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THE FACTORS DRIVING CHATGPT ADOPTION AMONG UNIVERSITY STUDENTS IN MALAYSIA: A CONCEPTUAL ANALYSIS

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Abstract: As generative AI technology, especially large language models such as ChatGPT, rapidly come into common use, they are changing the way that learning occurs in higher education. Research across the globe has begun exploring how students are adopting generative AI technology; however, there is still a limited understanding of what drives students' adoption of generative AI technology in lower resource developing higher education environments. Currently, most research on students' adoption of generative AI technology relies on traditional technology acceptance models and empirical correlation studies. While these studies do provide some insight into students' adoption of generative AI technology, there is a significant lack of integration of the psychological capabilities of the learner and the social learning environment in which students learn. In response to this gap, the purpose of this conceptual paper is to develop an integrative framework to explain how university students in Malaysia will adopt ChatGPT. Building on the Technology Acceptance Model and Social Cognitive Theory, the proposed model includes perceived usefulness, self-efficacy and social influence as important antecedents of ChatGPT adoption. The proposed model fills a critical gap in the literature by contextualising technology acceptance regarding the unique characteristics of conversational AI tools. The proposed model has practical applications in helping universities, educators and policymakers to effect ethical, effective and meaningful pedagogical integration of AI technology in Malaysian higher education. Finally, the paper describes the research relevance of the proposed model and offers suggestions and future directions for empirical validation.

Keyword: Generative artificial intelligence, ChatGPT adoption, technology acceptance model, social cognitive theory, Malaysia higher education

INTRODUCTION

The integration of artificial intelligence (AI) within higher education has increased dramatically over the last 10 years, due to rapid development within machine learning, natural language processing, and data analytics. Universities globally have started incorporating AI-based systems to enhance teaching, learning, evaluation and administrative functions. A major distinction between AI-based learning, particularly generative AI systems such as ChatGPT, compared to traditional forms of educational technology is that they offer a new paradigm of interacting with computers within the context of education. Previous forms of educational technology have served only as means of storing or managing educational content. In contrast, generative AI systems actively contribute to the learning process, able to generate human-like text (i.e. written responses), interact through an interactive dialogue (i.e. back and forth question and answer), and provide timely responses that pertain to the specific contexts within which the students are learning. With these systems' capabilities, students can effectively use generative AI systems not only as sources of information, but also as "cognitive partners" when

developing written responses, solving problems, brainstorming ideas, and researching (Crompton & Burke, 2023; Kasneci et al., 2023).

From the perspective of how students learn, generative AI will likely change the cognitive processes and strategies used by students. Research has displayed that conversational AI supports self-regulated learning by offering timely and relevant feedback, facilitating scaffolding of more advanced, complex tasks, and sustaining the iterative development phase of students' work (Baidoo-Anu & Ansah, 2023; Mustafa et al., 2024). At the same time, scholars caution that if heavy reliance upon outputs produced by generative AI continues to proliferate, students who depend significantly upon these systems to produce their outputs may not engage in deeper levels of cognitive engagement with their work, strong critical thinking skills, or create original knowledge (Bond et al., 2024; Kasneci et al., 2023). By having the potential to strengthen learning opportunities and at the same time introduce concerns regarding the potential for over-dependence on generative AI, a focus on 'surface' learning by students and shifts related to the development of academic skills, generative AI utilisation by institutions of higher education is creating a tension between the benefits it provides and the concerns it raises.

As such, the global adoption of ChatGPT continues to challenge higher education institutions (HEIs) to both exploit the opportunities it offers while balancing the concerns it raises about academic integrity, plagiarism, authorship confusion, data security issues, and the ethics of AI use. Institutions are developing divergent policy responses, such as outright bans or cautious implementation of AI technologies within their respective academic programs (Chan & Hu, 2023; Kasneci et al., 2023). This tension reveals the complexity of developing an HEI adoption strategy for ChatGPT, as it is not only a technical decision to be made based on institutional infrastructure but also an outcome of an HEI's culture and ethos, including the context of the behaviours of individual instructors, and the social and organisational readiness of the institution to embrace the adoption of generative AI.

