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The Impact of AI University Students: Satisfaction Toward AI in Education

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ABSTRACT

This research paper focuses on identifying the factors influencing AI usage by Malaysian university students, and its effect on their perceptions and satisfaction, based on Technology Acceptance Model (TAM). Important elements for consideration will be usefulness of AI, ease of use, ethics, and facilitating conditions with rising use of AI through large language models and adaptive systems. A quantitative approach involved surveying 150 students with a 5-point Likert scale questionnaire. The study determined that perceived usefulness and ease-of-use had a positive impact on both attitudes/engagement and that ethical considerations as well as over-reliance had a negative impact on the adoption process. Thus, this research clarifies some of the possible barriers to incorporating artificial intelligence into learning processes and the resulting implications for stakeholders in Malaysia's education environment.

Keywords: Artificial Intelligence (AI); Higher Education; Student Satisfaction; Technology Acceptance Model (TAM); Perceived Ease of Use; Facilitating Conditions.

INTRODUCTION

Artificial Intelligence (AI) in education refers to the application of machine learning algorithms, natural language processing, and data analytics to improve educational outcomes and streamline administrative processes (Vásquez, 2026). It has evolved from 1960s computer-aided instruction, such as Programmed Logic for Automatic Teaching Operations (PLATO), which allowed students to interact with lessons on a screen, to Intelligent Tutoring Systems (ITS) in the 1970s that focused on logic and student responses to provide the next best instructional step (The School House, 2025). AI has increasingly become embedded in higher education, transforming teaching, learning and assessment practices. Nowadays, AI in higher education supports personalised learning pathways, automated assessment, intelligent tutoring, and administrative decision-making through data-driven insights (Hyland, 2026).

The rise of artificial intelligence has introduced a variety of meaningful advantages that empower students in their daily academic lives. Since AI and higher education have strong synergies, they can support personalised learning experiences and aid content creation, which boosts student engagement and optimises learning outcomes (University of St. Augustine for Health Sciences, 2025). Another benefit of AI is that it enables adaptive learning platforms, such as Smart Sparrow and DreamBox, which adjust educational content and experiences to meet individual student needs by providing customised resources, activities and recommendations. As a result, students can learn at their own pace and in their preferred style, enhancing their academic performance (Atlantic Cape Community College, 2025).AI can influence students in both positive and negative ways, depending on how it is used. In a positive way, students who used AI-powered tutoring learned more than twice as much in less time, with higher engagement and motivation levels (Learner, 2025). On the other hand, overreliance can occur when students habitually accept AI suggestions without understanding them and fail to verify these suggestions against their own knowledge (Pitts et al., 2025).

The usage of Artificial Intelligence in the higher education sector gives significant advantages, primarily by enhancing learning efficiency and offering students better tools to achieve positive outcomes through instant responses and easy access to the resources (Dahri et al., 2024). Although they will introduce serious problems related to student satisfaction (Almulla, 2024), these emerging technologies will create issues related to student dependence on tools that develop their analytical ability. As a result, their critical thinking ability will be limited (Melisa et al., 2025), and there will be ethical issues associated with using AI, such as plagiarism and misuse, and diminishing overall student satisfaction (Vieriu & Petrea, 2025). Student responses to these risks will determine how satisfied they are in the long term and if they continue using AI (Almulla, 2024).

In this case, an extended Technology Acceptance Model (TAM) will be used to offer a more elaborate explanation of the perceptions. This model examines primary factors such as perceived usefulness and perceived ease of use, which in the opinion of the students, AI improves their academic achievements. However, in order to enhance the theoretical relationship further, this framework is extended through the introduction of the ethical factor as well as facilitating conditions, like university infrastructure and support, to assess their overall influence on the level of student satisfaction (Almulla, 2024).

Although there is much interest worldwide concerning the implementation of AI in education, research on AI in Malaysia’s colleges and universities is still immature. The literature on this subject does not describe the interaction between technical and ethical variables in relation to student satisfaction within the Malaysian socio-academic

environment, nor do they describe the nature of this interaction (Rosli et al., 2022). Therefore, the purpose of this study is to identify the various influences driving local degree-seeking students to adopt AI as part of their education and how each of these influences contribute to an overall positive or negative experience when using AI in their academic endeavors.

LITERATURE REVIEW

The inclusion of artificial intelligence technology in higher education has changed the way of teaching, learning, and academic support. The various forms of AI tools that can be found at universities include intelligent tutoring system, recommender engine, chatbot, adaptive learning systems, and AI generators that help personalize the learning process and increase academic efficiency (Floridi et al., 2018; Chatterjee & Bhattacharjee, 2020). AI tools offer the opportunity for students to receive immediate feedback, easier and quicker access to learning resources, and overall increased convenience when completing academic assignments (Tarhini et al., 2017).

