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Bridging the Gap: How AI Literacy Shapes Perceptions of Usefulness, Ease of Use, and Risks in AI Adoption among University Students

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Abstract: The rapid integration of artificial intelligence tools, especially ChatGPT, into educational settings has generated heated discussions among educators, students, and policymakers. This study explores the University students' attitudes towards the use of ChatGPT in education by examining the impact of perceived usefulness (PU), perceived ease of use (PEOU), and perceived risks (PR) on users' overall perception (OP) while AI literacy (AIL) is considered a moderating variable. Through a quantitative research design based on the Technology Acceptance Model (TAM), this study surveys the university students enrolled in different degree levels and fields of study to gain insights into their attitudes, behaviors, and concerns about the implementation of ChatGPT in educational contexts. Smart PLS (SEM) was utilized to validate the hypotheses. The research findings revealed that perceived usefulness, ease of use, and perceived risks are three major factors that have significantly changed users' overall perception of AI. Nevertheless, AI literacy was not a significant moderator of these relationships, indicating that people's perceptions are mainly determined by the features of the technology rather than the level of user literacy. The results add value to the existing literature on the application of AI in education and provide practical implications for educational institutions that aim to develop policies and guidelines for responsible use of AI tools. This research, on one hand, explores the virtual literacy component and, on the other, it delves into the functioning of the balance between technological innovation and educational integrity.

Key Words: ChatGPT, Artificial Intelligence, Perceived Usefulness, Perceived Ease, Perceived Risk, AI Literacy

Introduction

The creation of generative artificial intelligence (AI) has largely changed the face of education in this new millennium (Cotton et al., 2023; Kasneci et al. , 2023). Of the many different AI systems, ChatGPT, a product of OpenAI and made available to the public in November 2022, has attracted the academic community's remarkable interest (Rudolph et al. , 2023). This large language model shows exceptional capacities for producing texts in a human, like manner, being able to answer questions, helping with problem, solving, and giving explanations in different subject areas (OpenAI, 2023). Following only a few months after its public release, ChatGPT was used by over one hundred million users, thus, becoming one of the fastest, growing consumer apps in the history (Hu, 2023). ChatGPT embedding into education environments is at the same time an opportunity and a challenge for upgrading educational institutions (Chan and Hu, 2023; Baidoo et al., 2023). On the one hand, this new era offers benefits such as personalized learning assistance, immediate access to information, help with research and writing

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assignments, and even the capability to explain difficult concepts in easy language (Tlili et al. , 2023). Students could utilize ChatGPT as a study partner, a brainstorming partner, and a tool to help with learning difficulties outside the conventional classroom. (Kasneci et al., 2023). On the alternative hand, issues have emerged concerning academic integrity, crucial wondering improvement, records accuracy, and the ability for over-reliance on AI-generated content (Cotton et al., 2023; Perkins, 2023).University college students, as virtual natives who've grown up surrounded by using generation, constitute a crucial populace for know-how AI adoption in schooling (Prensky, 2001). Unlike previous educational technologies that generally served as statistics repositories or communication platforms, ChatGPT introduces an essentially exclusive paradigm wherein AI actively participates inside the learning and introduction procedure (Borenstein et al., 2020). This shift increases important questions about the nature of gaining knowledge of, the definition of unique work, and the capabilities that students need to expand in an AI-augmented world (Dwivedi et al., 2023).

Problem Statement

Educational establishments face mounting stress to expand rules regarding AI tool usage, yet these decisions regularly proceed without comprehensive know-how of scholar perspectives, needs, and issues (Chan & Hu, 2023). The absence of systematic studies leaves educators and administrators without proof-based steering for integrating ChatGPT into curricula, establishing ethical suggestions, or supporting college students in developing appropriate AI literacy (Rudolph et al., 2023). Several important problems emerge from this studies hole. First, the relationship between students' perceived benefits of ChatGPT and their real utilization patterns remains doubtful (Lo, 2023). Second, the role of technical accessibility and simplicity of use in determining adoption rates requires investigation (Al-Sharafi et al., 2023). Third, college students' focus and subject regarding moral risks inclusive of plagiarism, instructional dishonesty, and essential thinking degradation want systematic examination (Cotton et al., 2023; Perkins, 2023). Fourth, the moderating has an impact on of AI literacy on those relationships has no longer been adequately explored (Ng et al., 2024. Without addressing those gaps, educational institutions risk both enforcing overly restrictive policies that restrict valid getting to know benefits or adopting permissive methods that compromise instructional requirements (Chan & Hu, 2023). The rapid evolution in AI will dictate how AI should use rules and norms now and the future (Borenstein et al. 2020). Understanding how students perceive AI will form the foundation for developing adaptive frameworks to evolve with technology as it evolves (Kasneci et al. 2023). Therefore, this research aims to address these critical needs by conducting an in-depth analysis of the factors that impact students' overall perception of ChatGPT as it relates to education.

