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Factors Influencing ChatGPT Utilisation in Higher Education: A Proposed Empirical Study Based on the UTAUT Framework

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Abstract

Objective: To examine the effects of performance expectancy, effort expectancy, social influence, and facilitating conditions on university students' behavioural intention to use and actual use of ChatGPT in higher education, while assessing the moderating role of ethical awareness. **Methods:** The proposed study adopts a quantitative cross-sectional survey design. Data will be collected from university students and analysed using structural equation modelling. Guided by the Unified Theory of Acceptance and Use of Technology, the model evaluates the technological, social, institutional, and ethical factors influencing students' adoption and use of ChatGPT. **Results:** The proposed model suggests that students' behavioural intention and actual use of ChatGPT are influenced by its perceived usefulness, ease of use, social influence, and the availability of institutional and technological support. Ethical awareness is expected to moderate these relationships because ChatGPT use may raise concerns related to academic integrity, plagiarism, overreliance, privacy, fairness, and reduced critical thinking. **Conclusion:** The study contributes to the literature by integrating technology acceptance with responsible AI use in higher education. It provides a framework for examining ChatGPT adoption patterns, students' motivations for using the technology, and its implications for academic integrity, while offering practical guidance for universities, educators, and policymakers in developing AI literacy programmes and responsible-use policies.

Keywords: ChatGPT, higher education, generative artificial intelligence, UTAUT, student adoption, academic integrity, ethical awareness

Introduction

AI has emerged as a significant part of modern-day higher education. Digital learning platforms are increasingly used, automated feedback systems are widely deployed, intelligent tutoring software is everywhere, learning analytics dashboards are in use, and virtual

communication tools are now being utilized in universities to aid teaching and learning. This change has been exacerbated by the rise of generative AI, which can create new materials instead of just storing, sharing, and organising existing ones. One of the most prominent examples of this is ChatGPT. It can create explanations, summaries, outlines, examples, codes, translations, and academic style text when prompted by the user. This has made it an increasingly popular learning support tool for students and a subject of discussion for educators, as cited by Kasneci et al. (2023) and Strzelecki (2023).

The use of ChatGPT in higher education is no surprise. The academic demands, consultation time, language difficulties and complexity of the theoretical concepts are often obstacles that students encounter. ChatGPT can give instant responses, break down complex information, offer ideas for how to organize assignments, and feedback on writing. The tool can also be used as a private and low-burden aid for students who might not be inclined to pose questions in class. ChatGPT can also be helpful for educators in preparing lessons, generating questions, designing feedback, and creating examples or cases. The possibilities demonstrated above indicate that generative AI can play a role in personalised and flexible learning, provided it is used wisely (Archibald & Clark, 2023; Kim, 2023).

Meanwhile, ChatGPT has raised major concerns on the definition of learning and academic honesty. Students might be tempted to submit AI-generated work as their own as it can produce fluent text in seconds. This poses a challenge to educators, who are required to identify student originality and separate it from writing produced by AI. Generative AI poses a threat to traditional assessment practices, particularly to the emphasis on final products over learning processes in take-home assignments and written work (Cotton et al., 2024; Rudolph et al., 2023). Students using ChatGPT without critical evaluation can also inadvertently be exposed to

inaccurate information, fabricate references, be influenced by social biases or engage in superficial learning (Fecher et al., 2023; Li et al., 2023).

This is because the introduction of ChatGPT can't be attributed solely to technology. The usefulness of the tool, ease to use, encouragement from peers and lecturers, and policies, infrastructure and training from the institution all affect students' utilisation. The dimensions are similar to Unified Theory of Acceptance and Use of Technology (UTAUT) explaining technology acceptance in terms of performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). UTAUT has been employed in many studies of educational technology adoption and offers a suitable theoretical underpinning for the investigation of ChatGPT adoption as it links individual perceptions with social and organisational support.