While digital transformation is an important aspect of Malaysia's national strategic agenda, the introduction of generative AI within Malaysian exemplary educational settings has been both successful and uneven in its implementation. Malaysian HEIs continue to be exposed to emerging global trends in AI, however, the readiness of students to use ChatGPT differs based on their level of digital literacy, confidence in using generative AI, disciplinary norms and expectations, and clarity surrounding the directions given by their institution regarding AI use. Generally, most Malaysian students have a sense of curiosity about generative AI and a positive attitude toward using it, however, they continue to have questions about the appropriate boundaries of its uses and their own abilities to use generative AI in a manner that is effective and ethical (Mustafa et al., 2024). Variability in institutional policies and the attitudes of instructors concerning AI also contribute to widespread variability in the adoption of generative AI by Malaysian HEIs, thus, the need to study the adoption of generative AI in HEIs should extend beyond simple frequency of use.

Although there is an increasing interest in research related to the adoption of ChatGPT, the existing literature primarily represents an extension of research associated with prior e-learning and educational technology

adoption studies. Most of these studies have predominantly relied upon traditional acceptance models or behavioural intention frameworks. While acceptance models are a useful starting point for examining the adoption of generative AI, they may oversimplify the unique features of generative AI, as the nature of generative AI allows for the development of cognitive influences that are independent of students' use of generative AI for academic writing and, in many cases, generate cognitive influences that may surpass the cognitive functioning of the students using generative AI as a learning tool or as an academic writing tool. Therefore, a conceptualisation framework developed from established theories, but specifically tailored for the generative AI context, will assist researchers in developing a better understanding of the adoption of generative AI in HEIs and will assist policymakers and academic developers in creating coherent policies and pedagogical frameworks for the effective and ethical use of generative AI among students in Malaysian HEIs.

PROBLEM STATEMENT AND RESEARCH GAP

Although technology acceptance research has extensively examined the adoption of digital learning technologies, comparatively little attention has been given to understanding the adoption of generative AI tools such as ChatGPT. In recent years, there has been a growing trend towards the use of generative artificial intelligence tools like ChatGPT as educational technology to assist students in completing assignments and providing access to information. A limited number of studies published on this topic have focused primarily on technology acceptance frameworks such as the Technology Acceptance Model as well as its extensions, while models have focused on both perceived usefulness and perceived ease of use as key components that influence technology adoption (Davis, 1989; Venkatesh et al., 2003). These components of the TAM model continue to have value; however, they may not represent the full extent of how generative AI has the potential to assist students in the learning process because they were originally designed to explain acceptance of traditional educational technologies rather than generative AIs with mobile applications.

Unlike many of the traditional educational technologies that are designed to allow students to obtain information or complete specific tasks, ChatGPT is an educational technology designed for students to create, formulate and critically assess their prompts and responses throughout the educational process, including ethical decision-making (Kasneci et al., 2023; Munaye et al., 2025). As a result, the factors that influence technology adoption when using a generative AI tool will be much broader than just perceived usefulness and perceived ease of use for students. In addition to having the perception of usefulness and ease of use, in order to adopt generative AI tools students will also need to possess the confidence to use AI tools in a responsible manner, as well as the ability to operate within the social and institutional influences on the adoption of AI in the educational process.

There continue to be limitations within the current technology acceptance literature, as it has been demonstrated that most of the existing empirical research on the acceptance of technology in education does not take into consideration the social-cognitive dimensions that significantly affect the acceptance of generative AI in education. Two dimensions have been identified that need to be researched further. The first dimension is

self-efficacy, which represents students' perception of their ability to effectively evaluate, interpret, and use AI-generated responses. As generative AI utilises increasing academic engagement, students need to develop critical thinking, judgment, ethical responsibility, and critical utilisation of AI-produced content from generative technology (Crompton & Burke, 2023; Mustafa et al., 2024). Students with low levels of self-efficacy may avoid using generative AI systems altogether or use generative AI without examination of the materials produced, which directly influences their ability to learn at deeper levels and raises concerns regarding academic integrity.

