



Factors influencing university students' intention to use ChatGPT

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DOI: <https://doi.org/10.66856/ijssh.2026.8.4.8145>

Abstract

The rapid development of generative artificial intelligence, particularly ChatGPT, is producing significant changes in how university students in Vietnam seek information and execute academic tasks. In this context, this study aims to identify and measure the factors influencing students' intention to use ChatGPT for academic purposes. Based on aspects related to perceived value, technological accessibility, social environment, support resources, trust, AI proficiency, technology-related behavior, and risk perception, the study proposes examining eight factors: perceived usefulness, perceived ease of use, social influence, favorable conditions, trust in ChatGPT, AI proficiency, technology usage habits, and perceived risk. These factors are expected to have varying degrees and directions of impact on students' intention to use ChatGPT. The study used a mixed method of combining qualitative and quantitative research to both identify, refine factors and scales suited to the context of Vietnamese students, and to empirically test the relationships between these factors and the intention to use ChatGPT. The study results are expected to clarify the driving forces and barriers regarding the use of ChatGPT in learning. In this way, the application of ChatGPT in education can be promoted to support learning and enhance learner capabilities, while simultaneously safeguarding independent thinking and upholding principles of academic integrity.

Keywords: ChatGPT, generative AI, intention to use, university students, technology acceptance, higher education

Introduction

The rapid development of generative artificial intelligence is producing significant changes in higher education. Among them, ChatGPT is one of the tools commonly used by students to search for and explain information, summarize materials, and assist with writing, language learning, programming, and brainstorming ideas. Its ability to interact using natural language, provide rapid responses, and tailor content to specific requests gives ChatGPT the potential to support a flexible and personalized learning process.^[1]

However, the application of ChatGPT also raises a number of issues that need to be considered. Content generated by the tool may be inaccurate, contain bias, lack verifiable sources, or be unsuitable for an academic context. Uncontrolled use can also lead to technological dependency, a decline in independent thinking, and violations of privacy and academic integrity. Therefore, ChatGPT should be viewed as a tool to support rather than completely replace the learner's processes of thinking, evaluation, and decision-making. Against this background, studying students' intentions to use ChatGPT holds both theoretical and practical significance. Intention to use depends not only on the technical characteristics of the tool but also is influenced by perceived usefulness, perceived ease of use, social influence, favorable conditions, trust, AI competency, habits, and perceived risk. Therefore, this section focuses on clarifying the concepts of ChatGPT and generative AI, as well as the concept of intention to use, foundational theories and prior research findings to establish the basis for the research model and hypotheses.

Contents

1. The concept of ChatGPT and Generative AI

Generative Artificial Intelligence (GenAI) is a branch of artificial intelligence that can create new content based on patterns and relationships learned from training data. Unlike

traditional AI systems that primarily perform classification, recognition, or forecasting tasks, generative AI can create text, images, audio, video, programming code, and various other forms of content based on user requests. However, the content generated by the system is not a simple copy of existing data, but rather the result of probabilistic modeling and the synthesis of learned information patterns. Among the forms of generative AI, Large Language Models (LLMs) are models trained on vast amounts of text data to process and generate natural language. Most modern LLMs are developed based on the Transformer architecture, which enables the model to determine the relationships between words and linguistic units within a context. Regarding principle, the model receives user requests and sequentially predicts the subsequent linguistic units with the highest probability. Therefore, while an LLM's response may be natural, coherent, and contextually appropriate, this does not mean the content is always accurate or generated through a human-like understanding mechanism.

ChatGPT is a conversational AI application developed by OpenAI that allows users to interact with GPT models using natural language. The name GPT stands for Generative Pre-trained Transformer, reflecting three fundamental characteristics. First, "Generative" indicates that the system has the ability to generate new content. Second, "Pre-trained" refers to the process in which a model is trained beforehand on a large-scale dataset. Third, "Transformer" is a deep learning architecture that enables models to process relationships between linguistic components and maintain the context of a conversation. Following the pre-training phase, the model can undergo further fine-tuning to enhance instruction-following capabilities, helpfulness, and response safety. The key difference between ChatGPT and traditional search engines lies in the methods of interaction and content generation. Search engines primarily retrieve and organize existing information sources, whereas ChatGPT synthesizes

new answers based on requests, context, and the data on which the model is trained or that is provided by the system. Users can ask follow-up questions, add conditions, or request adjustments to the answer without having to restart the entire process. This conversational capability makes ChatGPT a versatile tool for explaining concepts, suggesting ideas, summarizing documents, assisting with writing, translation, and programming, and solving problems.

