an exploratory study.

Table 1: Reliability Analysis

Construct	Number of Items	Cronbach's Alpha
AI Learning Tool Usage	4	0.606
Perceived Usefulness of AI	5	0.638
Perceived Academic Performance	4	0.755

Correlation Analysis

Spearman's rank order correlation was performed to explore the correlations between the use of AI learning tools, perceived usefulness of AI, and perceived academic performance. This is further illustrated in Table 3, where it was found that there was a moderate positive and statistically significant relation between the use of AI learning tool and academic performance ($r_s = 0.535$, $p = 0.002$). This result suggests that those who scored higher on the AI learning tool scale also scored higher on academic performance scale, resulting in a positive correlation. This result showed that as learners' usage of AI learning tools increased, their perception of academic performance increased as well, which is a positive relationship. Likewise, perceived academic performance only showed moderate positive and statistically significant association with perceived usefulness of AI ($r_s = 0.430$, $p = 0.018$). In contrast, there was a weak relationship between the frequency of using AI learning tools and the perceived usefulness of AI ($r_s = 0.200$, $p = 0.288$), which indicated that higher usage frequency of AI learning tools did not necessarily correspond to a higher perceived usefulness of AI.

Table 2: Spearman's Correlation Analysis

Variables	r_s	p-value	Interpretation
AI Learning Tool Usage – Perceived Academic Performance	0.535	0.002	Moderate positive, significant
Perceived Usefulness of AI – Perceived Academic Performance	0.430	0.018	Moderate positive, significant
AI Learning Tool Usage – Perceived Usefulness of AI	0.200	0.288	Weak positive, not significant

Summary of Findings

The findings show that the accounting students used AI learning tools regularly and were overall positive about its use as a support to their learning. The reliability analysis showed good internal consistency for the different measurement constructs. The results of correlation analysis also showed that the use of AI learning tools was significantly positively correlated with the perceived academic performance and the perceived value of using AI was significantly positively correlated with the perceived academic performance. On the other hand, there was no significant statistical correlation found between using AI learning tools and rating their usefulness of AI.

Discussion

The present study was conducted to investigate the utilization of Artificial Intelligence (AI) learning tools by the accounting students in a university in Malaysia and to understand the relationship between the use of AI learning tools, perceived usefulness of AI and perceived academic performance among accounting students. The overall results suggest that participants were using AI learning tools regularly and that they had mostly positive attitudes about their use to aid learning. A significant positive correlation was observed between the use of AI learning tools and the perceived academic performance, as well as between perceived usefulness of AI and perceived academic performance. There was no significant correlation, however, between the use of AI learning tools with the perceived usefulness of the AI.

AI Learning Tool Usage among Accounting Students

This study aimed to explore the accounting students' use of AI learning tools to achieve the first objective of this study. The descriptive results showed that AI learning tools were used often for academic purposes, such as studying, academic assignments, and academic improvement. The majority of the respondents also reported using AI tools to help them with their learning activities.

The results align with the latest cross-national research that has indicated that generative artificial intelligence (AI) tools like ChatGPT, Grammarly, and QuillBot are now widely used by university students as learning partners (Kasneci et al., 2023; Batista et al., 2024). Likewise, Abdul Aziz et al. (2025) and Abdul Rahman et al. (2025) noted that with the advent of AI tools, university students have been using these tools more frequently in their academic journey due

to its ability to offer quick information retrieval, instant feedback, and customised academic assistance.

Interestingly, this current investigation revealed that the respondents were less likely to know about AI tools via lectures than other parts of their AI use. This indicates that the students have learned about AI independently, not from formal teaching. In Malaysian higher education, students' awareness of AI is also gained from their peers or social media and self-exploration, rather than formal teaching in the classroom (Younes et al., 2024). The discovery suggests that universities need to offer more systematic instruction on the educational use of AI, to equip students with AI literacy and responsible use practices.

Perceived Usefulness of AI Learning Tools

The second goal involved exploring students' perceptions of the usefulness of AI learning tools. Overall, respondents had positive attitudes about AI, such as using it to better understand course content, increase their work ethic on assignments, save studying time, and boost their confidence when doing academic work.

The results corroborate the Technology Acceptance Model (TAM) (Davis, 1989) which states that technologies that are deemed useful are more likely to be used and become part of the user's life. In the realm of higher education, previous research has consistently found that perceived usefulness is one of the most significant factors affecting the adoption of AI (Abdul Rahman et al., 2025; Lo, 2023). Incorporating AI technologies is more likely to be embraced by students if they perceive the tools increase learning efficiency and academic productivity.

While respondents had positive views of the AI learning tools, they also had concerns about becoming too dependent on them. This is consistent with the recent literature where it has been noted that with the introduction of AI, learning effectiveness has improved but relying too heavily on it can hinder opportunities for independent problem-solving, reflective learning, and critical thinking (Kasneci et al., 2023; Dwivedi et al., 2023). AI should, therefore, be viewed as an aid to learning and not as a substitute for a student's intellectual work.

AI Learning Tool Usage and Perceived Academic Performance

The third goal investigated the connection between the use of AI learning tools and academic achievement. The correlation analysis indicated that between the use of AI learning tools and perceived academic performance there was a moderate positive correlation that was statistically significant. This indicates that the more often respondents used AI, the more likely they were to feel it had a positive impact on their studies.