Additionally, social influence is not well represented in many current models developed for the adoption of generative AI in higher education. For many students, the ability to utilise generative AI is shaped by the norms and attitudes of peers, faculty, and the overall culture within these institutions of higher education. The presence of positive norms, guidance, and institutional policies creates an environment conducive to the adoption of a product. In contrast, the overall uncertainty about how to appropriately and ethically utilise generative AI systems has acted as a barrier to engagement with this technology (Chan & Hu, 2023; Bond et al., 2024). These social components are critical to understanding the process by which generative AI is accepted by students, yet have not been included in previous research on generative AI adoption.

This study reflects the need to bridge existing gaps within the Malaysian higher educational context. Studies conducted on Malaysian students have largely focused on issues relating to their individual attitudes, perceptions, or intentions toward the use of AI products within their specific institutions, with very few studies examining these factors collectively. As a result, there is a lack of theoretical understanding about how technology, personal, and social factors work together to influence Malaysian students' acceptance of generative AI products. Furthermore, various governmental regulations regarding the governance of generative AI, institutional digital infrastructures, access to AI by faculties and degree of faculty readiness, each creates a different environment for generative AI adoption at the institution. To fill the gaps, this study proposes a theoretical model of generative AI to understand its impact on ChatGPT. The model is based on Technology Acceptance Model combined with Social Cognitive Theory. More specifically, the model offers three core elements contributing to generative AI utilization among Malaysian students, i.e. perceived usefulness, self-efficacy and social norms. With the integration of these core components, the proposed model provides an innovative approach to examining generative AI within an academic context by expanding traditional technology acceptance model to include a socio-cognitive framework. With an innovative theoretical model, this study creates a theoretical basis for generating future empirical studies regarding effective and ethical use of generative AI within Malaysian higher educational contexts.

LITERATURE REVIEW

Perceived Usefulness

Perceived usefulness is one of the most consistently verified predictors of generative AI usage by students within the academic context. As a result, students' experience with generative AI influences their perceptions of efficiency in completing academic assignments and affect the likelihood that students will adopt and use generative AI in future iterations of their academic experience. Recent literature suggests that students find value in using ChatGPT to create content and refine it based on previous efforts, generate and organise ideas, develop personal understanding and self-regulated learning strategies, and, thereby, use ChatGPT for improving performance (Deng et al., 2025). Further, there are emerging trends pointing to the use of task-contingency (i.e., as a greater relative advantage for brainstorming, language integration, and creativity than for producing accurate, truthful results). A number of literature reviews examining the use of ChatGPT in higher education demonstrate that both students' inability to perceive ChatGPT's usefulness as performance-enhancing and quality concerns (i.e., hallucinations, references for materials that are not accurate) are conflated when determining to what degree perceived usefulness will influence their decision to incorporate generative AI into the academic experience, and how institutional norms may either support or inhibit the incorporation of generative AI perceived usefulness into future academic decisions (Baig & Yadegaridehkordi, 2024). Based on the findings presented in this literature review, it is suggested that future conceptual models assume that perceived usefulness is one of the major armies that advance an individual's efforts to utilise generative AI, and that students perceived usefulness of generative AI is determined by their individual experiences with the quality of generative AI output and the demands of academic assessment and instructor expectations.