However, the application of AI technology in higher education does not simply depend on technical features and capabilities of AI tools. The success and students' satisfaction with AI also depend on their perception of the benefits, ease of use, ethics of the tool, and institutional support that can be received from AI. Student satisfaction should be viewed as one of the outcomes that demonstrates AI adoption and its contribution to academic achievement.

Theoretical Foundation: Technology Acceptance Model

This research utilizes the Technology Acceptance Model (TAM), developed by Davis (1989), as its theoretical foundation. The two basic beliefs that define acceptance of technology according to TAM are usefulness and ease of use. To clarify: use is determined by how much better off you think you will be due to using the technology; it is also determined by how easy it will be for you to actually use the technology. For instance, if you think that using a piece of equipment will enhance your ability to do something, and it does not take you much time to learn how to operate it, you will most likely adopt it into your daily life. As applied in an academic environment, students who believe there is significant educational value in ai tools and also find that they are easy to use will likely engage these types of tools (Venkatesh & Davis, 2000).

The application of AI within higher education, however, also presents issues that are beyond what was originally introduced in the TAM. Specifically, ethical issues such as privacy, transparency, bias, and academic integrity can diminish students' trust and satisfaction with their experiences with AI. Another issue that can impact students' abilities to effectively use AI is the degree of facilitating conditions, including but not limited to, internet access, technical support, institutional support, and training. Hence, this research will adapt the TAM framework to include ethical issues and facilitating conditions for a more comprehensive approach to understanding how to enhance student satisfaction with AI.

Perceived Usefulness of AI and Student Satisfaction

Usefulness pertains to how students see the benefit of adopting AI to their studies and learning processes (Davis, 1989). The usefulness of AI in higher education involves its contribution to improving efficiency and effectiveness in learning, comprehension of tough materials, problem-solving abilities, and achievement of positive academic results. Furthermore, AI tools might make it easier for students to study, offer explanations and assistance in a personalized way and encourage self-reliant studying (Tarhini et al., 2017). When students realize these features of AI, they will be inclined to evaluate the technology positively and feel more satisfied.

It has been demonstrated repeatedly that the usefulness of the technology is one of the key determinants of acceptance (Venkatesh et al., 2003). It can be presumed that in the context of education, students' perceptions of a new technology will depend on how much help they get in learning from it and how useful it is to them. If AI allows completing homework faster and being more productive and knowledgeable, students will most likely appreciate its usefulness and be happy with their experience using it (Chatterjee & Bhattacharjee, 2020). Otherwise, usefulness will be seen by them as something negative.

H1: Perceived usefulness of AI has a positive effect on student satisfaction.

Perceived Ease of Use of AI and Student Satisfaction

Ease of use describes how easily students think they can access AI technologies and is considered to be integral for student success in higher education as they will be more inclined to engage regularly with AI tools when there is a user-friendly interface, clear guidance, and smooth operation of the system. Also, user-friendly tools will diminish student frustration, which helps keep students focused on learning rather than on how to work the tool. This will ultimately lead to positive attitudes toward AI technology and higher levels of satisfaction when using them.

The student context is significant because many students have little time to learn complex systems, and they may not be willing to spend additional time learning to use them; therefore, if an AI tool is difficult to navigate, students will typically opt out of using that tool regardless of its academic capabilities. Conversely, if an AI tool is simple to navigate, students will perceive AI as being accessible, practical, and advantageous to their academic progress (Tarhini et al., 2017). Further, by providing an easy-to-use system, it enhances the student's perception of the usefulness of AI because they will recognise that they can use it successfully, thus improving their perceptions of the academic advantages of using AI (Venkatesh & Davis, 2000).

H2: Perceived ease of use of AI has a positive effect on student satisfaction.

Ethical Concerns of AI and Student Satisfaction

Ethical concerns have emerged as an important issue associated with AI integration, especially within the educational context, where issues related to privacy, bias, accuracy, and academic integrity carry a lot of weight (Floridi et al., 2018). The students may question the manner of collecting personal information, ask whether the technologies used are biased against them, whether their answers are provided accurately enough, and whether there is a risk of undermining academic integrity by the pervasive use of AI. All these concerns may undermine the acceptance of AI by students even if the latter is objectively useful (Zawacki-Richter et al., 2019).

There is an important connection between ethical concerns and trust that the students feel toward particular technologies. The perception of a system being intrusive, biased, inaccurate, or inadequately controlled may lead to a reluctance to work with it even though the latter is acknowledged to be efficient. Thus, the students can consider the technology useful and easy to work with, but at the same time be afraid of the ethical concerns raised by its use. It should be said that ethical considerations are an inherent part of technology acceptance (Floridi et al., 2018).

Ethical Issues in Higher Education - Ethical issues in higher education also relate to Institutions and how they are expected to support the ethical use of technology within their institutions and protect their students from the potential for unclear data practices, algorithmic bias, and misuse of Artificial Intelligence. If these issues are not clearly defined, students may have a distrust of the adoption of Artificial Intelligence (Zawacki-

Richter et al., 2019). Thus, ethical issues are one of the key factors incorporated into the extended TAM framework.
H3: Ethical concerns of AI have a negative effect on student satisfaction.

