

# Understanding Egyptian Private University Students' Perception towards ChatGPT using Protection Motivation Theory

*Lamiaa Mostafa and Sara Beshir*

## **Abstract**

Artificial intelligence applications are increasingly integrated into higher education, transforming how students and teachers use learning technologies. Despite the growing popularity of tools like ChatGPT, little is known about the psychological and behavioral factors influencing students' intention to use such tools. This study aims to understand the factors that affect students' behavior and intention to use ChatGPT from the students' perspective. Protection Motivation Theory (PMT), a behavioral health psychology theory, explains and predicts individual responses to emerging technologies. Many factors affect students' intention to use ChatGPT, such as trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness. Three hundred and eleven students were invited to fill in the questionnaire. The data were analyzed using partial least squares structural equation modeling through SMART PLS 3.0. The main findings showed that behavioral intention is affected by trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness. The paper contributes theoretically and practically by introducing a framework that explains users' intentions to use ChatGPT applications.

**Key Words:** ChatGPT, AI, Education, Egypt, University, Protection, Motivation, Theory

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## Résumé

Les applications d'intelligence artificielle s'intègrent de plus en plus dans l'enseignement supérieur, transformant la manière dont les étudiants et les enseignants utilisent les technologies d'apprentissage. Malgré la popularité croissante d'outils tels que ChatGPT, on sait peu de choses sur les facteurs psychologiques et comportementaux qui influencent l'intention des étudiants d'utiliser ces outils. Cette étude vise à comprendre les facteurs qui influencent le comportement et l'intention des étudiants d'utiliser ChatGPT du point de vue des étudiants. La théorie de la motivation de protection (PMT), une théorie de la psychologie comportementale de la santé, explique et prédit les réponses individuelles aux technologies émergentes. De nombreux facteurs influencent l'intention des étudiants d'utiliser ChatGPT, tels que la confiance, la gravité perçue, l'auto-efficacité, la précision de ChatGPT, la nouveauté perçue et l'utilité perçue. Trois cent onze étudiants ont été invités à remplir le questionnaire. Les données ont été analysées à l'aide d'une modélisation par équations structurelles à moindres carrés partiels via SMART PLS 3.0. Les principaux résultats ont montré que l'intention comportementale est influencée par la confiance, la gravité perçue, l'auto-efficacité, la précision de ChatGPT, la nouveauté perçue et l'utilité perçue. Cet article apporte une contribution théorique et pratique en présentant un cadre qui explique les intentions des utilisateurs d'utiliser les applications ChatGPT.

**Mots-clés :** ChatGPT, IA, Éducation, Égypte, Université, Protection, Motivation, Théorie.

## Introduction

Integrating artificial intelligence, specifically ChatGPT, into educational settings has brought a transformative pedagogical shift. With its natural language processing capabilities, ChatGPT offers opportunities for personalized learning, research support, and enhanced interactions between students and educational tools. However, concerns persist regarding the authenticity of generated content and overreliance on AI-driven solutions. This introduction provides a glimpse into the multifaceted role of ChatGPT in education, setting the stage for an in-depth exploration of its impact through a comprehensive literature review. Artificial Intelligence (AI) is the branch of computer science that focuses on creating machines capable of performing tasks that typically require human intelligence. These tasks encompass various activities such as problem-solving, learning, understanding natural language, recognizing patterns, and decision-making. AI systems are designed to mimic human cognitive abilities, aiming to simulate intelligent behavior, reasoning, and problem-solving processes (Ahmed et al., 2023).

ChatGPT, a breakthrough in AI language models, is a pivotal advancement in natural language processing, exemplifying the power of large-scale neural networks in comprehending and generating human-like text. Developed by OpenAI, ChatGPT can converse, offer responses, and provide information across various domains. Its capabilities extend to educational settings, aiding personalized learning experiences, providing feedback, and assisting students with queries. The implementation of ChatGPT in education has shown promise in improving the teaching-learning process, influencing discussions about leveraging AI for educational enhancement. Moreover, there is a growing interest in utilizing ChatGPT to provide sources and citations, leading to discussions on how to cite AI-generated content in academic work (Ahmed & Sharo, 2023).

