INTERNATIONAL ACADEMIC RESEARCH JOURNAL

ISSN :2289-8441

International Academic Research Journal of Social Science

Journal homepage: www.iarjournal.com

ARTIFICIAL INTELLIGENCE PRACTICES AMONG STUDENTS IN PUBLIC INSTITUTIONS OF HIGHER LEARNING IN NEGERI SEMBILAN, MALAYSIA

Putri Filzah Azilan[1], Muhamad Fuad Abdul Karim[1]

[1]Fakulti Sains Pentadbiran dan Pengajian Polisi, Universiti Teknologi MARA Negeri Sembilan, Kampus Seremban

Corresponding email: fuad645@uitm.edu.my

Article Information

Keywords
Socio-psychological factors, AI practices, motivation, peer influence, self-efficacy, higher education

Abstract

This study investigates the socio-psychological factors influencing artificial intelligence (AI) practices among students in Public Institutions of Higher Learning (PIHL) in Negeri Sembilan, Malaysia. As AI becomes increasingly integrated into higher education, understanding students' attitudes, motivation, and social influences is essential to promote effective adoption. The study focuses on three key constructs: motivation, peer influence, and self-efficacy and their impact on students' engagement with AI tools in academic activities. A quantitative, cross-sectional design was employed, using a structured questionnaire administered to 225 undergraduate students from UiTM, USIM, and Politeknik Port Dickson. Data were analysed using descriptive statistics, mean analysis, and reliability testing. The results indicate high levels of AI practices, with a mean score of 4.1040 and a Cronbach's alpha value of 0.911, with excellent internal consistency for all constructs. The findings suggest that socio-psychological factors play a critical role in supporting students' effective and responsible use of AI. The study highlights the need to cultivate students' understanding, self-confidence, and motivation in using AI, alongside promoting positive peer support, to facilitate responsible, efficient, and ethical integration of AI technologies within Malaysian higher education.

INTRODUCTION

Artificial Intelligence (AI) is a fast-moving disruptive technology that can carry out with relative efficiency activities previously performed by human intelligence, such as learning, information processing, decision-making, and autonomous functioning. The idea of AI is credited to one of the most famous posed questions in 1950 by Alan Turing in his seminal work, can machines think? that prompted the creation of the Turing Test as a primitive measure of machine intelligence. The term artificial intelligence as it is now known was first coined by John McCarthy in 1956, and it initiated the systematic study and development of the domain. AI has advanced beyond rule-based systems and initial neural networks to advanced deep learning structures and generative models which are currently capable of supporting intricate cognitive tasks.

Recent developments in generative AI system applications, like ChatGPT, Gemini, and Perplexity, have greatly increased the AI scope in various fields and specifically in education. Such technologies can generate human-like

text, provide analytical feedback, and assist in solving complicated problems. AI is being applied more in the field of higher education to improve academic outcomes, customize learning, and offer real-time feedback. Generative AI helps students to generate ideas, structure their content, refine language, and synthesize knowledge, thus enhancing the efficiency of learning and academic performance.

Implementation of AI in education has taken a faster pace all around the world. The survey conducted by SpringsApps (2025) shows that an estimated 58 percent of university professors have started attentively integrating generative AI in their teaching methods. The trend represents a wider digital transformation of higher education and highlights the need to learn more about the way students use AI technologies. With the increased access to AI tools, students are now more exposed to the possibilities of adopting AI technologies into their learning process, and student engagement with AI is becoming a very important field of research.

The use of AI in Malaysia has seen significant growth especially in the Public Institutions of Higher Learning (PIHL) where students are now more inclined to use AI tools to accomplish academic assignments, process information and improve their learning results. Regardless of the abundance of AI technologies and the possible opportunities they offer, student interaction with AI is not even. Although some students will embrace AI easily because they consider it as a useful and efficient tool, some express reluctance because of a lack of confidence, ethical issues, or incorrect assumptions about the complexity of AI and its effect on academic integrity.

According to the socio-psychological perspective, the AI practices of students depend on the technological availability as well as internal and social factors. Motivation is an essential factor that facilitates the use of AI tools by the students, especially in cases where the technologies are used to promote autonomy, competence, and learning effectiveness. Peer influence also influences AI adoption in terms of social norms, observation, and collaborative learning, and self-efficacy influences the confidence of students in their skills to use AI tools in a productive and responsible manner. All of these socio-psychological elements have their role in determining the behaviors of students who embrace, shun, or abuse AI technologies in education.