But the introduction of ChatGPT is unlike some previous innovations in the field of education. LMS, video conferencing and digital libraries are primarily used to facilitate access to learning materials or communication. The use of ChatGPT is more ethically complex when it comes to creating academic content. A student can use ChatGPT to learn something, or he or she can use it to write an assignment, but no learning occurs. Thus, it is necessary to incorporate acceptance factors and ethical awareness into a model of ChatGPT use. UNESCO's recommendations for the use of generative AI in education highlight the importance of developing human-centred policies, safeguarding learners, transparency, and governance before widespread adoption of generative AI in learning environments (Miao & Holmes, 2023).

This paper presents an empirical study to explore the factors which influence the utilization of ChatGPT by students in higher education. In particular, it explores how performance expectancy, effort expectancy, social influence, and facilitating conditions influence the

behavioural intention and actual use. It also suggests the ethical awareness as moderator to increase responsible use. The paper is designed to offer a framework for research that can be tested quantitatively and will be applicable to universities in creating programmes on AI literacy, academic integrity policies, and supportive learning environments.

Literature Review

Generative AI: AI systems that generate content like text, images, code, audio, and summaries from user input. ChatGPT is a large language model-based generative AI text-based tool. It can be trained using a massive amount of text, and can be used to generate or predict text patterns and interact with users via natural language prompts. The ability to engage in conversations makes ChatGPT appealing in higher education, allowing students to ask questions using natural language and get instant answers. Unlike conventional search engines, ChatGPT isn't just about listing sources, it arranges information into explanatory text. It is a very useful feature, but at the same time, it can be dangerous as the answer might be incomplete or wrong (Kasneci et al., 2023; Yan et al., 2023).

The potential benefits of ChatGPT in education have been identified through research. The first is ChatGPT's ability to offer tailored learning experiences based on the learner's input and comprehension level.The first is that ChatGPT can help with personalized learning by adjusting its responses to the prompt and understanding of the learner. A student can request a simple explanation, a detailed comparison or a practical scenario. Second, ChatGPT can be used to offer support right away, thus benefiting students when they're studying independently or outside of standard office hours. Third, it could be more helpful for students who require language support, writing help, and/or more explanation. Fourth, It can be used to create teaching materials, discussion points, and formative feedback for educators (Ali et al., 2024; Sandu et al., 2024).

Although these advantages are notable, there are also significant drawbacks which are discussed in the literature. ChatGPT does not comprehend information as humans do, but rather produces responses that are likely based on language patterns. This can result in mistakes, inaccurate facts, speculative statements, and bogus citations. Students who are not digitally and information literate may take such responses for granted without checking. Furthermore, ChatGPT can produce entire essays or parts of assignments, making it a topic of discussion about who is the author, where did the information come from, and the distinction between helping and cheating. Due to the shortcomings of traditional plagiarism detection, Cotton et al. (2024) suggested a paradigm shift in the practice of assessment and academic honesty in universities.

Ethics are particularly critical in educational institutions of higher learning. Acosta-Enriquez et al. (2024) found that students' knowledge, attitudes, and perceived ethics are important in understanding how they use ChatGPT. Students' integrity is also key to the adoption of generative AI, as Bouteraa et al. (2024) agreed. Students who don't know what they can and cannot do may be using ChatGPT in a manner that is contrary to the academic rules. However, when students know what is expected of them ethically, they can use ChatGPT to brainstorm, provide feedback on, or revise their own writing, but they will still be responsible for their own content.

Another big problem is the institution's response. At first, some universities were thinking of banning or using tools to detect ChatGPT. But many academics today believe that prohibition is a non-starter as students can use AI tools outside of university environments. Rather, institutions must establish clear policies, provide training on AI literacy, disclose requirements, and design assessment systems to emphasize process, reflection, and real-life application (Miao & Holmes, 2023; Wang et al., 2023). Using ChatGPT is not only a student behaviour, but also an

indicator of institutional readiness.

Theoretical Foundation: UTAUT

Venkatesh et al. (2003) created the Unified Theory of Acceptance and Use of Technology (UTAUT) that explains why people accept and adopt new technologies. The model was developed based on a combination of the theories, Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), Motivational Model, and Innovation Diffusion Theory. Performance expectancy, effort expectancy, social influence and facilitating conditions are proposed by UTAUT to impact both behavioural intention and use behaviour. The theoretical approach has been used extensively in education, as it helps to understand the attitudes of students and teachers towards the introduction of new learning technologies.