The research problem addressed in this study stems from the lack of theoretical and contextual evidence on what drives students' intention to use ChatGPT in higher education. While previous studies have highlighted the general benefits of AI in learning, such as efficiency, accessibility, and scalability, few have examined the motivational, emotional, and cognitive factors influencing students' adoption of such tools. Moreover, most existing research is concentrated in high-income countries, with minimal focus on African or Egyptian institutions where educational needs, digital infrastructure, and cultural perceptions of AI differ considerably. This study is therefore driven by the need to understand the psychological and technological factors that influence students' behavior toward ChatGPT in Egyptian universities. Given the rapid growth of AI-assisted learning and the growing reliance on tools like ChatGPT for assignments, revision, and information access, it is critical to assess not only students' usage but also the underlying motivations and barriers from a localized perspective.

To address this gap, the study employs Protection Motivation Theory (PMT), a behavioral health psychology framework that explains how individuals evaluate threats and coping mechanisms when making decisions. PMT has been successfully applied to contexts involving risk, trust, and efficacy, making it suitable for understanding the adoption of AI tools that may raise concerns about accuracy, ethical use, or content validity. The research specifically investigates how variables such as trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness affect students' behavioral intention to use ChatGPT in academic settings. While ChatGPT is often hailed as a revolutionary tool in education, much of the discourse is anecdotal or speculative, lacking evidence-based insights from actual users in higher education. For example, despite claims that ChatGPT improves student engagement, reduces workload, or fosters creativity, little concrete data exists to substantiate these claims within the

Egyptian context. This study fills that gap by empirically examining student attitudes and the factors that guide their use of ChatGPT, using data collected from 311 university students and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM).

The research is guided by the following objectives:

- To examine the factors influencing students' behavioral intention to use ChatGPT in higher education.
- To assess the predictive power of trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness on this intention.
- To develop a theoretical framework based on PMT that explains ChatGPT adoption behavior in a higher education context.

The findings contribute to theory by expanding PMT into the domain of educational technology adoption and to practice by offering a decision-making model that can help educators and policymakers integrate AI tools more effectively and ethically into university curricula. Understanding these motivations is essential for developing informed strategies to ensure responsible, equitable, and meaningful use of AI in education. In the following sections, we will unravel the story of how ChatGPT is revolutionizing the education sector, which can inspire and guide institutions on their path toward the future.

## 2. Literature Review

### 2.1 ChatGPT and education

ChatGPT, developed by OpenAI, is an advanced natural language processing model based on the Generative Pre-trained Transformer (GPT) architecture (Pradana et al., 2023). This model has gained significant attention in various domains due to its ability to generate human-like text responses, making it an innovative tool in artificial intelligence. The extensive usage of ChatGPT's, notably ChatGPT, among millions of students and educators has initiated comprehensive debates concerning their integration within the education field (Rueda et al., 2023)

The implementation of ChatGPT has notably impacted educational settings, offering vast potential in diverse learning environments (Rudolph and Jan 2023). Its language generation capabilities support student learning, facilitate personalized instruction, and assist educators in curriculum development. In education, ChatGPT integration has been explored across various levels and subjects. Empirical studies highlight its efficacy in K-12 education, higher education, and professional training (Pradana et al.,

2023). Applications include supporting language learning, providing instant feedback, and aiding in content creation (Albadarin et al., 2023).

Educational institutions leverage ChatGPT capabilities to enhance student engagement, improve learning outcomes, and automate administrative tasks (Castro, 2023). However, varying perspectives exist on its full potential and ethical considerations regarding its use in educational settings. Mostafa (2022) tested the Extended Technology acceptance model to understand the users' opinions on using the metaverse in education; the results of 661 responses defined the importance of Perceived usefulness and Perceived ease, Social Influence, Security, Technology Availability, and Trust on users' intention to use metaverse technology in education.

The relationship between ChatGPT and education shows the symbiotic nature of technology and learning. ChatGPT's adaptive and responsive nature complements educational goals, enabling personalized learning experiences and facilitating accessibility (Deng & Yu, 2023). However, concerns regarding privacy, biases, and the need for human supervision in utilizing ChatGPT for educational purposes persist (Eke, 2023). While it presents immense potential, ethical considerations and continuous research are crucial in harnessing ChatGPT's full capabilities without compromising educational integrity.

The studies suggest an optimistic response and excitement among the public regarding implementing ChatGPT in educational settings. However, reservations emphasize the need for prudent integration and thorough evaluation of ethical implications; user interactions involving ChatGPT within educational settings have surfaced various concerns, encompassing integrity, privacy worries, and the potential for manipulation (Tlili et al., 2023). Research has explored the impact of ChatGPT on medical education, scientific research, medical writing, ethical concerns, diagnostic decision-making, and the potential for automation and has received criticisms (Temsah et al., 2023).