This result aligns with the existing studies on AI learning tools' benefits, which show a positive impact on students' learning efficiency, writing skills, academic self-confidence, and self-regulated learning (Batista et al., 2024; Chen et al., 2025). Similarly, Kanapathipillai et al. (2025) found positive effects of AI on academic performance, in part due to better time management, in the Malaysian context. The results indicate that AI could play a role in the learning process by assisting students in structuring information, comprehending complex ideas and accomplishing academic tasks more efficiently.

The study also revealed a strong positive correlation between the perceived usefulness of AI and the perceived academic performance. Students with positive attitudes towards AI in learning were more likely to report positive academic outcomes. This result further reinforces the Technology Acceptance Model, which highlights the role of students' beliefs in the usefulness of AI tools affecting the effectiveness of their learning.

However, no statistically significant relationship was observed between the use of an AI learning tool and perceived usefulness of AI. This result is not consistent with the results reported by the previous technology acceptance studies, but it could be attributed to the exploratory nature of the study and the limited size of the sample. Another possibility is that students adopted the use of AI for convenience or peer pressure, rather than for its specific usefulness. Larger sample sizes in future research may yield more information on this association.

Practical Implications

The results of the present study have some practical implications for the higher education institutions. The first step is for universities to acknowledge that AI learning tools have now become a part of students' learning process. The first step is recognition by the university that AI learning tools are now a part of the students' learning process. AI tools are not inherently evil, but rather a tool that can be used to help educate students on the critical thinking required to identify information produced by AI, confirm the sources of information produced by AI and to use AI in an ethical manner when conducting academic research.

Secondly, in the educational context, teachers and their educators need to explore and apply the use of AI in the learning process by integrating it with existing methods rather than replacing them. The use of authentic assessment tasks, case studies, reflective writing, and collaborative problem-solving exercises can motivate students to engage with AI in a responsible and ethical manner, fostering an environment where they can think critically and independently.

Third, we need to set institutional rules on proper use of AI in the teaching and learning and assessment process at universities. These policies would assist students in comprehending ethical standards, minimize academic dishonesty, and foster responsible use of AI in education.

Limitations

The following limitations to this study are noted. The first limitation of the study was that the findings were restricted to a particular sector and particular university with only 30 accounting students. Secondly, the research was conducted in a cross-sectional survey design, which limited the ability to draw conclusions about causal relationships between the use of AI and the perceived academic performance. Third, the evaluation of academic performance was based on students' self-reported perceptions instead of on quantitative measures such as a cumulative grade point average (CGPA) or examination scores. Lastly, the study was primarily centered on the use of AI learning tools as well as perceived usefulness, disregarding other factors that could also affect students' learning outcomes, including digital literacy, learning motivation, academic self-efficacy, and lecturer support.

Suggestions for Future Research

To overcome the limitations of this study, future research should include more varied and larger sample size from multiple public and private universities throughout Malaysia. Comparative analysis of students from various academic fields also would help to understand the AI adoption trends across disciplines.

To supplement students' self-reported perceptions, researchers are encouraged to include objective measures of academic achievement such as CGPA or examination scores. To support the understanding of the long-term educational impacts of AI learning tools, and to draw firmer conclusions about causation, a second type of study (longitudinal and experimental research designs) would benefit the field.

Other factors to be explored in future studies include, but are not limited to, AI literacy, digital competence, self-regulated learning, academic self-efficacy, lecturer support, and ethical awareness. The study of these aspects could help shed light on the broader effects of AI on education and student achievement in higher education.

In general, the results of this study offer preliminary empirical evidence that the use of AI learning tools is positively related to the perceived academic performance of accounting students. While the results need to be taken with a pinch of salt due to the exploratory design of the study, it nevertheless adds to the existing literature on AI-aided learning in higher education institutions in Malaysia and serves as a stepping stone for further research with larger and more representative samples.

Conclusion

This study examined the relationship between AI learning tool usage and perceived academic performance among accounting students in a Malaysian university. Specifically, it investigated the AI learning tools commonly used by students, examined their perceptions of the usefulness of AI in supporting learning, and explored the relationships between AI learning tool usage, perceived usefulness, and perceived academic performance.

The findings indicate that accounting students frequently use AI learning tools such as ChatGPT, Grammarly, and QuillBot to support various academic activities, including studying, assignment preparation, and academic writing. Respondents generally perceived these tools as useful in enhancing their understanding of course materials, improving the quality of assignments, increasing learning efficiency, and strengthening their confidence in completing academic tasks. Correlation analysis further revealed significant positive relationships between AI learning tool usage and perceived academic performance, as well as between perceived usefulness of AI and perceived academic performance. However, no significant relationship was found between AI learning tool usage and perceived usefulness, suggesting that frequent use of AI does not necessarily correspond to stronger perceptions of its educational value.

The findings contribute to the growing body of literature on AI-supported learning by providing preliminary empirical evidence from the perspective of accounting students in Malaysian higher education, a context that remains underrepresented in existing research. The study also highlights the importance of integrating AI responsibly into accounting education. Rather than

replacing conventional teaching methods, AI should be used to complement learning by promoting critical thinking, independent learning, and ethical academic practices.

Although the study is limited by its relatively small sample size and reliance on self-reported data, it offers useful insights for educators, higher education institutions, and policymakers seeking to develop effective strategies for the responsible adoption of AI in teaching and learning. Future research involving larger and more diverse samples, multiple universities, and objective measures of academic performance is recommended to validate and extend the findings. Overall, the study underscores the growing role of AI as a valuable learning support tool while emphasising the need for balanced and ethical integration into accounting education.

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