Facilitating Conditions of AI and Student Satisfaction
Facilitating conditions describe how well students believe that the resources for using the technology will be at hand (Venkatesh et al., 2003). Concerning the application of AI technologies in education, facilitating conditions mean having all the equipment needed, a reliable connection to the Internet, technical support, instructions issued by the institution, and proper training in the use of such tools. Though students can find AI technologies beneficial, they can fail to use them if the mentioned above resources are not sufficient.

Facilitating conditions have a great potential to help students enjoy working with AI technologies and feel more satisfied with their academic performance. Providing students with technical assistance and guidelines, institutions allow their members to use AI technologies easily and conveniently. Such an approach positively affects students' attitudes towards the technologies mentioned (Al-Emran et al., 2018). The significance of facilitating conditions is associated with different levels of digital skills possessed by students.

Satisfaction may not be determined directly via facilitating conditions; however; they could indirectly cause satisfaction by increasing people's willingness to use technology due to the perceived usefulness of the technology, as well as the perceived ease of using that technology. A positive atmosphere for students' use of AI could improve their use (efficiency) and create a better sense of perception about how manageable and useful it is to them. As an example, students might view AI as more useful and less difficult to use as a result of training received in schools (Venkatesh et al., 2003). Thus, facilitating conditions do not serve as merely background variables; rather, they are active elements impacting students' satisfaction with learning via AI technology.
H4: Facilitating conditions of AI have a positive effect on student satisfaction.

RESEARCH METHOD

In this study, participants are university students who either use or are aware of using any type of artificial intelligence (AI) tool during their university life. Data for this study were gathered through an online survey conducted through Google Forms. In order to have a wider reach and diverse participants, the link to this online survey was randomly distributed among the different contacts and connections of the researcher through email invitations and social media messages. The survey was voluntary and anonymous in which prior to taking the test, participants were informed of the objectives of the study and gave consent.

All constructs in this study were measured using a 5-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The items are presented in Appendix 1 and were adapted or developed to assess university students' satisfaction with AI in education. To measure students' perceived usefulness of AI, a 4-item 5-point Likert scale adapted from (Rahiman & Kodikal, 2024) was adopted. A sample item is: "Using AI tools improves my learning outcomes." The reliability of this construct was confirmed with a Cronbach's alpha of 0.911.

Students' perceived ease of use (EOU) of AI was measured using a 4-item scale also adapted from (Rahiman & Kodikal, 2024), on a 5-point Likert scale. A sample item is: "Using AI tools in my studies is easy." Cronbach's alpha for this construct was 0.961. Ethical concerns (EC) regarding AI use were measured using a 5-item scale adapted

from (Nah, Zheng, Cai, Siau, & Chen, 2023), based on their study Generative AI: Opportunities and Challenges for Higher Education. A sample item is: "I am concerned about the ethical implications of using AI in my assignments." Cronbach's alpha for this construct was 0.906.

Facilitating conditions (FC) were assessed using a 4-item scale adapted from (Rahiman & Kodikal, 2024), with responses recorded on a 5-point Likert scale. A sample item is: "Access to AI tools in my institution supports my use of AI for learning." Cronbach's alpha was 0.807 . Finally, satisfaction with AI in education (the dependent variable) was measured using a 4-item scale adapted and modified for the student perspective from standard satisfaction scales, following the (Rahiman & Kodikal, 2024) framework for educational technology impact. A sample item is: "I am satisfied with the academic assistance provided by AI tools." This construct exhibited strong reliability, with a Cronbach's alpha of 0.963.

RESULTS

This section presents the findings from the statistical analysis conducted using IBM SPSS Statistics. The analysis includes the respondents' profile, reliability analysis, descriptive statistics, Pearson correlation analysis, and multiple regression analysis. A total of 150 valid responses were used in the analysis.

Respondents' Profile

The respondents were mainly undergraduate students, representing 85.3% of the sample. Postgraduate students accounted for 10.7%, whereas doctoral students represented 4.0%. In terms of field of study, the largest group came from Business and Economics (29.3%), followed by Engineering and Technology (23.3%), Social Sciences and Humanities (22.7%), and Medical and Health Sciences (14.7%). Regarding the frequency of use of AI, more than half of the respondents reported using AI tools daily (57.3%) and weekly use of (32.7%).