Self-Efficacy

The importance of self-efficacy in AI generative adoption is becoming increasingly recognised as the key capability-based antecedent in students' successful use of generative AI solutions. While students may have access to generative AI solutions and tools, they will only be able to successfully complete a task using generative AI if they feel self-efficacious in prompting, evaluating, and modifying the AI-generated outputs. In addition, recent empirical studies show the relationship of ChatGPT-related self-efficacy with the increased level of purposeful engagement with, regulated reliance upon, and intentions to use ChatGPT for learning activities (Tailor & Tailor, 2025). Furthermore, students who have self-efficacy belief in the use of ChatGPT are more likely to experiment with the AI, utilise it in their workflow, and continue to use it in the face of occasional poor-quality generative outputs. Similarly, the systematic and conceptual reviews support the idea that learners' readiness and competencies (including their ability to assess information critically and use ethical considerations) are critical to success in AI-enabled learning environments. Thus, self-efficacy may play a much larger role than is often thought (Baig & Yadegaridehkordi, 2024). This is very relevant for Malaysian university

students, as they may be exposed to generative AI feeds and digital literacy to varying degrees, as well as receive varying levels of support and guidance from their institutions. Therefore, self-efficacy may serve as a critical point of differentiation between students who have self-efficacy in adopting generative AI and those students who do not.

Social Influence

Students use AI tools in accordance with the norms of using the technology. While previous educational technologies have had various levels of social influences, generative AI's specific purpose as a tool used by learners is more norm sensitive than many previous technologies. In other words, student norms or expectations are at least part of how students decide whether or not they will be allowed to use an AI tool (like ChatGPT) for educational purposes. Research has indicated that social influences, through student norms, instructor cues, and the perceived legitimacy of the use of generative AI, are significant factors in determining a student's intention to use ChatGPT for educational purposes (GC et al., 2024). At the institutional level, an institution's failure to provide clear or consistent guidance or assessment criteria may reduce a students' likelihood of using generative AI, even if they think AI is beneficial, because uncertainty increases students' perception of the risk associated with using it (e.g., being accused of wrongdoing). However, providing clear and explicit guidance and policy may help a student feel supported in using AI responsibly and, in turn, enhance the likelihood that the student will adopt the AI tool by providing them with normative support to use the tool responsibly (Budhathoki et al., 2024). Thus, social influence can be conceptualised as not only a direct influence on a students' decision to adopt the AI tool, but also as part of the context affecting how a student interprets the benefit of the AI tool and whether the benefit translates into usage.

ChatGPT Adoption in Higher Education

Recent studies on adoption demonstrate its multi-dimensionality, including actual use, intention to use, continued use and loyalty behaviour. From a systematic literature review of ChatGPT in higher education, it is observed that different studies highlight the same determinants (e.g.: perceived usefulness and expectancy beliefs) but vary in terms of context and measurement strategies (Baig & Yadegaridehkordi, 2024). Cross-context studies looking at how concerns regarding accuracy, integrity, and anxiety will influence adoption demonstrate the multifaceted nature of adoption, whereby the act of adopting is influenced by not only the benefits associated with it but, also, the risks and norms (Budhathoki et al., 2024). The combination of the evidence from the systematic literature review and cross-context studies demonstrates the need for an integrated conceptual model of beliefs or values (perceived usefulness) and capability beliefs (self-efficacy) and normative influences (social influence) for generative AI adoption in Malaysia, for both undergraduate and postgraduate students.

RESEARCH QUESTIONS

Based on the background of this study, together with the identified issues and research gaps, this study aims to address the following research questions (RQ):

RQ1: How can perceived usefulness be conceptually positioned as a factor influencing ChatGPT adoption among Malaysian university students?

RQ2: How can self-efficacy be theorised as a factor influencing ChatGPT adoption among Malaysian university students?

RQ3: How can social influence be integrated into a conceptual framework of ChatGPT adoption among Malaysian university students?

RESEARCH OBJECTIVES

In line with the research questions, this study formulates both general and specific research objectives (RO), as follows:

General Objective

The primary objective of this study is to develop a conceptual framework for determining how student perceptions of utility (perceived usefulness), confidence in their ability to use technology (self-efficacy), and pressures from friends, family and instructors (social influence), affect their decisions about whether or not to adopt ChatGPT as part of their academic experience, at Malaysian institutions of higher education. The results of this study will contribute to the understanding of the key factors that influence the acceptance of generative AI technologies by undergraduate students, as well as provide valuable information for the development of strategies and policies designed to support institutional purposes through pedagogical practices, AI governance and other related efforts.