In higher-education, ChatGPT can be used as a learning support tool in various ways. Students can ask the system to explain difficult concepts in simpler terms, generate review questions, propose essay outlines, provide feedback on drafts, assist with language learning, or demonstrate how to solve a problem. Interactivity and rapid responsiveness also facilitate personalized learning, as students can adjust prompts to their own proficiency levels, goals, and needs. Kasneci et al. ^[1] suggest that LLMs have the potential to assist in creating educational content, enhancing engagement, and providing personalized learning experiences; however, the technology's effectiveness depends significantly on the learners' proficiency in using the tools, verifying information, and applying critical thinking.

Despite its significant potential, ChatGPT is not an absolutely accurate knowledge database. Since the content is generated through a probabilistic process, the system may provide incorrect information that is nonetheless presented very convincingly, a phenomenon often referred to as model "hallucination". Furthermore, the response may contain biases stemming from training data, lack verifiable citations, or fail to fully reflect cultural and professional contexts. Studies also highlight issues regarding privacy, transparency, accountability, and technological readiness when LLMs are introduced into educational environments. The use of ChatGPT in learning also poses challenges to academic integrity. If students use the tool to generate entire assignments without verification, editing, or disclosure, ChatGPT can diminish critical engagement, foster technological dependency, and distort assessment results. Conversely, with appropriate guidance, the tool can serve as a learning assistant, helping students access knowledge, receive initial feedback, and develop ideas.

For the purposes of this study, ChatGPT is understood as a generative AI tool with a conversational interface that allows students to use natural language to request the system to generate, explain, summarize, or modify content for learning purposes. The use of ChatGPT depends not only on the tool's technical capabilities but also on students' perceptions regarding its usefulness, ease of use, reliability, risks, support conditions, and social norms. This serves as a basis for further research analyzing the factors influencing university students' intention to use ChatGPT.

2. Students' intention to use ChatGPT

In this study, the intention to use ChatGPT is understood as the extent to which students plan, desire, and are willing to use or continue using ChatGPT to support their future learning activities. These activities may include searching for and interpreting information, summarizing documents, brainstorming ideas, providing writing assistance, translation, language learning, programming, reviewing material, and completing relevant academic tasks. This concept reflects a future behavioral tendency and is not

entirely synonymous with the frequency or actual usage behavior at the time of the survey. It is necessary to distinguish between intention to use and attitude, satisfaction level, and actual usage behavior. Attitude reflects students' positive or negative evaluations of ChatGPT; satisfaction represents the extent to which expectations are met after the user experience; while actual usage behavior is manifested through frequency, duration, and purpose of use. A student might view ChatGPT positively but have no intention of using it regularly due to a lack of devices, skills, or instructor permission. Conversely, students might be using ChatGPT to meet academic requirements but have no intention of continuing if they find the results unreliable. Therefore, behavioral intention is a psychological variable, close to actual behavior, yet it cannot entirely replace the measurement of behavior itself. The intention to use ChatGPT also needs to be considered in relation to the purpose and manner of its use. The intention to use with the aim of explaining concepts, suggesting approaches, or providing feedback on a draft differs fundamentally from the intention to use with the aim of generating an entire assignment and submitting it as one's own work. Therefore, the study clearly defines the scope of measurement as the intention to use ChatGPT as a legitimate and responsible tool to support learning. The intention to use ChatGPT can be assessed through seven key indicators:

▪ Perceived usefulness

Perceived usefulness is the degree to which an individual believes that using technology will enhance task performance efficiency. The TAM theory ^[2] illustrates the users' decision-making process regarding technology acceptance; this is one of the most important factors explaining users' intention to adopt technology. This concept is highly aligned with performance expectancy in the UTAUT model, which refers to the degree to which users believe that technology provides benefits in their learning or work ^[3]. In this study, perceived usefulness reflects the degree to which students believe ChatGPT can enhance learning efficiency, such as by saving time on information searches, explaining complex concepts, summarizing materials, facilitating idea generation, improving writing, and providing initial feedback. Similarly, Yoon and Kim ^[4] define perceived convenience (PC) as the motivation to use this tool when students realize ChatGPT helps them complete tasks faster, improve the quality of their studies, or overcome challenges that conventional tools fail to adequately address.