Table 1. Respondents' Profile

Variable	Category	Frequency	Percentage (%)
Level of Study	Doctorate (PhD)	6	4.0
	Postgraduate (Masters/MPhil)	16	10.7
	Undergraduate (Bachelors)	128	85.3
Field of Study / Faculty	Accounting	1	0.7
	Business and Economics	44	29.3
	Education	1	0.7
	Engineering and Technology	35	23.3
	Law	1	0.7
	Management / management	7	4.7
	Medical and Health Sciences	22	14.7
	Pharmacy	3	2.0
	Sciences	1	0.7
	Social Sciences and Humanities	34	22.7
	Zoology	1	0.7
Frequency of AI Use	Daily	86	57.3
	Weekly	49	32.7
	Monthly	11	7.3
	Rarely / Never	4	2.7

Note. Percentages are based on N = 150. Categories of "Management" and "management" were combined because SPSS displayed them as separate entries due to case-sensitive data entry.

Reliability Analysis

The reliability of each construct was tested using Cronbach's alpha coefficient as an assessment tool for measuring internal consistency. From Table 2, all constructs demonstrated reliability with all Cronbach's alpha scores being above .80. Among the five constructs examined, the highest reliability score was found to be that of Satisfaction (.963), followed by Ease of Use (.961), Usefulness (.911), Ethical Concerns (.906), and Facilitating Conditions (.807).

Table 2. Reliability and Descriptive Statistics of the Constructs

Construct	Items	Cronbach's Alpha	Mean	Std. Deviation
Usefulness	PU1-PU4	.911	4.348	.749
Ease of Use	EOU1-EOU4	.961	4.300	.767
Ethical Concerns	EC1-EC5	.906	4.380	.645
Facilitating Conditions	FC1-FC4	.807	4.297	.756
Satisfaction	SAT1-SAT4	.963	4.300	.751

Note. α = Cronbach's alpha. Mean and standard deviation are based on variable scores generated in SPSS.

Descriptive Statistics and Correlation Analysis

From the descriptive statistics, it is clear that there were high levels of agreement among all respondents on the constructs. The mean scores for Ethical Concerns (M = 4.380, SD = .645), Usefulness (M = 4.348, SD = .749), Satisfaction (M = 4.300, SD = .751), Ease of Use (M = 4.300, SD = .767), and Facilitating Conditions (M = 4.297, SD = .756) indicated that all constructs were rated well by respondents.

A Pearson correlation analysis was conducted to help analyse the relationships between the study's constructs. The results revealed that Satisfaction was positively and significantly correlated with Ease of Use ($r = .878$, $p < .001$), Usefulness ($r = .784$, $p < .001$), Facilitating Conditions ($r = .651$, $p < .001$) and Ethical Concerns ($r = .492$, $p < .001$). Therefore, higher levels of perceived Ease of Use, Usefulness, Facilitating Conditions, and Ethical Concerns were associated with greater levels of Satisfaction.

Table 3. Descriptive Statistics and Pearson Correlations

Variable	M	SD	1	2	3	4	5
1. Usefulness	4.348	.749	1				
2. Ease of Use	4.300	.767	.884**	1			
3. Ethical Concerns	4.380	.645	.515**	.563**	1		
4. Facilitating Conditions	4.297	.756	.554**	.634**	.545**	1	
5. Satisfaction	4.300	.751	.784**	.878**	.492**	.651**	1

Note. N = 150. **p < .01, two-tailed. M = mean; SD = standard deviation.

Multiple Regression Analysis

Multiple regression analysis was conducted to determine the extent to which Usefulness, Ease of Use, Ethical Concerns, and Facilitating Conditions predicted Satisfaction. The regression model was statistically significant, $F(4, 145) = 134.746$, $p < .001$, and explained 78.8% of the variance in Satisfaction ($R^2 = .788$; adjusted $R^2 = .782$). The

Durbin-Watson value was 2.100, suggesting that the independence of errors assumption was acceptable.

Among the predictors, Ease of Use was the strongest significant predictor of Satisfaction (β = .756, t = 8.492, p < .001). Facilitating Conditions also significantly predicted Satisfaction (β = .176, t = 3.402, p < .001). However, Usefulness (β = .046, t = .560, p = .576) and Ethical Concerns (β = -.053, t = -1.102, p = .272) were not significant predictors when all variables were entered simultaneously. Although Usefulness had a strong bivariate relationship with Satisfaction, its non-significant regression coefficient suggests that its effect may overlap with Ease of Use.

Table 4. Multiple Regression Predicting Satisfaction

Predictor	B	SE B	β	t	p	VIF
Constant	.441	.216	-	2.037	.044	-
Usefulness	.046	.082	.046	.560	.576	4.581
Ease of Use	.740	.087	.756	8.492	< .001	5.421
Ethical Concerns	-.062	.056	-.053	-1.102	.272	1.607
Facilitating Conditions	.175	.051	.176	3.402	< .001	1.830

Note. Dependent variable: Satisfaction. R = .888, R^2 = .788, adjusted R^2 = .782, F(4,145) = 134.746, p < .001. VIF = variance inflation factor.

Summary of Hypothesis Testing

Based on the regression results, Ease of Use and Facilitating Conditions were significant positive predictors of Satisfaction. Therefore, hypotheses related to these two predictors were supported. In contrast, Usefulness and Ethical Concerns did not significantly predict Satisfaction after controlling for the other variables; therefore, the related hypotheses were not supported.