Specific Objectives

Based on the research questions, the research objectives state the main goals and intentions of this study, which are specified as follows:

RO1: To examine the relationship between perceived usefulness and ChatGPT adoption among Malaysia university students.

RO2: To examine the relationship between self-efficacy and ChatGPT adoption among Malaysia university students.

RO3: To examine the relationship between social influence and ChatGPT adoption among Malaysia university students.

PROPOSITIONS OF THE STUDY

Based on the research objectives and the proposed conceptual framework, the following propositions are formulated:

P1: Perceived usefulness is conceptually proposed as a positive antecedent of ChatGPT adoption among Malaysian university students.

P2: Self-efficacy is conceptually proposed as a positive antecedent of ChatGPT adoption among Malaysian university students.

P3: Social influence is conceptually proposed as a positive antecedent of ChatGPT adoption among Malaysian university students.

SCOPE OF THE STUDY

This study provides a conceptual overview of the undergraduate and postgraduate student populations at Malaysian universities and their access to and usage of generative AI tools, particularly ChatGPT. The purpose of this study is to investigate how students behave and think about using generative AI in their schoolwork, with an emphasis on psychological and social factors that influence students' willingness to use these tools in academic settings. The proposed framework positions perceived usefulness, self-efficacy, and social influence as the independent variables affecting students' adoption of ChatGPT. Although the study focuses on the behavioural and perceptual constructs related to using generative AI instead of the technical or system-level aspects of generative AI tools, it does not differentiate between the specific fields of study, types of institutions (public versus private), and methods of study (e.g., online versus in-person) of the students participating in the study. Furthermore, this study does not assess students' learning outcomes or their compliance with ethical standards. Therefore, this study is considered to be purely conceptual as its goal is to provide a foundation for future empirical research on generative AI adoption among diverse student populations in Malaysia HEIs.

SIGNIFICANCE OF THE STUDY

This study carries both theoretical and practical significance:

Theoretical Significance

The current paper adds to the body of knowledge regarding technology acceptance by extending the Technology Acceptance Model to the use of generative AI in higher education. Additionally, this new model extends beyond a basic understanding of functional usefulness by incorporating constructs such as self-efficacy and social influence which derived from Social Cognitive Theory. By developing this integrative model, this study is responding to the growing demand for more sophisticated models that reflect the multifaceted nature of AI-enhanced learning environments (Bond et al., 2024).

Practical Significance

The proposed conceptual framework of this study provides practical guidance for HEIs administrators and academic professionals looking to integrate ChatGPT ethically. Policymakers should consider using this model to develop policies on how to educate their stakeholders on the role of usefulness perceptions, confidence in the use of AI, and social endorsements when designing training programmes and AI-based curriculums, as well as institutional policies related to AI. Policymakers should also take into consideration the necessity of creating AI literacy and establishing ethical norms related to technology in order to promote equitable access to technology.

PROPOSITIONS DEVELOPMENT

Perceived Usefulness and ChatGPT Adoption

Students are more inclined to not only adopt, but also to continue using ChatGPT if they believe that ChatGPT can enhance their academic performance (i.e., improving the quality of their writing, speeding up their understanding of course material, helping them generate ideas). Recent reviews of the higher education literature reveal evidence from multiple studies that usefulness-related beliefs (e.g., performance gains, learning value, perceived benefits) strongly predict the acceptance and intention to use ChatGPT (Polyportis & Pahos, 2024). Conceptually, perceived usefulness represents students' cost-benefit assessment of using generative AI in their studies, therefore, as the perceived academic value of ChatGPT increases, students' likelihood to adopt ChatGPT increases. Hence, it is postulated that:

P1: Perceived usefulness is conceptually proposed as a positive antecedent of ChatGPT adoption among Malaysian university students.