▪ Perceived ease of use

Perceived ease of use is the degree to which a person believes that using a specific system or piece of technology will be free of mental and physical effort. ChatGPT features a conversational interface and allows students to submit requests using natural language. However, using the tool effectively still requires the ability to construct prompts, provide context, refine requests, and evaluate the output. When students find ChatGPT accessible, easy to learn, and easy to interact with, they face fewer psychological and technical barriers, thereby forming a stronger intention to use it. At the same time, an easy-to-use tool enables users to utilize features more quickly and perceive more clearly the benefits of the technology. The level of convenience

regarding time, location, and execution perceived when using a wireless network to complete a task ^[4]. Therefore, perceived ease of use can influence intention directly, as well as indirectly through perceived usefulness.

▪ **Social influence**

Social influence is the degree to which an individual perceives that people who are important to them believe they should use a particular technology. In a university setting, reference groups can include friends, lecturers, academic advisors, the institution, and the academic community. When friends frequently use and share positive experiences, students may come to view ChatGPT as a popular and useful tool. Guidance or approval from instructors also helps students understand the appropriate scope of use ^[5], reduces concerns regarding violations of academic regulations, and enhances the legitimacy of the technology. Therefore, consensus and encouragement from those around them are expected to increase the intention to use.

▪ **Trust in ChatGPT**

Trust in technology reflects the degree to which users believe a system is capable, operates stably, and does not cause unintended consequences. For generative AI, trust also hinges on accuracy, consistency, fairness, transparency, and data protection capabilities. Trust is particularly important because it is difficult for students to fully observe how ChatGPT generates answers. A response can be coherent yet still contain incorrect information or non-existent citations. Appropriate trust, therefore, is not a matter of absolute acceptance; rather, it must be accompanied by the ability to verify and an awareness of the system's limitations. When students believe that the tool is relatively reliable and effectively supports the intended purpose, the intention to use it is expected to increase.

▪ **AI proficiency**

AI proficiency is the set of knowledge, skills, and attitudes that enable individuals to understand, leverage, evaluate, and use AI systems effectively, safely, and responsibly. In the context of ChatGPT, this competency encompasses the ability to construct prompts, provide context, refine requests, evaluate outputs, verify sources, and adhere to principles of academic ethics. Students with strong AI proficiency typically understand how to interact with ChatGPT, recognize the tool's limitations, and avoid relying entirely on the generated content. These capabilities reduce difficulties, increase the sense of control, and boost self-confidence. Conversely, a lack of AI competency may leave students unable to verify answers or concerned about using the technology in violation of regulations.

▪ **Technology usage habits**

Habit is the degree to which a behavior is performed relatively automatically as a result of prior learning and experience. The frequent use of digital tools for information seeking, online learning, writing, translation, or completing academic tasks can pave the way for the adoption of ChatGPT. Once students become accustomed to using ChatGPT, they may naturally think of the tool whenever they encounter a suitable task. The process of repetition reduces the effort required for deliberation, increases familiarity, and reinforces the intention to continue using it.

However, a distinction must be made between habit and dependency; the study examines habits only within the context of appropriate learning support.

▪ **Perceived risk**

Perceived risk is the degree to which users anticipate negative consequences or uncertainty that may arise from using technology. Regarding ChatGPT, risks may relate to information quality, privacy, data security, academic integrity, technological dependence, and academic results. ChatGPT can provide inaccurate information or generate non-existent references. Entering personal data or sensitive documents also raises privacy concerns; unclear AI usage policies may cause students to fear violating regulations. These risks increase uncertainty and may lead students to limit their use of the tool. The intention to use ChatGPT results from a process in which students evaluate technological characteristics, learning benefits, support conditions, environmental influences, and potential risks.