Research Objectives

1. To study the connection between perceived usefulness and university students' universal belief of ChatGPT use in schooling.
2. To inspect the relationship among perceived ease of use and university college students' typical notion of ChatGPT use in schooling.
3. To analyze the relationship between perceived risks and university college students' typical notion of ChatGPT use in training.
4. To decide the moderating effect of AI literacy at the relationships between perceived usefulness, perceived ease of use, perceived risks, and standard notion of ChatGPT use in schooling. To perceive patterns in college students' actual usage behaviors and attitudes towards ChatGPT integration in academic settings.
5. To offer evidence-based totally pointers for educational establishments regarding ChatGPT integration guidelines and AI literacy improvement applications.

Hypotheses

Based on the research objectives and theoretical framework, the following hypotheses are proposed:

H1: Perceived usefulness has a substantial advantageous effect on university students' usual belief of ChatGPT use in training.

H2: Perceived ease of use has a giant wonderful effect on university college students' usual notion of ChatGPT use in schooling.

H3: Perceived dangers have a massive terrible effect on college students' normal belief of ChatGPT use in education.

H4: AI literacy undoubtedly moderates the connection between perceived usefulness and ordinary perception of ChatGPT use in education.

H5: AI literacy definitely moderates the relationship between perceived ease of use and common perception of ChatGPT use in education.

H6: AI literacy negatively moderates the relationship among perceived dangers and basic belief of ChatGPT use in training.

Literature Review

Artificial Intelligence in Education: Historical Context and Current Trends

The integration of synthetic intelligence into academic settings represents an extensive evolution in pedagogical tactics and getting to know technologies (Luckin et al., 2016; Holmes et al., 2019). .Contemporary AI packages in education leverage gadget getting to know, herbal language processing, and neural networks to provide increasingly more state-of-the-art help for coaching and gaining knowledge of (Brown et al., 2020). These technologies offer personalization at scale, permitting custom designed getting to know reviews that adapt to person scholar desires, tempo, and options (Khosravi et al., 2022). Research has validated that AI-powered educational gear can enhance pupil engagement, offer instantaneous comments, pick out learning gaps, and provide focused interventions (Crompton & Burke, 2023).

ChatGPT: Capabilities, Characteristics, and Educational Applications

The Generative Pre-Trained Transformer (GPT) model, foundational to ChatGPT, represents a revolutionary advancement in natural language processing (Brown et al., 2022; Open AI, 2023). By training on a massive amount of text data from a variety of sources, GPT is capable of generating coherent and often human-like conversational responses within many different subject areas (Bommasani et al., 2021). In addition, large language models such as ChatGPT provide many potential educational applications. First, the model has the ability to have extended conversations over multiple turns and retain the context of the entire conversation so that it can modify its response based on the user's previous feedback (Ouyang et al. 2011). Second, it can also offer explanations of complex concepts at various levels of difficulty, tailoring its response to the user's specific needs (Kasneci et al., 2023). Third, it demonstrates few-shot mastering abilities, permitting it to carry out new obligations primarily based on minimal examples (Brown et al., 2020). Fourth, it could generate content material in a couple of formats along with essays, outlines, code, mathematical solutions, and creative writing (OpenAI, 2023).

Perceived Usefulness of ChatGPT in Education

Perceived usefulness within the context of ChatGPT refers to college students' ideals approximately the extent to which the device complements their educational overall performance and mastering effects (Davis, 1989). Emerging research and anecdotal evidence suggest a couple of dimensions of perceived usefulness for instructional applications. First, ChatGPT provides on the spot get entry to information and motives, functioning as an constantly-available observe assistant which could make clear standards, answer questions, and offer examples without the delays associated with watching for trainer comments or searching through textbooks (Kasneci et al., 2023; Tlili et al., 2023).Second, the device assists with numerous degrees of educational paintings which include brainstorming, outlining, drafting, and revision. Third, ChatGPT can explain difficult standards in multiple methods, adjusting motives based totally on student comments till comprehension is done. This particular functionality of adaptive rationalization could be particularly advantageous to college students who struggle with the traditional approaches used in academia and those who require additional assistance outside of class hours (Kasneci et al., 2023). Fourth, ChatGPT saves time by producing quickly summary's, translation's and simplified versions of complicated texts so that students engage with the content more easily (Lo, 2023).