Despite its positive aspects, ChatGPT exhibits significant shortcomings. The frequently mentioned drawbacks include challenges in output quality, lack of specificity in tasks, and an inability to address specific types of queries. Other limitations encompass restricted reasoning capabilities, occasional adverse effects on productivity due to excessive dependence, limited comprehension of text-based outputs, absence of contextual understanding, predictable responses, difficulties in recognizing accents and dialects, delayed response times, and internet access for verification purposes. These factors collectively

represent the weaknesses observed in the ChatGPT application within K-12 educational settings (Zhang & Tur, 2023).

Mostafa (2023a) aimed to understand Egyptian parents' opinions on using robot tutors for their children in the primary education stages. One thousand two hundred thirty-nine parents responded to an online survey. The results emphasize the impact of perceived usefulness and social influence on parents' opinions.

According to Zhang and Tur, (2023), the opportunities for ChatGPT are to facilitate personalized learning, differentiated instruction, and learning support for students, aid educators in crafting assessments and learning materials, emphasize the need for clear usage policies, promote critical thinking and reflection, revolutionize traditional teaching methods, supports AI-driven curriculum development, advocates for further research to establish best practices, offers training to educators for effective ChatGPT utilization, provides aid to English as a foreign language (EFL) students, encourages the integration of AI in education, and contributes to the democratization of education. Kolade et al. (2024) conducted a quasi-experimental study comparing the responses of students in Nigeria and the UK to the use of ChatGPT in academic assessment. The researchers used ChatGPT to generate essays based on a typical assessment brief and evaluated the outputs for originality and quality. The findings revealed that ChatGPT could produce high-quality, original essays across distinct accounts, but faced challenges with generating multiple unique outputs from the same account and accurate referencing. These results underscore significant implications for both Nigerian and UK higher education systems, prompting a call to rethink assessment strategies. The authors proposed a new AI-assisted assessment framework that moves beyond knowledge recall to include competence and performance, aligning with the evolving demands of lifelong learning in a digital age.

## 2.2 Protection Motivation Theory

Protection Motivation Theory (PMT) is a behavioral theory originating in health psychology, primarily designed to understand and predict individuals' responses to health threats. PMT delves into how people evaluate risks and respond to them based on their perceptions of the threat's severity and their belief in their capability to manage it (TheoryHub, 2023). Originating from health behavior studies, PMT has evolved to influence various fields, including education, where it is utilized as a framework to comprehend behavior change and risk management in academic settings (TheoryHub, 2023). In the educational context, PMT contributes to understanding students' reactions to safety, health, or academic threats, thereby guiding the

development of interventions or educational strategies to foster constructive behavior changes (Maleki et al., 2023). Critically, PMT was chosen in this study over frameworks like TAM or UTAUT because it allows for risk and trust factors to be modeled explicitly, both of which are central to students' decisions to use ChatGPT in uncertain academic environments. While TAM focuses on perceived ease of use and usefulness, it lacks constructs that explain how students respond to perceived threats such as misinformation, academic dishonesty, or privacy concerns—all of which are integral in the case of generative AI tools.

## 2.3 PMT's Relevance in Education

The behavioral Understanding of PMT's adaptation to educational settings offers insights into students' responses to various threats encompassing safety, health, or academic challenges (Zijoud et al., 2023). It explores how students perceive and react to these threats, influencing their behavioral changes and decision-making processes (Hinaa et al., 2023). PMT becomes instrumental in shaping interventions and strategies to manage risks effectively within educational realms. It aids in developing educational policies that foster a secure and conducive learning atmosphere (Faghani et al., 2023).

PMT serves as a lens to assess the effectiveness of educational interventions, facilitating an understanding of their impact on students' behavioral changes and preventive actions (Maleki et al., 2023). By comprehending students' reactions and decision-making processes, PMT contributes to creating educational policies to cultivate safer and healthier learning environments (Kimhasawad et al., 2021). PMT's application in education extends beyond theoretical frameworks, influencing real-world strategies and policies. It aids educators and policymakers in understanding, predicting, and effectively addressing challenges students encounter, thus promoting holistic development within academic institutions (Kimhasawad et al., 2021).

Khani Jeihooni et al. (2022) conducted a cross-sectional study to identify predictors of PMT in primary school students. They revealed significant predictors within the PMT framework, shedding light on the efficacy of PMT in understanding and promoting preventive behaviors against skin cancer among young populations.