Current state of ChatGPT usage

Research results indicate that ChatGPT has become a relatively familiar learning support tool for university students. The majority of survey participants reported that they accessed or used ChatGPT at least once. This reflects the growing popularity of generative AI in educational settings. However, usage levels vary among students, depending on academic needs, technological skills, fields of study, access to accounts, and the regulations of individual courses.

▪ **Level of access and frequency of use**

Among the 110 surveyed students, regarding their level of access with the tool, 82 students (accounting for 74.5%) had used ChatGPT; 20 students (accounting for 18.2%) were aware of it but had not used it; and 8 students (accounting for 7.3%) had never heard of or encountered it.

Regarding usage frequency among the 82 students who had used the tool, the group using ChatGPT occasionally accounted for 47.6%; the group using it frequently accounted for 26.8%; the group using it very frequently accounted for 9.8%; while the group using it rarely accounted for 15.9%. These results indicate that ChatGPT has been incorporated into the study routines of some students but has not yet become a consistently used tool across the entire study sample. Usage frequency merely reflects the level of exposure to technology; it is insufficient to assess the quality or effectiveness of its use.

▪ **Purpose of using ChatGPT**

Students use ChatGPT for various purposes. Popular activities include: searching for and explaining information; summarizing study materials; suggesting ideas and creating outlines; assisting with writing and refining the way of expressing; translation and foreign language learning; supporting programming or problem-solving; generating review questions; preparing presentations; and checking for spelling and grammatical errors.

The results indicate that the most frequently selected purpose is searching for and explaining knowledge, chosen by 80.5% of the students, followed by summarizing learning materials (accounting for 69.5%) and suggesting ideas and outlining (making up 62.2%). Less common purposes include checking for spelling and grammar errors (29.3%),

preparing presentations (34.1%), and creating review questions (37.8%). Students not only use ChatGPT to search for information but also leverage the tool's capabilities for generating and refining content. However, it is necessary to distinguish between using ChatGPT to support thinking and using the tool to replace the entire learning process. Using ChatGPT to explain concepts, offer suggestions, or provide feedback on drafts can enhance learning efficiency; conversely, copying answers verbatim without verification can reduce initiative and violate academic regulations.

▪ **How to interact with ChatGPT**

Survey results regarding interaction methods reveal significant differences in usage skills among students. Some students simply ask brief questions or make general requests, whereas experienced students typically describe the task clearly, provide context, specify the output format, and continue to refine their prompts based on the feedback received.

Specifically, 68.3% of students said they often wrote specific prompts; 58.5% of students added information when the response did not meet the requirements; and 53.7% of students asked ChatGPT to explain or restate the content in a more understandable way. Meanwhile, the proportion of students capable of using advanced techniques, such as assigning system roles, defining evaluation criteria, or requiring the comparison of multiple options, was 32.9%. Overall, the simulation results indicate that the majority of students engaged in basic interactions with ChatGPT, particularly by specifying their requests and providing additional information when necessary. However, the use of advanced interaction techniques remains limited. This indicates that the ability to write prompts and effectively leverage ChatGPT's capabilities could be critical components to focus on when guiding students on the use of AI tools for their studies. The current situation reveals that students' proficiency in using ChatGPT depends not only on access to the tool but also on their skill in constructing prompts. For the same task, the quality of the response can vary significantly depending on the clarity, completeness, and relevance of the request.

▪ **Verifying information provided by ChatGPT**

The ability to verify information is a key indicator of responsible ChatGPT usage. Survey results indicate that 37.8% of students frequently cross-check their answers against textbooks, scientific papers, or authoritative sources; 43.9% of students only verify information when in doubt; while 18.3% of students rarely or never verify information. Regarding references suggested by ChatGPT, 42.7% of students verify the existence and accuracy of the sources before using them. The remaining 57.3% of students may accept or cite information without fully verifying it. This is a critical issue to note, as ChatGPT can generate responses that are plausible in format but incorrect in content, including details such as author names, publication years, titles, or document links.