Performance expectancy is the extent to which an individual thinks that a technology will help performance. In relation to ChatGPT, this means that students think that the tool can benefit learning effectiveness, learning productivity, comprehension of course material and writing quality. Effort expectancy is the perceived ease of use of the technology. The conversational interface of ChatGPT could raise the effort expectancy as students do not require advanced technical expertise to engage with it. The social influence is the degree of influence of important persons like classmates, lecturers and institutions on students' choice of the tool. Facilitating conditions are the resources, knowledge, support, and infrastructure that are available to effectively use technology.

The UTAUT model is appropriate for the proposed study as it encompasses both attitudes of individuals and the environmental support. While most students might think that ChatGPT is helpful and convenient, its adoption can still hinge on the attitudes of lecturers, peers and the university's policies. Recent research based on the UTAUT or UTAUT2 has demonstrated that

social influence, habit, learning value and performance-related beliefs can influence students' intentions for using ChatGPT (Benard et al., 2024; GC & Bhatta, 2024). These results indicate that UTAUT is still relevant to the understanding of adopting generative AI.

However, UTAUT cannot completely cover the ethics of generative AI. Previous technologies were mostly not the ones that completed students' academic work as measured by UTAUT. ChatGPT does. Thus, the proposed study makes an extension to the UTAUT with including the construct of ethical awareness as a moderating construct. Ethical awareness is the students' knowledge of academic honesty, disclosure of AI use, privacy, responsible prompting, and verifying AI-generated information. This addition means that the study can analyze whether students are using ChatGPT, as well as if they are likely to do so in an appropriate way.

Hypotheses Development

Performance expectancies are likely to be important factors in explaining students' behavioural intentions to use ChatGPT. The tool is likely to be adopted when students think it can enhance their academic achievements or learning effectiveness. In higher education, performance expectancy can encompass quicker concept understanding, enhanced writing clarity, better assignment planning, more efficient revision, and higher confidence. ChatGPT can assist with these outcomes by offering explanations, examples, outlines and feedback. Strzelecki (2023) determined that students' acceptance of ChatGPT is closely related to the perceived usefulness, and other research revealed that perceived academic benefits are key factors in the adoption of generative AI (Bouteraa et al., 2024; GC & Bhatta, 2024). For this reason, students who endorse that ChatGPT improves academic performance should be more inclined to use ChatGPT. For this reason, students that think ChatGPT improves academic performance are supposed to have a stronger intention to use ChatGPT.

H1: Performance expectancy positively influences students' behavioural intention to use ChatGPT.

Effort expectancy is also expected to influence behavioural intention. Technology that is easy to use will be more likely to be accepted, including among students of varying digital competency. Because the user can speak to ChatGPT using natural language, it's relatively easy to access and use. It is not such a specialised software that it needs to be trained in a complex way to use it. But good and mature use does still need fast literacy, source checking and knowledge of the limits of the sources. The interactive and accessible design of AI chatbots has educational potential as mentioned by Kim (2023). If students think ChatGPT is easy to use and easy to understand, they are more likely to plan to use it to learn.

H2: Effort expectancy positively influences students' behavioural intention to use ChatGPT.

Another factor that matters is social influence. Students are likely to experience digital tools from their fellow students, friends, lecturers or online academic communities. Peer usage of ChatGPT for study support can lead to other students using it as well. Students can feel more confident if they are encouraged to use the material responsibly and are told that there are boundaries beyond which it should not be used. However, if lecturers are not clear or negative, students may choose not to use the tool or use it covertly. Benard et al. (2024) noted that there is a possibility of herd behavior affecting the use of ChatGPT in the academic environment. One can therefore assume that social influence would have an impact on students' intention.

H3: Social influence positively influences students' behavioural intention to use ChatGPT.