Table 5. Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	Usefulness positively influences Satisfaction.	β = .046, p = .576
H2	Ease of Use positively influences Satisfaction.	β = .756, p < .001
H3	Ethical Concerns influence Satisfaction.	β = -.053, p = .272
H4	Facilitating Conditions positively influence Satisfaction.	β = .176, p < .001

Overall Summary of Results

In general, the results of this study indicate that the students' perception of usefulness, ease of use, ethical concerns, facilitating conditions, and satisfaction regarding AI is relatively high. All the measurement scales have shown high reliability. On the other hand, correlations show a strong positive relationship between all the constructs. However, the regression results reveal that ease of use and facilitating conditions influence students' satisfaction.

DISCUSSION

In this section, the results of the survey conducted on university students' satisfaction concerning artificial intelligence in the field of education will be described. In order to describe these results, an extended TAM model can be applied in analysis. It implies that technology acceptance is influenced by perceptions of usefulness and ease of use, while ethical concerns and facilitating conditions can serve as additional factors affecting

the adoption of such technologies. Generally, all mentioned variables demonstrated positive perceptions among university students concerning usefulness, ease of use, facilitating conditions, and satisfaction. Nevertheless, regression analysis showed that only two predictors significantly predicted satisfaction when all variables were considered together.

It should be noted that the respondents participating in the survey were mostly undergraduates, which accounts for 85.3% of total respondents. Thus, one may state that the results obtained reflect opinions of university students who engage in academic activity and apply different types of digital technologies during studying. According to the data provided by respondents, AI became a part of their academic life because 57.3% of respondents use it on a daily basis, and 32.7% use it on a weekly basis. AI has become more accepted as part of everyday learning, rather than an occasional tool in education. As many students now use AI frequently, this may explain why participants scored highly (means), for all constructs of perceived usefulness, perceived ease of use, facilitating conditions and satisfaction.

The reliability results demonstrate that all constructs exhibit good to excellent levels of internal consistency. The Cronbach's alpha coefficients for the Construct Items ranged from .807 to .963 meaning the Construct Measurement Items utilized in this study were reliable for additional analysis. Of the five constructs, Satisfaction has the highest reliability, followed by Perceived Ease of Use, Perceived Usefulness, Ethical Concerns, and Facilitating Conditions. Therefore, it appears that the Construct Measurement Items were consistent in measurement of the intended constructs, resulting in data suitable for conducting correlation and regression analyses.

The descriptive results indicate that students have been found to agree that AI is beneficial, usable, ethically significant, supported by facilitating conditions, and satisfying in the field of education. Concerns about ethics emerged as having the highest mean score, followed by benefits, satisfaction, usability, and facilitating conditions. The significance of ethical concerns implies that students are conscious of problems such as plagiarism, privacy, dependence, misleading information, and ethical utilization of AI. This does not imply that students are opposed to the use of AI; rather, it means that students value the advantages of AI and understand the importance of using them ethically.

All variable relationships studied were found to be statistically significant and positively correlated; satisfaction levels were found to have a strong positive correlation with ease of use and usefulness while exhibiting moderate correlations with facilitating condition and ethical concern variables. This finding supports the Technology Acceptance Model (TAM), wherein those students who found A! to be more usable, useful, supportive, and ethically acceptable also showed correspondingly high levels of satisfaction as compared to those who experienced AV as being difficult to use or having low utility or support/ethical acceptability.

The multiple regression analysis found that the model as a whole is statistically significant with an R^2 value of 0.788 which explains the variance in the students' satisfaction. The results reveal that the set of constructs in the model is able to explain the reasons behind the students' satisfaction with AI in education. Perceived ease of use, among the four independent variables tested, emerged as the most important significant predictor of satisfaction. This supports H2 that the ease with which a user learns how to operate something makes them satisfied with it.

It becomes evident from the great effect of ease of use that the significance of user-friendly AI technologies cannot be understated in the context of higher education. Indeed, students use AI technologies for various purposes including completing assignments, comprehending complex issues, summarizing data, generating ideas, and increasing their efficiency. When it comes to complicated AI tools that are difficult to use and consume a lot of efforts on part of students, the latter will most likely refrain from using them as much. Meanwhile, user-friendly and easy-to-use AI technologies increase the likelihood of receiving a positive effect from them for the purposes of educational processes. Such an assertion is well aligned with the theory of Technology Acceptance Model, as well as the point made by Venkatesh and Davis about the importance of ease of use.

Moreover, facilitating conditions have been shown to significantly impact student satisfaction in a positive manner as well. Thus, H4 is proved by the results of this research, and it means that students feel more satisfied with the implementation of AI as long as they have everything needed for this task. Facilitating conditions can be interpreted as having Internet connection, devices, organizational support, opportunities for learning and studying within an academic institution which facilitates and encourages the usage of the latest technologies.