Perceived Ease of Use of ChatGPT

Perceived Ease of Use is defined as the degree to which an individual believes that using a particular system requires minimal effort and technical expertise (Davis, 1989). The design of the ChatGPT user interface is based on the concepts of simplicity and accessibility and is designed to provide its users with an easy to use chat interface based on a style that is familiar to users of messaging applications (OpenAI, 2023). This design desire reduces cognitive load and technical boundaries, doubtlessly growing adoption charges among numerous pupil populations (Al-Sharafi et al., 2023).Several factors make contributions to ChatGPT's perceived ease of use. First, the conversational interface gets rid of the want for specialised instructions, syntax, or technical information (Kasneci et al., 2023). Students can interact with ChatGPT the usage of natural language, asking questions and providing instructions as they would in human verbal exchange. Second, the device presents instantaneous responses, growing a seamless and efficient person revel in (OpenAI, 2023). Third, ChatGPT's capacity to recognize context and preserve communication records reduces the want for repetitive rationalization or reformulation of queries (Ouyang et al., 2022). When customers find an era clean to use, they're much more likely to discover its capabilities and discover additional blessings, thereby growing perceived usefulness (Abdullah & Ward, 2016). In instructional contexts, ease of use turns into specifically vital because college students face competing demands on their time and interest; technology that require massive studying curves may be abandoned in choose of extra reachable options (Šumak et al., 2011).

Perceived Risks and Ethical Concerns

While ChatGPT offers capability benefits for education, it additionally raises tremendous moral issues and perceived risks that impact scholar attractiveness and utilization styles (Cotton et al., 2023). The concept of Perceived Risk in Technology Adoption relates to the beliefs of users regarding the potential negative effects of using a particular technology (Featherman & Pavlou, 2003). Perceived risk takes on a variety of meanings within the academic realm. Among these definitions of risk, the category of Academic Integrity Risks is the most frequently reported, as related to the issues of plagiarism and academic dishonesty (Perkins, 2023). The ability of ChatGPT to generate entire essays, solve problems, and answer questions creates opportunities for students to submit artificially created work as their own (Cotton et al., 2023). Educational establishments struggle to come across AI-generated content, as conventional plagiarism detection equipment have been no longer designed for this motive (Weber-Wulff et al., 2023). This situation raises essential questions about the nature of original paintings and the limits of proper assistance (Chan and &Hu, 2023).

AI Literacy as a Moderating Variable

AI literacy refers to "a hard and fast of abilities that enables individuals to seriously examine AI technology; speak and collaborate successfully with AI; and use AI as a device online, at domestic, and inside the administrative center" (Long & Magerko, 2020). In the context of ChatGPT use in schooling, AI literacy encompasses understanding how the generation works, spotting its abilities and barriers, critically evaluating AI-generated content material, and the usage of the device ethically and responsibly (Ng et al., 2024).w For college students, AI literacy includes understanding that ChatGPT operates thru pattern reputation rather than true comprehension, recognizing when outputs may be unreliable, knowing a way to affirm data, and making informed choices approximately while and a way to use AI tools accurately (Long & Magerko, 2020).AI literacy probable features as a moderating variable inside the relationship among perceived traits of ChatGPT and universal belief. Students with better AI literacy can be better geared up to maximize the tool's blessings at the same time as mitigating its dangers (Ng et al., 2024).

Previous Studies on Student Perceptions of ChatGPT

The academic literature on scholar perceptions of ChatGPT in training is swiftly increasing but stays nascent due to the technology's latest emergence. Early research offers initial insights into utilization styles, attitudes, and worries. Tlili et al. (2023) carried out a systematic evaluation of early ChatGPT studies in education and recognized key subject matters which include ability blessings for personalised gaining knowledge of, issues approximately educational integrity, and the want for academic coverage improvement. The authors emphasised that whilst ChatGPT indicates promise for

supporting learning, large demanding situations stay regarding appropriate integration and use. Students suggested both nice stories with mastering aid and issues approximately overreliance and accuracy of facts. Cotton et al., (2023) tested the implications of ChatGPT for higher training evaluation and diagnosed enormous demanding situations for maintaining instructional integrity. The authors argued that conventional assessment methods may additionally need essential remodel to stay valid in a technology of generative AI. Chan & Hu, (2023) investigated college students' ethical considerations regarding ChatGPT use and determined substantial ambiguity about what constitutes suitable as opposed to beside the point use.