Facilitating conditions are the resources, infrastructure, and support that empower students to use ChatGPT effectively. They can be internet access, digital device, training workshops, institutional AI policies, lecturer guidance, and technical support. Students may be more inclined

to use ChatGPT if they are aware of its proper usage and when the expectations of the institution are defined. Alshammari and Alshammari (2024) discovered that the facilitation of conditions influences the adoption of ChatGPT in higher education. Furthermore, policies and resources within the university can decrease uncertainty and promote clear usage (Wang et al., 2023).

H4: Facilitating conditions positively influence students' behavioural intention to use ChatGPT.

Behavioural intention is expected to influence actual utilisation. According to UTAUT, individuals who intend to use a technology are more likely to engage in actual use (Venkatesh et al., 2003). In this study, ChatGPT utilisation refers to the frequency and purposes of use, including concept explanation, writing support, brainstorming, grammar checking, assignment planning, coding assistance, and revision. Students with stronger intention are expected to use ChatGPT more frequently for academic tasks.

H5: Behavioural intention positively influences ChatGPT utilisation among higher education students.

The relationships between the UTAUT factors and utilisation can also be mediated using behavioural intention. In other words, performance expectancy does not directly lead to use, but it instead increases intention to use. Likewise, ease of use, social influence and facilitating conditions can lead to the students' intention, and the intention can cause the actual behaviour. This mediation process is in line with the technology acceptance theory.

H6: Behavioural intention mediates the relationships between performance expectancy, effort expectancy, social influence, facilitating conditions, and ChatGPT utilisation.

Lastly, ethical awareness is suggested as a moderator. While students are eager to use ChatGPT, their usage and ethical awareness could be influenced by their understanding of

academic integrity and the limitations of AI. Ethical awareness involves comprehension of the ethical implications of using AI tools, such as: Avoiding plagiarism by not submitting AI-generated content as self-authored work; Citing AI sources; Fact-checking; Safeguarding privacy and confidential information; Using AI for learning purposes, rather than as a replacement for thinking. Academic integrity, data protection, and assessment fairness continue to be key ethical issues highlighted in the research of ChatGPT ethics (Acosta-Enriquez et al., 2024; Li et al., 2023).

H7: Ethical awareness moderates the relationship between behavioural intention and ChatGPT utilisation, such that students with higher ethical awareness are more likely to use ChatGPT responsibly.

Proposed Conceptual Framework

In the conceptual framework proposed, the factors of performance expectancy, effort expectancy, social influence and facilitating conditions are considered to be independent variables. Behavioural intention is considered a mediator and ChatGPT utilisation is the outcome variable. Ethical awareness is incorporated as a moderating variable between the behavioural intention and utilisation. The model proposes that the students' intention to use ChatGPT is influenced by their expectations of academic gains, perceived ease of use, social encouragement, and institutional support. But, from intention to the responsible use requires ethical awareness.

This framework is beneficial because it acknowledges how ChatGPT is both a beneficial tool in higher education and a potentially harmful one. ChatGPT, on the other hand, is a learning technology that has the potential to enhance academic support and productivity. On the other side, it is a system of content production, which poses threat to the academic integrity and quality of learning. The model's adoption of UTAUT along with ethical awareness offers a more balanced

explanation of the adoption of ChatGPT. It enables researchers to examine the context in which uses are initiated as well as the context in which uses become responsible and educationally valuable. Figure 1 shows the conceptual model.