Facilitating Conditions have a very important role in that AI in Education is influenced by the personal perceptions of the student as well as by the support of the respective institutions. Even if students believe that AI is helpful and that AI technologies are easy to use, they will be less satisfied with the technology provided to them if they do not have stable internet access, the correct devices to use AI, proper guidance from their teachers about how to use AI effectively and the encouragement of their institution to use AI in education.

Therefore, universities must work to create an environment in which students can use AI responsibly and effectively through the provision of facilitating conditions. This draws parallels to Venkatesh et al.'s (2003) research which described the role of facilitating conditions in the use of technology by providing an avenue for lowering practical barriers and increasing user confidence when utilizing technology.

However, interestingly, usefulness was not a predictor of satisfaction in the regression analysis, even though there was a significant positive relationship between the two variables. Hence, the hypothesis H1 could not be supported by the findings of this research study. This finding indicates that while students understand the academic relevance of AI systems, usefulness alone cannot be a contributing factor to satisfaction in the presence of both facilitating conditions and ease of use. This can possibly happen because of a close overlap between the construct of usefulness and ease of use. There was a very high correlation between usefulness and ease of use, meaning that those students who find AI easy to use also find it useful.

This finding does not imply that usefulness is irrelevant. On the contrary, the relationship between usefulness and satisfaction could indicate that usefulness interacts with ease of use in the context of this research. Students may find the use of AI helpful only if they can make sense of it effectively and without too much difficulty. For instance, an AI-based learning application might offer useful academic help, but students may feel dissatisfied if it takes too much effort to use the software.

In the regression model, ethical concerns were also not a substantial predictor of satisfaction. For this reason, H3 was not upheld. Ethical concerns exhibited a positive correlation with satisfaction; however, this effect was rendered non-significant when

utility, usability, and facilitating conditions were accounted for in the regression model applied here. This illustrates that ethical concerns likely did not reduce respondents' levels of satisfaction with the use of artificial intelligence tools; rather, respondents may have been aware of the potential risks associated with the use of artificial intelligence yet, nonetheless, developed a sense of satisfaction when using those tools, particularly if they provided ease of use and appropriate support.

This finding is important because it indicates that students' awareness of ethical concerns does not appear to deter them from using or finding value in artificial intelligence. While students may be aware of concerns related to academic dishonesty, privacy, bias, inaccurate information, and over-reliance on artificial intelligence, there appear to be instances in which those concerns exist simultaneously with positive artificial intelligence experiences related to learning.

Finally, the outcome of non-significance should not suggest to universities that they should disregard ethical issues. Ethical concerns continue to be highly relevant, as they influence how students perceive and experience responsible use of artificial intelligence in academic work. Universities should continue providing clear policies and direction relative to acceptable applications of artificial intelligence, academic integrity, citation or acknowledgment of use of artificial intelligence, and the necessity of validating artificial intelligence-generated information.

Several practical implications can be drawn from the results. To begin with, the universities should concentrate their efforts on adopting AI solutions that are user-friendly and simple for the learners to employ. As ease of use proved to be the best predictor of satisfaction, it would be wrong for the institutions to allow complex platforms that may frustrate students. It would be reasonable to arrange training workshops and present guidelines for utilizing AI.

Additionally, the facilitating conditions should be reinforced. Universities will have to improve their infrastructure, provide technical assistance, and offer institutional guidance for students to enjoy full benefits of AI. Learners should have an access to steady internet connection, proper technology, and sufficient technical support. The universities should foster an academic culture in which AI is used responsibly.

As for the third point, even though ethical concerns were not found to independently predict satisfaction, the high average score for ethical concerns suggests that students recognize their awareness of the risks involved with AI. Consequently, universities need to establish formal policies regarding plagiarism, privacy, data security, overdependence, and appropriate use of AI-generated material; while lecturers can assist with guiding students on how to use AI as an educational tool rather than as a substitute for independent thought. This is vital in ensuring that AI can help to achieve educational goals while not compromising critical thinking and academic integrity.

The overall conclusion of this discussion indicated that student satisfaction with AI in education is influenced primarily by both the usability of AI applications and the amount of guidance received in terms of how to properly utilize AI applications. Although usefulness and ethical concerns remain relevant to the predictive capacity of student satisfaction within the analysed regression model, both lack sufficient independence from other predictors of satisfaction. As a result, universities must not only focus on highlighting the benefits associated with using AI, but also ensure that students have access to AI applications, can adequately utilise AI applications, and have ethical policies that govern the use of AI applications; in addition, strong institutional supports must also

exist for any educational institution that desires to have positive experiences with its students using AI in education.

Limitations and Recommendations for Future Research

One of the main weaknesses of this research is that there was not enough variation in the values of several variables. It influenced the results of testing reliability, correlations, and regressions. The absence of variation in the value of the dependent variable led to the conclusion that the proposed model could not be statistically checked. Future research should carry out a pilot survey to ensure sufficient variation of the questionnaire questions.