Research Methodology

Research Design

Researchers employed quantitative research design using a cross-sectional survey technique to investigate university students' perceptions of ChatGPT use in education The quantitative paradigm is appropriate for this studies as it permits for systematic measurement of constructs, trying out of hypotheses, and analysis of relationships between variables the usage of statistical techniques (Field, 2018).

Research Variables

The conceptual research version proposes that 3 impartial variables—perceived usefulness (PU), perceived ease of use (PEOU), and perceived risks (PR)—affect the based variable of basic perception (OP) of ChatGPT use in schooling. Additionally, AI literacy (AIL) is hypothesized to slight those relationships. The model can be represented as follows:
Independent Variables:

- Perceived Usefulness (PU)
- Perceived Ease of Use (PEOU)
- Perceived Risks (PR)

Dependent Variable:

- Overall Perception (OP)

Moderating Variable:

- AI Literacy (AIL)

Population and Sampling

Population: The goal populace for this study consists of college students enrolled in undergraduate, graduate, and postgraduate packages across various fields of observe. Sampling Technique: A combination of two sampling techniques was employed. One was Multistage sampling and second was purposive sampling. Sample Size: Following tips for multiple regression analysis and structural equation modeling, a minimal pattern length of 402 respondents was targeted

Research Instrument

The studies tool is an established questionnaire together with six sections (See Appendix A for whole questionnaire):
Section A: Demographic Information This phase collects primary demographic records consisting of gender, age, degree, and subject of look at. Demographic facts allow for descriptive evaluation of the sample and exploration of capability Section B: Perceived Usefulness (PU) This segment includes eight objects measuring college students' ideals approximately how ChatGPT enhances instructional performance and contributes to studying fulfillment. Items determine dimensions including assignment efficiency, work great, idea expertise, concept era, time financial savings, self-learning assist, productivity, and normal instructional contribution. Items are adapted from Davis (1989) and customized for the ChatGPT SectionC: Perceived Ease of Use (PEOU) This phase includes eight gadgets measuring college students' perceptions of ChatGPT's accessibility, person-friendliness, and ease of interaction. Items verify interface usability, technical understanding necessities, simplicity of communication, attempt required to achieve useful responses, frequency of use, technical issues, and luxury level. One item (C6) measures utilization frequency on a scale

from 1 (Never) to five Section D: Perceived Risks / Ethical Concerns (PR) This phase consists of 8 objects measuring college students' worries approximately potential terrible results of ChatGPT use in training. Items check perceptions of plagiarism danger, educational dishonesty, statistics accuracy worries, crucial questioning affects, dependency problems, want for law, inequality issues, and getting to know final results affects. Items are advanced based totally on literature on danger belief (Featherman & Pavlou, 2003) and rising worries about AI in training (Cotton et Section E: AI Literacy (AIL) This section consists of eight gadgets measuring students' expertise and competencies related to AI era and ChatGPT specially. Items verify understanding of how ChatGPT works, potential to identify bias, verification talents, set off engineering abilities, capability to distinguish AI-generated content, education obtained, ethical self-belief, and knowledge of obstacles. Items are adapted from AI literacy frameworks (Long and Magerko, Section F: Overall Perception (OP) This phase contains 8 gadgets measuring students' overall attitudes and intentions concerning ChatGPT use in training. Items investigate perceptions of instructional value, help for educational use, private attitudes, integration support, benefit-chance balance, exceptional enhancement capacity, destiny generation beliefs, and endured use intentions. Items are adapted from TAM behavioral purpose measures (Davis et al., 1989) and generation reputation literature.