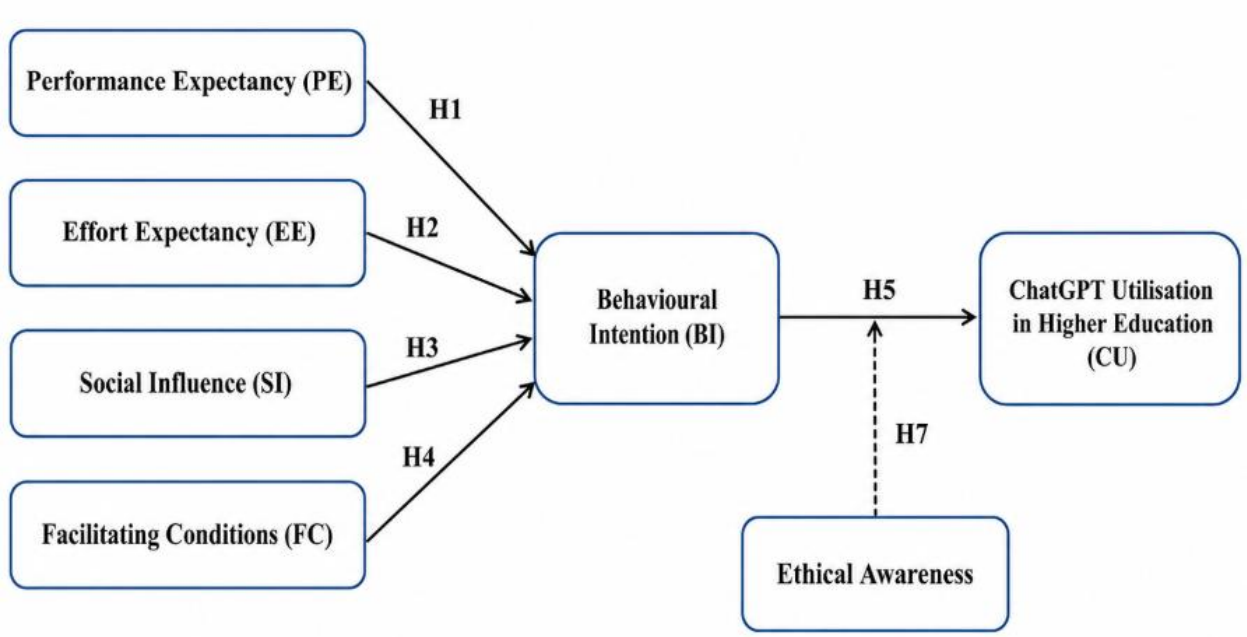

Figure 1: ***Conceptual Model***

Proposed Methodology

The type of research design in this study is Quantitative with cross sectional survey method. A quantitative design is the type of design that can be used in this study because the study has hypotheses which are relationships between clearly defined variables. The variables include performance expectancy, effort expectancy, social influence, facilitating conditions, behavioural intention, ethical awareness, and ChatGPT utilisation. Survey method enables the data to be collected from a relatively large number of university students and can enable statistical analysis of the technology acceptance patterns. The cross-sectional design is appropriate for this study since the research wants to find out the students' perceptions and behaviors at a particular time.

The research will take deductive approach. The hypotheses are derived from the UTAUT model and drawn from the literature on generative AI and educational technology. In the deductive method, the method starts with theory, formulate hypothesis, gather empirical data, and test the relations proposed. The approach is appropriate for studying the adoption of ChatGPT as it is grounded in the existing technology acceptance theory and presents a fresh domain for its application and extension.

The target group will be the students in the undergraduate and postgraduate level from Higher Education Institutions. Students have been chosen because they make ChatGPT a significant part of their academic lives.Students have been chosen because they use ChatGPT for academic tasks. The sample should comprise students from a variety of subject areas including business, education, social studies, engineering, computing, health sciences and humanities. It's important to include different disciplines, as the use of ChatGPT could differ depending on the type of academic task. In the language programmes, for instance, students could use ChatGPT to support them with writing, while in the computing programmes they could be supported with explanations on coding.

Purposive and convenience sampling may be used in the study. Using purposive sampling will guarantee that the respondents are university students who know about ChatGPT or have used it previously. Students are able to be accessed online, via university mailing lists, learning management systems and student groups; this may lead to the use of convenience sampling. Probability sampling would enhance generalisability but may not be feasible to have a complete sampling frame of all university students. The researcher should ensure that different universities, different levels of study, different faculties, different demographic groups respond to the research to minimize sampling bias.