Maleki (2023) highlighted the importance of recognizing risk factors to overcome fear and adopt appropriate behaviors among students. Their findings supported the effectiveness of PMT in promoting healthy behaviors by addressing perceived vulnerability and response efficacy.

A study examined the impact of educational interventions rooted in PMT on preventive behaviors. Their research aimed to assess the effectiveness of PMT-based interventions in promoting preventive behaviors among participants, contributing to the body of knowledge on health promotion strategies. The study found that using an educational intervention based on the Protection Motivation Theory (PMT) improved preventive behaviors related to respiratory infections. Therefore, applying this theory-based intervention among hospital staff is advisable as a practical approach to reduce such infections.

Sayed et al. (2022) evaluated the impact of a digital self-learned educational intervention on COVID-19 using PMT. Their study aimed to assess the effectiveness of PMT-based interventions delivered through digital platforms in promoting preventive behaviors and knowledge about COVID-19 among participants. The digital educational intervention, grounded in the Protection Motivation Theory (PMT), significantly enhances non-health university students' understanding of COVID-19, their motivation to protect themselves, and their adoption of self-protective behaviors. Consequently, PMT is widely acclaimed as a foundation for educational interventions related to COVID-19 and other similar outbreaks. Existing literature underscores ChatGPT's transformative role in education but also highlights the complexities of its adoption. While some frameworks (e.g., TAM, UTAUT) have been employed in related contexts, they often ignore psychological risk perceptions and trust-based decision-making that are crucial in the case of generative AI. PMT offers a nuanced approach to capture both motivation and apprehension, aligning with the psychological underpinnings of ChatGPT usage in higher education.

Despite emerging work in Africa, there remains a lack of empirical research examining ChatGPT adoption through validated behavioral theories, such as PMT, in the Nigerian higher education context. Most studies either provide descriptive insights or focus on general digital tools. This study bridges this gap by critically evaluating how trust, perceived severity, self-efficacy, perceived usefulness, novelty, and ChatGPT accuracy influence students' behavioral intention to use the tool

**Table 1 summarizes previous research and highlights the similarities and differences between it and this study.**

Paper	Model	Country	Sample	Findings
Fu et al. (2024)	UTAUT +PMT	Indonesia	445 students and lecturers	The benefits we perceive, such as the value of learning and the enjoyment it brings, really drive people to use ChatGPT. Factors like how effective users feel their responses are and their confidence in their abilities play a big role in shaping their intentions. Additionally, things like educational background and gender can influence how people behave when using it
Strzelecki (2023)	UTAUT	Polish	503 university students	When it comes to higher education students, habits, expectations of performance, and the fun factor are crucial in predicting how likely they are to adopt ChatGPT. The strongest factor influencing their behavior is their intention to use it, closely followed by their personal willingness to innovate.
Yee et al. (2024)	UTAUT	Hongkong	483 under graduate students	Trust is a major player in predicting how likely someone is to use ChatGPT for assessments. However, feelings of moral obligation and perceived risks can act as significant hurdles. Interestingly, perceived risk doesn't seem to affect the relationship between trust and the intention to use.
Menon and Shilpa (2023)	UTAUT +PMT	India	Interviewed 32 ChatGPT users	Factors from the UTAUT model, along with perceived interactivity and privacy concerns, have a notable impact on how people accept and use ChatGPT. Age and experience can also change how these factors play out.