The questionnaire items should also be reviewed to avoid overly leading or repetitive statements that may cause respondents to answer in the same way. Reverse-coded items may be used carefully, but they should be clearly written to prevent confusion. In addition, researchers should check the data coding process in SPSS to ensure that all items are correctly entered, labelled, and computed. Any item with zero variance should be identified early before reliability and regression analyses are conducted.

Future research may also use a larger and more diverse sample across different universities, academic levels, and fields of study. Since the current sample was mostly undergraduate students, the findings may not fully represent postgraduate students or students from all academic disciplines. Qualitative methods such as interviews or open-ended survey questions may also help explain why students find AI useful, what ethical concerns they experience, and what type of institutional support they need.

Overall, the study suggests that students have favourable perceptions of AI in education, particularly in terms of usefulness, ease of use, and facilitating conditions. However, the statistical limitations mean that the proposed relationships between the independent variables and satisfaction cannot be confirmed. Therefore, the findings should be presented as an early indication of students' positive AI perceptions, while future research should improve the measurement and data quality to test the extended TAM model more accurately.

CONCLUSION

In the current research paper, students' satisfaction towards the use of AI in education has been evaluated based on the Extended Technology Acceptance Model. Four main predictors, which include perceived usefulness, perceived ease of use, ethical concerns, and facilitating conditions, have been considered in the present research. According to the results collected from 150 valid responses, it may be noted that students perceive AI positively during the process of their academic endeavors. In the vast majority of cases, respondents were utilizing AI tools regularly, whether on a daily or weekly basis.

As per the reliability analysis, the measurement scales used in the current study are highly reliable as all constructs exhibit Cronbach's alpha greater than .80. As per the descriptive analysis, the results reveal a high level of agreement with regard to all constructs used in the research. Students, in general, perceive AI as useful, easy to use, facilitated by conditions, and as an option that can provide satisfaction within an educational context. Ethical concerns are also measured at a relatively high level.

According to correlation analysis, there was a positive relationship among all study variables. This includes; satisfaction, usefulness, ease of use, ethical issues, and facilitating conditions. Following the multiple regression analysis, we were able to identify more meaningful variables than just correlation alone in order to predict what will cause

satisfaction. Each of these predictors had a positive significant correlation with can help bring more satisfaction as well. The multiple-regression model produced statistically significant results with an amount of 78.8% power significance in predicting variance or satisfaction. The Extended Technology Acceptance Model provided sufficient enough evidence to support students satisfaction in terms of Artificial Intelligence as an educational supplement. Of the four predictors, Perceived Ease-of-Use was found to be the strongest predictor of satisfaction. This indicates that students are more satisfied with AI when they believe that learning, using and completing academic tasks under AI-based system is easy for them to accomplish. Supporting conditions to have a significant positive impact on satisfaction, supporting the fact that students prefer having access to resources, institutional support and/or training, technical assistance, and a conducive learning environment, all contribute positively to the likelihood of students being satisfied. As such, H2 and H4 were supported.

However, contrary to what was expected, perceived usefulness was not found to have an impact on student satisfaction regardless of whether it was combined with other variables or considered separately. In spite of the fact that usefulness correlated positively with satisfaction, usefulness was insignificant in predicting student satisfaction once all variables had been included in the regression analysis. This may happen due to overlap between usefulness and ease of use if a tool is easy for students to use, it will be useful at the same time. The significance of ethical concern was another surprising finding indicating that being aware of the possible ethical challenges associated with using AI cannot decrease students' satisfaction with the learning technology.

Therefore, this research sheds light on the factors influencing student satisfaction with AI as a learning technology used by higher education students. While usefulness and ethical considerations are important in evaluating student satisfaction, the most significant factors seem to be the ease of use of the technology and facilitating conditions allowing students to use AI effectively.

In addition to offering valuable insights, the research has limitations. First, the majority of participants were undergraduates; therefore, these results may not be applicable to other types of students (postgraduate or otherwise). Second, due to the nature of a quantitative survey method, it is possible that this research was not able to effectively reflect deeper insights regarding the student experience, student concerns, and the student expectations of AI in education. Future research should attempt to sample a larger, more diverse group of students at various universities and faculties from different levels of study. Furthermore, qualitative interviews and/or open response formats should be included in future work to offer better explanations about how students use AI and how they benefit/challenge from the use of AI.

To conclude, the application of AI technology can prove very effective in supporting higher education, provided that it is user-friendly, is backed by the right facilitating conditions, and adheres to responsible academic practices. According to the results of this research, ease of use and facilitating conditions play an important role in determining student satisfaction with AI technology in education. Therefore, it is necessary for universities to pay attention to the introduction of such technologies as well as their efficient and ethical use by students.