It is recommended that at least 300 respondents be used for structural equation modelling. However, a greater number of valid responses (400 to 500) would be desirable due to the greater statistical power, greater model stability, and more reliable testing of mediation and moderation effects. If PLS-SEM is applied, the sample size should also meet the statistical power criteria as a function of the highest number of predictors that feed into the construct. A larger number of samples will also help to reduce missing data and unusable responses.

Data will be gathered by a structured questionnaire. The questionnaire can be sent via online platforms such as Google Forms, Microsoft Forms, or Qualtrics or other secure survey platform. The survey will include informed consent statements that describe the purpose of the study, voluntary participation, anonymity and confidentiality, and the right to withdraw. The screening questions will ensure that all respondents are current students and know about ChatGPT. The main questionnaire will consist of the measurement items for each construct, followed by the items of the demographics such as gender, age, study level, discipline, year of study, type of university, and the frequency of ChatGPT usage.

Multiple item scales adapted from the existent technology acceptance research and recent studies on ChatGPT will be used to measure all constructs. The Likert scale could be from 1 = strongly disagree to 5 = strongly agree. Performance expectancy may encompass elements like: ChatGPT contributes to my scholarly productivity, ChatGPT assists me successfully finish scholarly tasks, and ChatGPT improves my knowledge of the content of my course. Effort expectancy can involve elements like: The ChatGPT interface is user-friendly, I find it easy to learn how to use ChatGPT, and I can easily understand my interactions with ChatGPT. Items that represent social influence include peer influence, lecturer influence, and institutional encouragement.

Access, resources, training, and institutional support are possible measures of facilitating conditions. They can be: I can access ChatGPT, I know a lot about how to use it for academic purposes, or my university does provide guidelines on how to use AI responsibly. To represent the concept of behavioral intention, the following items have been included: I would like to use ChatGPT for academic learning in the future, I would continue to use ChatGPT for academic-related tasks, and I would recommend ChatGPT as a learning support tool. The use of ChatGPT can be tracked by inquiring about the frequency with which students utilize the technology to explain concepts, brainstorm ideas, use for writing, grammar corrections, planning assignments, coding, and revising.

Items pertaining to academic integrity, disclosure, verification, and privacy will be used to measure ethical awareness. Some examples: I know that AI-generated content must not be submitted as my own work, I check information that ChatGPT has provided, I understand when to cite my use of ChatGPT, and I do not provide confidential information to AI tools. The items are significant as part of the study of not only adoption but responsible utilisation.

The questionnaire should be reviewed by experts in educational technology, research methods and academic integrity prior to the main survey. Then a pilot test (of 30-50 students) should be done to test clarity, length and reliability. Unclear wording can be revised based on feedback from the pilot test. Cronbach's alpha may be used to test for reliability, and item-total correlation and expert judgment may be used to test for preliminary validity.

Data Screening will be the initial step in data analysis. The researcher needs to look for missing values, duplicate responses, straight line responses, outliers and normality. The characteristics of the respondents and use patterns of ChatGPT will be summarised using descriptive statistics. Validity and reliability will thereafter be evaluated. The Cronbach's alpha

and composite reliability should exceed 0.70. Average variance extracted will be used to evaluate convergent validity on which values above 0.50 will be acceptable. Fornell-Larcker criterion and heterotrait-monotrait ratio can be used to study discriminant validity.

Structural equation modelling will be used to test the hypotheses. The study is prediction based involving mediation and moderation relationship, therefore partial least squares structural equation modelling is recommended. The significance of path coefficients, indirect effects and interaction effects can be tested using 5,000 resamples. Path coefficients, t-values, p-values, coefficient of determination, effect size, predictive relevance and model fit indicators will be used where appropriate to evaluate the model.

Ethics are a must. All study data should be collected with approval from the relevant institutional ethics committee. Participation must be voluntary and no personally identifiable information be collected unless necessary. Data is to be safely stored and used by the research team. The study is about academic integrity and the survey should explain that it will not be examining specific instances of academic dishonesty. Rather, it is looking for an overall impression and preferences. This statement can help answerers to be candid.