Self-Efficacy and ChatGPT Adoption

Students who tend to have greater self-efficacy for generative AI will be more likely to adopt ChatGPT because they know that they are capable of producing the best prompts and evaluating the quality of the output, verifying the information and responsibly using the tool. Recent studies demonstrated that self-efficacy has a

positive relationship with behaviour intention and adoption outcomes, particularly when the use of AI requires the user to undertake a critical examination of the AI's output rather than to passively receive the information provided (Tailor & Tailor, 2025). In the Malaysian university environment, where the level of support and preparedness to adopt ChatGPT will differ from programme to programme, self-efficacy will likely explain why some students have developed the confidence to adopt ChatGPT, while others have chosen to take a more cautious approach even though they see some advantages to ChatGPT. Therefore, this study proposed that:

P2: Self-efficacy is conceptually proposed as a positive antecedent of ChatGPT adoption among Malaysian university students.

Social Influence and ChatGPT Adoption

Perceived endorsements by significant others such as peers, instructors, and university policies prompts student adoption of ChatGPT. This is especially important in the case of generative AI, as the ambiguity surrounding academic integrity and what constitutes 'acceptable use' makes normative signalling extremely influential for generative AI tools like ChatGPT. Recent studies have examined students' intentions to utilise ChatGPT within their educational setting and indicate that social influence is an antecedent of students' intention to use ChatGPT, as well as highlighting the role of normative cues on intentions to use ChatGPT (GC et al., 2024). Therefore, enhanced guidance and endorsement of ChatGPT by instructors or through institutional promotion could potentially enhance student adoption of ChatGPT through a reduction of perceived risk and the enhancement of legitimacy. Thus, it is proposed that:

P3: Social influence is conceptually proposed as a positive antecedent of ChatGPT adoption among Malaysian university students.

CONCEPTUAL FRAMEWORK AND UNDERPINNING THEORY

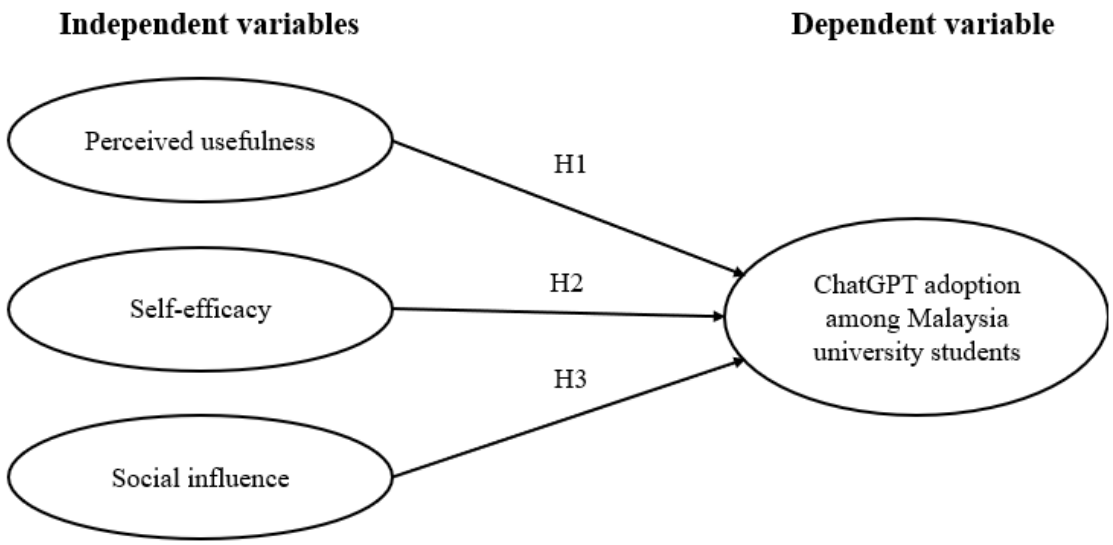
The proposed conceptual framework explains ChatGPT adoption among Malaysian university students by integrating insights from the Technology Acceptance Model (TAM) (Davis, 1989) and Social Cognitive Theory (SCT) (Bandura, 1986). TAM has been widely used to explain technology adoption behaviour, with perceived usefulness and perceived ease of use recognised as key determinants of users' acceptance of technology (Davis, 1989; Venkatesh et al., 2003). Among these constructs, perceived usefulness remains particularly relevant in the context of ChatGPT, as students are more likely to adopt the technology when they believe it can enhance their academic performance through activities such as generating ideas, supporting writing tasks, facilitating problem-solving, and improving learning outcomes (Kasneci et al., 2023).