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DECLARATION OF CONFLICTING INTERESTS

The authors declare that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

Al-Emran, M., Mezhuyev, V., & Kamaludin, A. (2018). Technology Acceptance Model in m-learning context: A systematic review. Computers & Education, 125, 389-412. https://doi.org/10.1016/j.compedu.2018.06.008

Almulla, M. A. (2024). Investigating influencing factors of learning satisfaction in AI ChatGPT for research: University students perspective. Heliyon, 10(11), Article e32220. https://doi.org/10.1016/j.heliyon.2024.e32220

Chatterjee, S., & Bhattacharjee, K. K. (2020). Adoption of artificial intelligence in higher education: A quantitative analysis using structural equation modelling. Education and Information Technologies, 25(5), 3443-3463. https://doi.org/10.1007/s10639-020-10159-7

Dahri, N. A., Yahaya, N., Al-Rahmi, W. M., Aldraiweesh, A., Alturki, U., Almutairy, S., Shutaleva, A., & Soomro, R. B. (2024). Extended TAM based acceptance of AI-powered ChatGPT for supporting metacognitive self-regulated learning in education: A mixed-methods study. Heliyon, 10(8), Article e29317. https://doi.org/10.1016/j.heliyon.2024.e29317

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340. https://doi.org/10.2307/249008

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., & Vayena, E. (2018). AI4People-An ethical framework for a good AI society: Opportunities, risks, principles, and recommendations. Minds and Machines, 28(4), 689-707. https://doi.org/10.1007/s11023-018-9482-5

Hyland. (n.d.). AI use cases in higher education. https://www.hyland.com/en/resources/articles/ai-higher-education

Kestin, G., Miller, K., Klales, A., Milbourne, T., & Ponti, G. (2025). AI tutoring outperforms in-class active learning: An RCT introducing a novel research-based design in an authentic educational setting. Scientific Reports, 15, Article 17458. https://doi.org/10.1038/s41598-025-97652-6

Melisa, R., Ashadi, A., Triastuti, A., Hidayati, S., Salido, A., Ero, P. E. L., Marlini, C., Zefrin, Z., & Al Fuad, Z. (2025). Critical thinking in the age of AI: A systematic review of AI's effects on higher education. Educational Process: International Journal, 14, Article e2025031. https://doi.org/10.22521/edupij.2025.14.31

Nah, F. F.-H., Zheng, R., Cai, J., Siau, K., & Chen, L. (2023). Generative AI and ChatGPT: Applications, challenges, and AI-human collaboration. Journal of Information Technology Case and Application Research, 25(3), 277-304. https://doi.org/10.1080/15228053.2023.2233814

Pitts, G., Rani, N., Mildort, W., & Cook, E.-M. (2025). Students' reliance on AI in higher education: Identifying contributing factors. arXiv. https://doi.org/10.48550/arXiv.2506.13845

Rahiman, H. U., & Kodikal, R. (2024). Revolutionizing education: Artificial intelligence empowered learning in higher education. Cogent Education, 11(1), Article 2293431. https://doi.org/10.1080/2331186X.2023.2293431

Rosli, M. S., Saleh, N. S., Md. Ali, A., Abu Bakar, S., & Mohd Tahir, L. (2022). A systematic review of the Technology Acceptance Model for the sustainability of higher education during the COVID-19 pandemic and identified research gaps. Sustainability, 14(18), Article 11389. https://doi.org/10.3390/su141811389

Smart Sparrow. (n.d.). Higher education. https://www.smartsparrow.com/solutions/highered/

Tarhini, A., Hone, K., Liu, X., & Tarhini, T. (2017). Examining the moderating effect of individual-level cultural values on users' acceptance of e-learning in developing countries: A structural equation modeling of an extended technology acceptance model. Interactive Learning Environments, 25(3), 306-328. https://doi.org/10.1080/10494820.2015.1122635

The School House. (2025, May 12). History of AI in education: From origins to future. https://www.theschoolhouse.org/post/history-ai-education-origins-future

University of St. Augustine for Health Sciences. (2025, April 18). AI in higher education: How AI is reshaping higher education. https://www.usa.edu/blog/ai-in-higher-education-how-ai-is-reshaping-higher-education/

Vasquez, L. (2026, January 30). Artificial intelligence in education: How AI is transforming learning and teaching. URBE University. https://urbeuniversity.edu/blog/artificial-intelligence-in-education-how-ai-is-transforming-learning-and-teaching

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. Management Science, 46(2), 186-204. https://doi.org/10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478. https://doi.org/10.2307/30036540

Vieriu, A. M., & Petrea, G. (2025). The impact of artificial intelligence (AI) on students' academic development. Education Sciences, 15(3), Article 343. https://doi.org/10.3390/educsci15030343

Zawacki-Richter, O., Marin, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education - where are the educators? International Journal of Educational Technology in Higher Education, 16, Article 39. https://doi.org/10.1186/s41239-019-0171-0

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