Expected Results and Discussion

It is anticipated that the proposed study will yield a positive relationship between performance expectancy and behavioural intention that is strong and positive. Students will use ChatGPT if they think that it enhances academic outcomes and learning efficiency.Students will be more inclined to use ChatGPT if they feel it will improve their academic outcomes and learning efficiency. This finding was anticipated and aligned with the UTAUT as well as the recent findings by Strzelecki (2023) and Bouteraa et al. (2024) that perceived usefulness is a crucial factor influencing acceptance of ChatGPT. If performance expectancy is the most

important, then it is crucial for universities to demonstrate the ways in which ChatGPT can be used to enhance legitimate learning activities, such as clarifying concepts, providing formative feedback, and planning for revision.

It is also expected that effort expectancy will have a positive impact on intention. The ease of use of ChatGPT is due to its conversational nature. But findings could indicate that ease of simple use doesn't equal ease of responsible use. Students may be able to pose a question but not know how to assess an answer, paraphrase correctly, cite the information correctly, or recognize false information. Attention should be given, therefore, to the importance of effort expectancy, and university training should go beyond teaching access to the technical aspects of the Internet, and emphasize timely literacy, source verification and responsible academic practice.

Social influence is likely to be a key factor. Students can be affected by fellow pupils who are using ChatGPT regularly, teachers who talk openly about AI, and messages from the institution about AI. However, if social influence is important, it will imply that universities should not consider the use of ChatGPT as a private student behavior. Rather, responsible use must be nurtured through discussion in the classroom, lecturer modeling, peer mentoring and clear communication of the policy. Over time, fostering a positive academic culture that treats AI as a tool for learning, not a shortcut, is a goal that can be achieved.Over time, a positive academic culture can be created which views AI as a learning tool and not a shortcut.

Conditions to facilitate are expected to affect the intention to behave and presumably utilization. Students must have access, guidance and support. If there are not specific rules outlined in the institutions, they may be unsure if they are allowed to use ChatGPT. They may accidentally use it for the wrong purpose if not trained. When facilitating conditions are important, it is important for institutions to invest in AI literacy modules, policy documents,

academic integrity guidance and educator development. This type of support can help minimise faculty and course inconsistency.

It is hypothesized that the relationship between UTAUT factors and ChatGPT utilisation will be mediated by behavioural intention. This would support the notion that students' perceptions influence their desire to use ChatGPT and this desire translates into actual behaviour. The intention-use relationship is expected to be mediated by ethical awareness. Students with high ethical awareness can use ChatGPT more responsibly, and students with low ethical awareness can use ChatGPT in ways that result in academic risks. If this is the outcome to be expected, it is imperative that ethics be part of the model for adopting AI.

It is important to mention that the use of ChatGPT doesn't always have a positive impact. If used regularly and with the intent of asking questions, comparing explanations, and refining drafts, then students can benefit from using the tool while learning. But overuse can be detrimental to learning if they use it to escape reading, thinking, and writing. Future empirical research is therefore needed to provide a distinction between responsible use and problematic use. Frequency might be insufficient; other factors to consider include purpose, transparency, verification, and learning engagement.

Practical Implications

This proposed study has several practical implications to the higher education institutions. The first is to establish clear and transparent AI policies at universities. Acceptable and unacceptable use of ChatGPT should be outlined in policies. If students use ChatGPT to brainstorm, to clarify ideas, to improve grammar, or to get feedback, this can be OK, but it should never be used to write their own original work. Policies should also clarify when AI assistance will be required to be disclosed by students.

Secondly, AI education for students and professors should be offered in universities. It is important that students are aware of how ChatGPT works and what its limitations are and how to check sources. Lecturers require support in assignment design, communicating expectations, and instructions in responsible use. Consider using examples to make it more real for training as abstract warnings alone might not be sufficient to shift behavior.

Third, some rethinking is needed in the design of assessment. While traditional written assignments can still be useful, they need to be complemented with process-based and authentic evaluation. Students may be asked to provide outlines, drafts, reflection notes, oral explanations or statements that they have used AI. Alternatively, assessment tasks may be based on personal experience, local cases, problem-solving or in-class application. The following strategies can make it more difficult for students to use AI purely without human involvement, while also supporting their use of AI.