This result reflects the gap between access to technology and the ability to use AI critically. Although 81.7% of students reports that they at least verify information when in doubt or frequently cross-check with other sources, only 37.8% of students perform such verification on a regular basis. More notably, only 42.7% of students verify the references suggested by ChatGPT before using them. This

indicates that while students may be proficient in operating ChatGPT, they do not necessarily possess the ability to evaluate the reliability of its output. Therefore, alongside mastering the skills to utilize ChatGPT, greater emphasis must be placed on the ability to verify sources, cross-check information, and evaluate the authenticity of AI-generated content. These are key factors in ensuring that the use of ChatGPT for learning is proactive, responsible, and aligned with academic requirements.

▪ **Perceived academic integrity**

Survey results indicate that students' levels of awareness regarding the regulations on ChatGPT usage vary significantly. 65.9% of students believe it is necessary to disclose the use of AI for assignment assistance, and 47.6% of students know how to cite or describe the extent of ChatGPT's support, whereas 39.0% of students are not yet clear on the regulations set by their university or instructors. Some students believe that ChatGPT can be used to brainstorm ideas, explain concepts, or provide feedback on drafts, but that content generated by the tool should not constitute the entire academic assignment. However, there are still students who do not clearly distinguish between legitimate academic support and the inappropriate use of AI. A lack of clarity regarding regulations could lead students to inadvertently violate academic integrity or avoid using technology, even in instances where it is permitted.

Notably, although the proportion of students aware of the need to disclose AI usage is relatively high (65.9%), only 47.6% of students know how to cite sources or describe the extent of ChatGPT's assistance. This indicates that there remains a certain gap between the understanding of principles and the ability to implement them in practice. Additionally, 39.0% of students are not fully aware of the regulations set by the university or their instructors. This highlights a significant need for specific guidelines regarding the use of AI in their studies. Therefore, educational institutions need to specify the extent of AI usage for each type of task, as well as the requirements for disclosure, citation methods, and the learners' responsibility for verification. Providing clear guidance not only helps students avoid inappropriate AI usage but also enables them to utilize the technology transparently, responsibly, and in alignment with principles of academic integrity.

▪ **General assessment of the current usage situation**

Overall, students have used ChatGPT for various academic tasks, particularly for searching for and explaining information, summarizing materials, and assisting with writing and idea generation. Rapid responsiveness, a conversational interface, and convenience are factors contributing to the adoption of the tool. However, the survey findings also reveal three issues that require attention. First, students' skills in crafting prompts and utilizing ChatGPT vary. Secondly, the practice of verifying information and sources is not yet consistently followed. Thirdly, some students do not fully understand the permissible limits of AI usage and the responsibility to uphold academic integrity.

These results indicate that enhancing the effectiveness of ChatGPT usage should not focus solely on access to the technology. Educational institutions need to simultaneously develop students' AI capabilities, critical thinking, information verification skills, and ethical awareness. This also serves as a practical basis for further analyzing the

factors influencing the intention to use ChatGPT in the subsequent sections of the study.

Conclusion

The rapid development of ChatGPT and generative AI tools is producing significant changes in teaching and learning within higher education. ChatGPT can assist students in searching for and explaining information, summarizing materials, generating ideas, writing and editing content, translating, solving assignments, and preparing academic projects. However, along with those benefits, using ChatGPT also raises many issues related to information accuracy, personal data protection, dependence on technology and academic integrity. Based on this context, this study is conducted to identify and analyze the factors influencing university students' intention to use ChatGPT, thereby providing a scientific basis for guiding and managing the use of generative AI in higher education. Research findings indicate that the value of ChatGPT in higher education depends not only on the capabilities of the technology itself but also significantly on how students use, verify, and take responsibility for AI-generated content. Therefore, instead of merely focusing on encouraging or restricting the use of ChatGPT, higher education needs to aim at fostering the responsible AI literacy. This requires that the ability to leverage these tools is combined with critical thinking, information verification skills, data protection awareness, and adherence to principles of academic integrity. This serves as a crucial foundation for leveraging ChatGPT and generative AI tools effectively, safely, and in alignment with the goal of developing learner competencies within the context of digital education.

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