Though past research on AI integration in higher education is now quite intensive, there is still little empirical research involved in determining the socio-psychological determinants of AI practices in students of PIHL on the regional level. This can be seen especially in Negeri Sembilan, where institutional context, peer dynamics and student preparedness may have a unique influence on AI adoption behaviors. In line with this, the proposed study is expected to analyze the relevant socio-psychological variables of AI practices among students in Public Institutions of Higher Learning (PIHL) in Negeri Sembilan, namely motivation, peer influence, and self-efficacy. The result is likely to be effective in developing responsible, confident and meaningful uses of AI in higher learning through informed policies, ethical standards, and supportive learning contexts.

LITERATURE REVIEW

Students of higher education are involved in a variety of academic activities where AI technologies are applied to facilitate learning, research, content creation, and problem-solving. According to the existing literature, AI has already become an inseparable part of academic work, especially when it comes to work associated with the development of ideas, structuring of the content, synthesis of the literature, refinement of languages, and proofreading. As Khalifa and Albadawy (2025) note, the use of AI in academic writing is increasingly becoming a common practice because of its ability to enhance clarity, coherence, and ethical writing guidelines. These practices show that AI will improve the quality and efficiency of the academic outputs by students.

There has been a significant proliferation in the use of generative AI applications among higher education learners like ChatGPT, Gemini, and Perplexity. The empirical data indicate that most of the students use AI products to clarify complicated ideas, facilitate the process of literature review, and enhance the productivity in the studies. Mhlanga (2023) notes that over 63 percent of students of higher education are active users of AI technologies in their studies, and Erez and Hazzan (2025) note an even greater prevalence among students in the sphere of computational and STEM-related disciplines than in non-technical ones. Besides, the use of AI is likely to grow as the level of academic development advances, especially in areas with programming and analytical problem-solving (Khalifa and Albadawy, 2025).

In addition to academic writing and content generation, AI is increasingly becoming involved in personalised learning and instructional assistance. A systematic review published in Frontiers in Psychology (2025) has shown that AI-based learning systems tailor the content to the needs of a specific learner, promote skill acquisition, and improve the cognitive and psychological health of learners. In the same way, educational applications like the AI tutor in Khan Academy and the AI assistant in Duolingo powered by AI can deliver immediate feedback and personalised learning paths that are more indicative of the further integration of AI in the traditional learning

setting (Khan Academy, 2025). The trends are indicative that AI practices do not simply focus on productivity improvement but also on personalised and adaptive learning practices.

There is also an increase in the use of AI technologies in institutional and administrative practices in higher education. Frontiers in Education (2025) documents studies in which AI is applied in the automated grading process, optimisation of human resources, and student data in order to aid decision-making. Although such applications enhance the effectiveness of operations, they attract issues concerning data privacy, bias in algorithms, excessive reliance on automated systems (Zheng et al., 2025). These issues have an effect on the perceptions of AI among students and can affect their desire to use AI tools in academia.

Notably, not every student is equally willing to embrace AI technologies. According to Carmi and Yates (2020), not all students are eager to use AI because of the lack of knowledge of its operation, fear of technological barriers, or worries about job loss. These psychological challenges point to the fact that the implementation of AI is not influenced solely by the availability of technology but also by the socio-psychological readiness of the students. The influence of confidence, perceived risk, and social influence are areas of critical importance when it comes to the adoption, avoidance, or misuse of AI.

In general, all current studies show that AI helps to improve academic performance, improve learning, and become more efficient as an institution. Nevertheless, the differences in the AI practices of students indicate that socio-psychological factors also play a huge role in the use of AI technologies. This highlights the importance of testing motivation, peer influence, and self-efficacy in the influence of AI among the students in Public Institutions of Higher Learning (PIHL) in Negeri Sembilan since contextual and social factors might have unique influence on the adoption trends. This paper is intended to describe the amount of AI practices Among Students in Public Institutions of Higher Learning in Negeri Sembilan, Malaysia.

METHODOLOGY

The quantitative cross-sectional survey design was used in this study to assess the use of AI amongst undergraduates in Public Institutions of Higher learning (PIHL) within the Universiti Teknologi MARA (UiTM), Universiti Sains Islam Malaysia (USIM) and Politeknik Port Dickson. Non-probability convenience sampling method was employed because of accessibility and the willingness of the subjects and it gave about 200- 250 respondents. The survey data was gathered via a structured and self-administered questionnaire which was distributed through Google form using WhatsApp platforms, and further personal recruitment was carried out by motivating the respondents to scan a QR code to fill out the survey. The questionnaire had five sections which included demographic factors, AI practices, motivation, peer influence, and self-efficacy and the items were in a five-point Likert scale which were based on the existing literature. The AI practices were operationalised based on frequency, purpose, and AI tools usage methods, such as ChatGPT, Gemini, and Perplexity, and motivation based on the intentions of students to explore and embrace AI technologies, peer impact based on what peers think of the use of AI technologies, and self-efficacy based on how confident students are about using AI tools to achieve their academic goals. Data analysis consisted of descriptive statistics to summarise demographic characteristic and AI-use pattern, Cronbach alpha to test internal consistency, skewness and kurtosis to test the data normality, Pearson correlation analysis to test the relationship between variables and multiple regression analysis to test prediction effects of motivation, peer influence, and self-efficacy on AI practices among PIHL students.