Fourth, universities should not solely depend on AI detection systems. Detection systems can yield false-positive results and can be inaccurate when it comes to telling the difference between writing done by humans and writing done by AI tools. This fixation on detection can also lead to a lack of trust between students and teachers. The best strategy is to integrate clear rules, open communication, new assessment design, and academic support. This resonates with the perspective that generative AI needs to be adapted to education in one way or another, not via a single technical solution (Cotton et al., 2024; Miao & Holmes, 2023).

Lastly, an ethical culture should be encouraged in institutions regarding AI. Students should be aware that academic honesty is not just about avoiding punishment, it is about fostering intellectual honesty, independent judgment, and professional responsibility. ChatGPT is a helpful tool, but it shouldn't take the place of the learner's thinking. It is, therefore, crucial that the use of

AI is integrated into the development of responsibility into the competences of graduates and digital citizenship.

Limitations and Future Research

There are a number of limitations for this proposed study. First, cross sectional design can only determine relations between variables, but not prove the cause of the variables. Longitudinal designs could be utilized in future studies to explore patterns in students' ChatGPT usage within the context of changing institutional policies and AI tools over time. Second, the study is based on self-reported data and thus may suffer from social desirability bias particularly since academic integrity is a delicate issue. The combination of survey, interview, focus group, learning analytics, or assignment analysis could also be incorporated into future studies.

Third, the selected UTAUT variables and ethical awareness are the ones in the proposed model. Other constructs like habit, trust, perceived risk, AI anxiety, digital literacy, academic self-efficacy and perceived policy clarity can be included in future research. These factors could offer a more holistic view of the factors driving the adoption of ChatGPT. Fourth, the study can take place in one country or institutional setting, thus restricting generalisability. It would be useful to make comparative studies across countries, disciplines and university types.

In addition to frequency, future studies could also explore how well ChatGPT is being used. For instance, the researchers can identify surface-level use (e.g., copying answers created by the AI) and deep learning use (e.g., comparing explanations and revising drafts with reflection). Research can also focus on how lecturers have adapted their assessment of the use of AI, and how students understand policies on the use of AI. With the ongoing development of Generative AI, the focus in higher education research needs to shift from what to how, and from what to why.The focus in higher education research needs to shift from what to how and what to why

with the ongoing development of Generative AI.

Conclusion

ChatGPT has become a significant tool in higher education because it can support personalised learning, provide immediate assistance, improve academic productivity, and help students engage with complex material. However, its adoption also raises serious concerns about academic integrity, overreliance, misinformation, fairness, and privacy. Therefore, understanding why students use ChatGPT and how they can use it responsibly is an important research issue.

This paper proposed an empirical study based on the UTAUT framework. Performance expectancy, effort expectancy, social influence, and facilitating conditions are proposed as predictors of behavioural intention, while behavioural intention is proposed as a predictor of ChatGPT utilisation. Ethical awareness is included as a moderator because responsible use depends on students' understanding of academic integrity and AI limitations. The proposed methodology uses a quantitative cross-sectional survey design and structural equation modelling to test the research model.

The central argument of the paper is that ChatGPT should not be viewed simply as a threat or a solution. It is a powerful educational tool whose value depends on the conditions of use. When supported by clear policies, ethical awareness, AI literacy, and appropriate assessment strategies, ChatGPT can enhance learning. Without such support, it may undermine academic standards and student development. The future of ChatGPT in higher education therefore depends on responsible integration, institutional readiness, and a continued commitment to the core values of higher learning.

Declarations

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Competing Interests

The authors declare that they have no competing interests.

Data Availability

No empirical data were generated or analysed for this article. The paper develops a theoretical framework and proposed empirical research design for future investigation.

Author Contributions

All authors contributed to the conceptualization of the study, development of the theoretical framework, review of the relevant literature, and preparation of the manuscript. All authors reviewed and approved the final version of the manuscript.

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