There are several distinctions between the way in which conversational AIs, such as ChatGPT, are used and how they differ from traditional educational technology. While more traditional learning systems are designed primarily for delivery of information, content management, and access to learning resources, ChatGPT requires a greater degree of participation from students regarding the learning experience itself. When using ChatGPT,

users must construct appropriate prompts to initiate conversation with the AI, interpret and evaluate the AI-generated response, verify that the information provided by the AI is accurate, and determine the way in which they may appropriately utilise the AI-generated output for an academic purpose (Munaye et al., 2025). These behaviours are expected to require a greater degree of engagement, judgement, and critical thinking than is generally required of students when using more traditional educational technologies. Therefore, the conventional model used to evaluate student acceptance of and intention to use, traditional technology may not adequately account for the students' rationale for adopting generative AI technology. To more fully encapsulate the complexities inherent to ChatGPT, the current framework is designed to address these additional factors by extending the traditional discussion of technology acceptance to include the important variables of self-efficacy and social influence. Self-efficacy refers to a student's belief in their ability to use ChatGPT and to accurately assess the trustworthiness of AI-generated information, and to appropriately apply the technology as a support for their learning (Crompton & Burke, 2023; Mustafa et al., 2024). Students who possess high self-efficacy will be more likely to view ChatGPT as a beneficial learning tool, and thus will exhibit a greater willingness to adopt ChatGPT. The current framework also reflects the impact of the social environment in which learning takes place. How students view and use ChatGPT is shaped by the interaction with their peers and the lecturer's attitude toward ChatGPT, as well as by the institution's culture or norms regarding the use of ChatGPT. One example of this influence is the rapidly changing guidelines about the ethical use of generative AI in higher education. Because these guidelines are constantly evolving, it will be critical for teachers to provide clear guidance for students on how to properly utilise the technology, and for students to work together in a positive manner and to have documented policies from the institution regarding how to appropriately and ethically implement new technologies (Chan & Hu, 2023; Bond et al., 2024). On the other hand, if there is a lack of understanding and uncertainty around academic integrity and ethical practices related to using ChatGPT, this may prevent students from accepting or adopting the technology. (Chan & Hu; 2023; Bond et al., 2024.) Therefore, these three elements of perceived usefulness, self-efficacy, and social influence need to be integrated into a more holistic view of the factors that influence student acceptance of ChatGPT, as is currently captured within the traditional technology acceptance model. This new framework suggests that the value that students place on ChatGPT is a function of their perception of the benefits associated with ChatGPT, the extent to which they believe they have the ability (self-efficacy) to utilise it effectively, and the social context in which they utilise ChatGPT. By employing a combined Technology Acceptance Model and Social Cognitive Theory to understand the factors influencing the adoption of generative AI technology within the context of Malaysian universities, this research promises to provide a more complete theoretical view of generative AI adoption. The current conceptual framework is presented in the figure below (see Figure 1).