RESULT AND DISCUSSION

Profile of Respondents

The respondent profile (Table 1.0) used in the current study gives a very broad outline of AI use among PIHL students in Negeri Sembilan. In this study, 225 undergraduates of Public Institutions of Higher Learning (PIHL) in Negeri Sembilan were involved. Most of the respondents were female (n = 160, 71.1%), with males representing the 28.9 (n = 65). Majority of the respondents were aged 18-22 (n = 89, 38.6) years, 23-27 (n = 61, 27.1) and 28-32 (n = 47, 20.9) or above. With respect to level of education, the respondents were fairly divided in Degree holders (n = 114, 50.7%) and Diploma holders (n = 111, 49.3). The distribution of the study according to the academic semesters indicated that students attended Semester 1 (n = 13, 5.8%), Semester 2 (n = 44, 19.6%), Semester 3 (n = 37, 16.4%), Semester 4 (n = 38, 16.9%), Semester 5 (n = 28, 12.4%), Semester 6 (n = 56, 24.9%), and Semester 7 The highest percentage of respondents were of Universiti Teknologi MARA (UiTM) (n = 77, 34.2), Universiti Sains Islam Malaysia (USIM) (n = 74, 32.9), and Politeknik Port Dickson (n = 74, 32.9). Regarding use frequency of AI, almost half of the respondents (n = 108, 48% said they used AI frequently, 18.7% said they used it occasionally or frequently, 8.4% said they used it rarely, and 6.2% said they used it very rarely (n = 14). ChatGPT (n = 112, 49.8%), Gemini (n = 68, 30.2%), Perplexity (n = 43, 19.1%), and CoPilot/Microsoft Copilot (n = 1, 0.4% are the most popular tools among respondents using AI. These demographic factors offer a

broad context in which AI practices can be followed among PIHL students in Negeri Sembilan and point at differences in the frequency of the use between the genders, ages, academic level, institution and the preference toward the AI tools.

TABLE 1.0

PROFILE OF RESPONDENTS (N=225)

PROFILE	CATEGORY	FREQUENCY	PERCENTAGE (%)
GENDER	MALE	65	28.9
	FEMALE	160	71.1
AGE	18-22 YEARS OLD	89	39.6
	23-27 YEARS OLD	61	27.1
	23-27 YEARS OLD	47	20.9
	33 AND ABOVE YEARS OLD	28	12.4
EDUCATIONAL BACKGROUND	DIPLOMA	111	49.3
	DEGREE	114	50.7
YEAR OF STUDY	SEMESTER 1	13	5.8
	SEMESTER 2	44	19.6
	SEMESTER 3	37	16.4
	SEMESTER 4	38	16.9
	SEMESTER 5	28	12.4
	SEMESTER 6	56	24.9
	SEMESTER 7	9	4
INSTITUTIONS	UNIVERSITI TEKNOLOGI MARA (UiTM)	77	34.2
	UNIVERSITI SAINS ISLAM MALAYSIA (USIM)	74	32.9
	POLITEKNIK PORT DICKSON	74	32.9
FREQUENCY OF AI USAGE	VERY RARELY	14	6.2
	RARELY	19	8.4
	OCCASIONALLY	42	18.7
	FREQUENTLY	108	48
	VERY FREQUENTLY	42	18.7
TYPES OF AI USED	CHATGPT	112	49.8
	GEMINI	68	30.2
	PERPLEXITY	43	19.1
	CO PILOT	1	0.4
	MICROSOFT COPILOT	1	0.4

Cronbach's alpha was used to assess the internal consistency and reliability of the AI Practices scale. According to Pallant (2016), a Cronbach's alpha value of 0.60 or above indicates acceptable reliability, values between 0.60 and 0.80 indicate good reliability, and values above 0.80 represent excellent reliability. As shown in Table 1.2, the AI Practices construct recorded a Cronbach's alpha coefficient of 0.911, demonstrating excellent internal consistency among the ten items (B1–B10). This indicates that the items consistently measure students' AI practices in academic contexts. In addition, the skewness value of −0.862 and kurtosis value of −0.049 fall within the acceptable range of ±2, suggesting that the data are approximately normally distributed and suitable for parametric statistical analysis. Overall, the reliability and normality results confirm that the AI Practices scale is both dependable and appropriate for subsequent correlation and regression analyses in this study.