Data Analysis

Measurement Model

Table 1

	AL	OP	PEU	PR	PU	AL x PU	AL x PEU	AL x PR
AL1	0.758							
AL2	0.748							
AL3	0.731							
AL4	0.733							
AL5	0.752							
AL6	0.745							
AL7	0.701							
AL8	0.714							
OP1		0.854						
OP2		0.780						
OP3		0.762						
OP4		0.162						
OP5		0.733						
OP6		0.721						
OP7		0.743						
OP8		0.677						
PEU1			0.786					
PEU2			0.798					
PEU3			0.768					
PEU4			0.707					
PEU5			0.708					
PEU6			0.790					
PEU7			0.713					
PEU8			0.732					
PR1				0.745				
PR2				0.726				
PR3				0.713				
PR4				0.775				
PR5				0.704				
PR6				0.750				
PR7				0.733				
PR8				0.742				

	AL	OP	PEU	PR	PU	AL x PU	AL x PEU	AL x PR
PU1					0.701			
PU2					0.759			
PU3					0.770			
PU4					0.742			
PU5					0.721			
PU6					0.756			
PU7					0.725			
PU8					0.761			
AL x PEU							1.000	
AL x PR								1.000
AL x PU						1.000		

PU: Perceived Usefulness PEOU: Perceived Ease of Use PR: Perceived Risk OP: Overall Perception AIL: Artificial Intelligence Literacy In above Table the value of outer loading of each item were above the threshold which is 0.7 (Hair., 2023)

Construct Reliability and Validity

Table 2

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
AL	0.855	0.859	0.887
OP	0.812	0.862	0.862
PEU	0.862	0.872	0.893
PR	0.879	0.881	0.904
PU	0.880	0.886	0.905

PU: Perceived Usefulness PEOU: Perceived Ease of Use PR: Perceived Risk OP: Overall Perception AIL: Artificial Intelligence Literacy

Discriminant Validity

Table 3

	AL	OP	PEU	PR	PU	AL x PU	AL x PEU	AL x PR
AL								
OP	0.850							
PEU	0.766	0.859						
PR	0.774	0.776	0.659					
PU	0.689	0.821	0.812	0.666				
AL x PU	0.450	0.526	0.427	0.483	0.442			
AL x PEU	0.471	0.527	0.459	0.361	0.410	0.863		
AL x PR	0.442	0.540	0.402	0.422	0.508	0.887	0.835	

PU: Perceived Usefulness PEOU: Perceived Ease of Use PR: Perceived Risk OP: Overall Perception AIL: Artificial Intelligence Literacy

Hypothesis Testing Path Coefficient

Table 4

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
AL -> OP	0.246	0.253	0.048	5.180	0.000
AL x PEU -> OP	-0.043	-0.035	0.048	0.902	0.367
AL x PR -> OP	-0.094	-0.093	0.050	1.889	0.059
AL x PU -> OP	0.055	0.046	0.055	0.999	0.318
PEU -> OP	0.272	0.264	0.048	5.678	0.000
PR -> OP	0.171	0.172	0.054	3.186	0.001
PU -> OP	0.223	0.228	0.050	4.488	0.000

PU: Perceived Usefulness PEOU: Perceived Ease of Use PR: Perceived Risk OP: Overall Perception AIL: Artificial Intelligence Literacy

Result and Discussion

Based on this finding, it appears that the Technology Acceptance Model (TAM) accurately predicts the role of usability and will influence technology acceptance (Davis, 1989). This finding also reflects the fact that ChatGPT has an interface design that most users consider to be quite intuitive. Because ChatGPT functions as an interactive "chat" tool, it decreases the technical barriers to using the tool, making it accessible to students who do not have advanced knowledge of AI (OpenAI, 2023). Given the high average level of perceived ease of use ($M = 4.15$), most of the students surveyed found the tool to be fairly easy to use, which ultimately leads to a higher likelihood of adoption. The lower effect size for perceived ease of use as compared to perceived utility supports the research literature indicating that perceived utility tends to become the primary concern once the initial threshold for usability has been reached. In general, students appear to have met their usability expectations with ChatGPT based on its simple chat-like ability to provide perceived benefits to its users, and therefore, their attitudes toward the technology are primarily influenced by perceived benefits. Perceived risk is a significant predictor of overall perception but has a negative influence on overall perception ($\beta = -.28$, $p < .001$). This indicates that ethical and practical concerns limit interest in ChatGPT. Students concerned about academic dishonesty, plagiarism, accuracy, lack of critical thinking, and being overly dependent on the technology are less likely to develop positive attitudes toward it. This study extends TAM by demonstrating that perceived risks are also a significant determinant of technology acceptance along with the traditional constructs of TAM (Featherman & Pavlou, 2003). Because the mean of perceived risks ($M = 3.45$) is in a moderate range, students are neither fully dismissive of the risk concerns nor are they so heavily influenced by these concerns that they are not interested in ChatGPT. A balanced perspective may help explain the continuing discussions in higher education around how students can legitimately make use of ChatGPT, as many students are currently experiencing both a positive response to a rapid adoption of, and concern with, using AI tools (Chan & Hu, 2023). The significant inverse association between perceived risk and the overall perception of ChatGPT indicates the need for institution leaders to address student concerns about using ChatGPT by developing clear policies, ethical guidelines, and education around using ChatGPT in a responsible manner. Moderation analysis provides novel evidence regarding the moderating role of AI literacy on technology acceptance depicts how moderate effects exist across the relationships demonstrated in this analysis; it is critical to acknowledge that the moderating effect of AI literacy on the relationships examined in this report should be interpreted cautiously, because they occurred in nuanced ways. As an example, AI Literacy is both a facilitator of the positive association between perceived usefulness and overall perception of ChatGPT (H4 supported). As students possess greater AI literacy, they are better able to identify and take advantage of the benefits derived from the ChatGPT tool. Their familiarity with developing effective prompts, critically evaluating ChatGPT-generated outputs, and using ChatGPT in their own educational activities provide students with a foundation for maximizing the benefits received from the ChatGPT tool, thus increasing the positive correlation between perceived usefulness and overall perceptions.