Figure 1

Conceptual Framework



RESEARCH IMPLICATIONS

This research builds upon technology acceptance and educational technology studies by extending the explanatory framework of the Technology Acceptance Model through the integration of Social Cognitive Theory within the context of generative AI. By placing perceived usefulness and self-efficacy, as well as social influence together, this framework extends models that have typically focused on the functionality of technologies, by suggesting that these factors are joint predictors of adoption for ChatGPT. In particular, by including self-efficacy, this framework addresses a limitation of previous literature on generative AI adoption in that psychological readiness to engage with AI-generated content has not been substantially theorised. Additionally, the framework conceptualises generative AI adoption as a socio-cognitive process and not exclusively as an instrumental decision, therefore, it provides an enhanced level of depth to explain generative AI in relationship to technologies that are interactive and autonomous. This framework can serve as a solid theoretical foundation for further empirical investigations and for conducting comparative studies across disciplines, levels of education, and cultural contexts.

Adoption of generative AI such as ChatGPT has taken centre-stage for universities due to its rapid use within the classroom. Institutions must also understand that generative AI does not only advance efficiency, it can also facilitate higher-order learning, foster creativity, support critical thinking development, and help students cultivate academic skills. In doing so, institutions should consider a model of teaching and learning that integrates generative AI activities and aligns them with intended course outcomes. Providing students with additional discipline-specific guidance on the appropriate use of generative AI is critical to ensuring they understand its potential as a learning support tool rather than as an alternative to independent effort and

intellectual engagement. The results also indicate that students' confidence in the use of generative AI will heavily influence their likelihood of adopting the technology. Consequently, universities must promote AI literacy development within their student populations. Examples of practical initiatives could include providing workshops regarding effective prompt writing, assessing the credibility of AI-generated information, fact-checking methods, responsible use of AI, and academic integrity considerations. These initiatives can be integrated into the university's student orientation programme, digital competency course, or through co-curricular activities so that students are prepared to use generative AI responsibly.

The social and institutional setting where students are situated also influences their connection to generative AI tools. Students typically follow the guidance created by their peers, faculty members, and the university. Uncertainty regarding the proper use of generative AI will prevent students from taking advantage of the technology and create a higher likelihood of misuse. Universities can address these challenges by developing clear and reasonable policies for the use of generative AI in learning, assessment, and research. Such policies could require students to disclose their use of generative AI for submitted assignments, provide guidance on how to cite generative AI materials, and redesign assessments to include critical reflection and independent thought with responsible use of generative AI. Educators have significant influence on students' attitudes to generative AI tools through the modelling of ethical behaviour, maintaining consistency in their advice, and encouraging discussion regarding the opportunities and limitations presented by generative AI. Thus, the combined approach of AI literacy education programmes, articulating a clear policy framework, and promoting supportive pedagogical practices will enable Malaysian higher education institutions to develop a holistic approach to generative AI governance and digital well-being.

CONCLUSION

This conceptual paper aims to improve the understanding of how generative AI will be taken up in Higher Education, particularly within the Malaysian context. The proposed framework in this paper indicates how Malaysian university students' theoretical study of ChatGPT will be affected by three factors: how people think it is useful to themselves; how certain they are in their ability to use it; and how others affect their belief systems regarding this technology. The framework combines elements of two well-known models: Technology Acceptance Model and Social Cognitive Theory. In doing so, this framework advances on the existing literature surrounding technology adoption. In particular, much research into AI adoption has previously focused on the personal attributes of users (i.e., usability), while this framework acknowledges that the environment surrounding users (e.g., institution, society) also shapes their attitudes towards using generative AI technology. These factors are combined to create a more integrated view of user engagement with generative AI technology and therefore provide more insight into how to adopt and develop the use of generative AI technologies in Higher Education. Additionally, as this study is conceptual, the framework presented will require empirical testing and refinement before it can be used to inform effective policies and practices for the appropriate use of generative

AI Technologies in higher education. Finally, further investigations of the framework should occur at different institutions, disciplines and demographics to validate its applicability and produce the evidence that can inform best practices for generative AI use in higher education.

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