TABLE 1.2

RELIABILITY TEST

Variables	Number of Items	Skewness	Kurtosis	Cronbach's Alpha	Reliability Assumed
AI Practices Among Students in Public Institutions of Higher Learning in Negeri Sembilan, Malaysia	10	-0.862	-0.049	0.911	Excellent

Mean and Standard Deviation

Three interpretative levels were established to assess the extent of AI practices and their associated factors based on mean score ranges: 1.00–2.50 (low), 2.51–3.50 (moderate), and 3.51–5.00 (high). As presented in Table 3, the findings indicate that undergraduate students in Public Institutions of Higher Learning (PIHL) in Negeri Sembilan demonstrate a high level of AI practices, with a mean score of 4.10. This suggests that students frequently and actively utilise AI tools in their academic activities. Similarly, students reported a high level of motivation towards the use of AI in academic contexts (mean = 4.09), indicating strong willingness and interest in adopting AI technologies to support learning. Peer influence also recorded a high mean score (mean = 4.03), highlighting the significant role of peers in encouraging and normalising AI usage among students. In addition, self-efficacy related to AI use was found to be high (mean = 4.10), reflecting students' confidence in their ability to use AI tools effectively and responsibly. Overall, the consistently high mean scores across AI practices, motivation, peer influence, and self-efficacy indicate a positive acceptance and widespread use of AI technologies among PIHL students in Negeri Sembilan, underscoring the growing integration of AI in higher education learning practices.

TABLE 1.3

LEVEL OF MEAN SCORE RANGE

Mean Score Range	Level
1.00 - 2.33	Low
2.34 - 3.57	Medium
3.58 - 5.00	High

TABLE 1.4

MEAN AND STANDARD DEVIATION

Variable	Mean	Standard Deviation	N
AI Practices Among Students in Public Institutions of Higher Learning in Negeri Sembilan, Malaysia	4.1040	0.72791	225

CONCLUSION

This research involved the study of artificial intelligence (AI) practices in undergraduate students in Public Institutions of Higher Learning (PIHL) in Negeri Sembilan, Malaysia. The results prove that students show high rates of engagement with AI tools in their studies, which means that AI has become a part and parcel of modern learning. AI applications like ChatGPT, Gemini and Perplexity are commonly used by students to assist in activities like retrieval of information, development of content, finding solutions to problems and improving learning. The popularity of AI tools implies increased acceptance of AI as a useful and effective research tool. The digital form of higher education is changing as students seem more at ease with the introduction of AI technologies into their learning programs. Such results imply the significance of institutional awareness when it comes to the distribution of AI usage among students. On an institutional level, the findings highlight that higher education institutions need to develop effective guidelines on AI literacy, ethical principles and frameworks to facilitate responsible and useful AI utilisation. These steps are necessary to make sure that AI practices can be beneficial to the academic development and the maintenance of academic integrity. Although this study has its contributions, it is confined to PIHL students in Negeri Sembilan and the study design is quantitative. The present study can be further elaborated in the future through analyzing AI practices in a variety of institutional settings and use of qualitative or mixed-method research to deepen the understanding of AI experiences of students in higher education.

REFERENCES

Carmi, E., & Yates, S. J. (2020). What do digital inclusion and data literacy mean today? *Mediating Misconceptions: Exploring public discourses on artificial intelligence.* https://www.researchgate.net/publication/341714379

Erez, M., & Hazzan, O. (2025). AI engagement in STEM education: Disciplinary differences in usage trends. *Computers & Education Journal, 195*, 105827.

Frontiers in Psychology. (2025). Personalised AI-powered learning: A systematic review. *Frontiers in Psychology, 16*, Article 1146293.

Frontiers in Education. (2025). AI in higher education administration: Challenges and ethical considerations. *Frontiers in Education, 10*(1), Article 934187.

Khalifa, M., & Albadawy, E. (2025). AI tools in academic writing: Ethical implications and structural enhancement. *ScienceDirect*. https://www.sciencedirect.com/

Khan Academy. (2025). *AI tutor and real-time feedback in education*. Retrieved from https://www.khanacademy.org

Mhlanga, D. (2023). Artificial intelligence in higher education: Usage patterns among students. *Education and Information Technologies, 28*, 193–212.

SpringsApps. (2024). Main AI trends in education 2024. https://springsapps.com/knowledge/main-ai-trends-in-education-2024

Zheng, Y., Huang, K., & Wang, T. (2025). *Ethical implications of AI in higher education administration*. *Frontiers in Education*. https://www.frontiersin.org/