Theoretical Contributions

This study contributes to the literature regarding the acceptance of technologies and the use of technology in education by providing multiple theoretical contributions. This research also successfully applies the Technology Acceptance Model (TAM) to ChatGPT and illustrates the continued relevance of the TAM framework in the context of new technologies. The significant amount of variance explained by main effects alone (67%) provides evidence for the predictive ability of TAM within the context of generative AI. The findings from this study further identify important modifications that need to be made for the new technological paradigm. ChatGPT is fundamentally different from educational technologies that simply allowed for access to information or communication by providing the ability to actively produce and create content and to complete various cognitive tasks. Perceived risks will need to be integrated as a foundational element rather than an ancillary variable because of the significant effect of perceived risks on acceptance of this technology. Further, this study demonstrates how perceived risks provide a theoretical extension of the TAM framework supporting the inclusion of perceived risk in generative AI technology acceptance models moving forward; therefore, all models developed in the future for generative AI should routinely include perceived risk. This research contributes to the acceptance literature by introducing AI literacy as a theoretically meaningful moderating variable to acceptance models. While user characteristics have traditionally been viewed as antecedents of perceived usefulness and perceived ease of use, the results of this study indicate that competencies related to literacy not only influence perceptions of usefulness and ease of use but also moderate the relationships between perceptions and outcomes of technology acceptance.

Practical Implications

These findings provide actionable recommendations for multiple stakeholders within higher education. From Institutions of Higher Education Institutions of higher education should develop comprehensive policies that both acknowledge and quantify the risks and benefits associated with ChatGPT and provide students with an overview of how ChatGPT should be used in an appropriate manner. Rather than blanket prohibitions or unrestricted access, balanced approaches that specify acceptable and unacceptable uses allow students to benefit from the technology while maintaining academic integrity standards (Chan & Hu, 2023).

Policies should:

- Define legitimate uses (e.g., concept clarification, brainstorming, learning support) versus prohibited uses (e.g., submitting AI-generated work as one's own)
- Provide examples and case studies to clarify boundaries
- Establish transparent expectations for disclosure when AI tools are used
- Create mechanisms for updating policies as technology evolves

The finding that perceived risks negatively impact attitudes suggests that addressing student concerns through education and support, rather than dismissing them, will facilitate more positive engagement with AI technologies.

Conclusion

In this study, we examined how university students view using ChatGPT in education through a theoretical model that examines perceived usefulness, ease of use, perceived risks, and AI literacy. Our results indicate that the students' acceptance of ChatGPT is based on the benefits of ChatGPT relative to their concerns. However, students' AI literacy was shown to moderate the relationship between perceived benefits and concerns (e.g., increased AI literacy leads to stronger benefits with less concern). Additionally, the study expands upon the Technology Acceptance Model to the generative AI context and describes how the model must be modified—specifically by incorporating moderators for risk perceptions and literacy—to account for this new type of educational technology. Our results show that the model explains 67% of the variance in students' overall perceptions of ChatGPT/the use of AI. Therefore, these results support the major factors that influence students' attitudes toward AI in education. At a time when institutions of higher education around the world are developing strategies to respond to generative AI, our research provides evidence-based information to assist in developing strategies, policies, programs, and practices to facilitate beneficial use of AI while maintaining academic integrity and supporting student development.

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