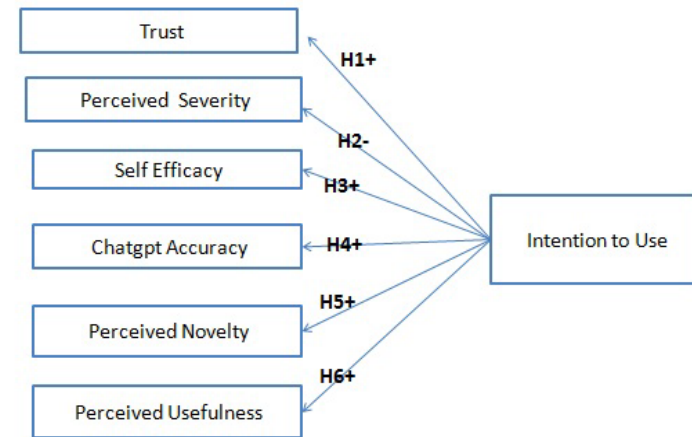
Shahsavari and Choudhury (2023)	UTAUT	USA	476 chatgpt user	When users have high expectations for performance and view the risks and rewards positively, it greatly influences their decision-making and intention to use ChatGPT for self-diagnosis.
Ma and Huo (2023)	UTAUT	China	160 webchat users	Social influences, the novelty of the tool, and its human-like qualities enhance performance expectations. On the flip side, the fun factor, novelty, and human touch can negatively affect how much effort users expect to put in, ultimately shaping their attitudes toward accepting ChatGPT.
Panggabean et al., 2025	UTAUT + PMT	Taiwan and Indonesia	402 Chatgpt users	This study reveals that the perceived severity of the threat posed by ChatGPT can lower the intention to use it. On the other hand, factors like self-efficacy, response efficacy, performance expectations, and task efficiency significantly enhance both the intention to use and the actual use of ChatGPT in educational settings. The fsQCA method identifies three distinct configurations for both using and not using ChatGPT.
(Zijoud et al., 2023)	PMT	Iran	90 staff from medical laboratories	PMT effectively explains student behavioral responses to academic challenges. Emphasizes perceived severity and efficacy as core drivers.
(Hinaa et al., 2023)	PMT, TPB	University Employees	Malaysia	findings confirm the significant contribution of institutional governance in motivating protection behavior among employees of HEIs

(Faghani et al., 2023)	PMT	384 Agricultural Student	Iran	The study found that students' green behavior is mainly influenced by their green intention, which acts as a key mediator between psychological factors and actual behavior. Strengthening green intention is essential for encouraging environmentally friendly actions.
(Maleki et al., 2023)	PMT	104 males	Iran	The findings suggest that <b>PMT-based education can effectively enhance adolescents' protective behaviors against skin cancer in the short term.</b>
(Kimhasawad et al., 2021)	PMT	102 Caregiver Child	Paris	The findings suggest that <b>PMT-based programs are more effective</b> than standard methods in promoting early oral health care behaviors among caregivers.
Khani Jaihooni et al. (2022)	PMT	400 primary school students in rural areas of Fasa	Iran	the experimental group showed significant improvements in all PMT constructs (e.g., perceived severity, self-efficacy, response efficacy) and in actual protective behaviors. PMT constructs were able to predict 58.6% of the variance in skin cancer prevention behaviors, demonstrating the effectiveness of PMT-based education in influencing long-term protective behaviors in children

Sayed et al. (2022)	PMT	240 children aged 3–7 years	Iran	The findings revealed that PMT constructs explained 41% of the variance in protective behaviors, with perceived reward and self-efficacy being the most influential predictors. All PMT components were significantly correlated with protective behaviors, indicating that PMT is an effective framework for designing educational interventions to improve COVID-19 prevention among high-risk children with CHD.
Our article	PMT	311	Egyptian university students	This study aims to understand the factors that affect students' behavior and intention to use ChatGPT from the students' perspective. Protection Motivation Theory (PMT) is a behavioral health psychology theory that aims to understand and predict individuals' responses. Many factors affect the intention of students to behave, such as trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness

**3. Research Methodology**  
**3.1 Hypothesis Formulation**

**Figure 1: Research Model For the Independent variables:**



**Trust:**

Trust is defined as the extent to which users in education believe that ChatGPT is secure and does not share private information (Wong & Lai, 2022). ChatGPT must handle the information of users (Zhang et al., 2022).

Hypothesis 1 (H1): Trust can significantly affect Behavioral Intention

**Perceived Severity:**

Severity refers to assessing risk occurrence, and high perceptions of severity will promote risk prevention behaviors. PMT defines severity as the level of harm to individuals and vulnerability as the possibility of harm to individuals (Rogers, 1975).

Based on previous researchers, Severity shows the extent to which individuals consider the seriousness of using ChatGPT as a threat (Lin et al., 2023; Floyd et al., 2000; Ruan et al., 2020).

Hypothesis 2 (H2): Perceived Severity can significantly affect behavioral intention

**Self-Efficacy:**

Self-efficacy (SE) refers to understanding the user's capacity to organize and guide the action required to tackle certain situations in the future (Wood Bandura, 1989). According to previous researchers, self-efficacy affects user behavior (Al-Emran et al., 2023).

Hypothesis 3 (H3): Self-Efficacy can significantly affect Behavioral Intention

**ChatGPT Accuracy:**

Universities use different AI applications in education, providing an accuracy level in the learning management system (Khan & Jawaid, 2020; Sa'di et al., 2021).

AI applications can be used for education accuracy (Tereseviciene et al., 2020). Instructors must focus on the accuracy of exams (Palloff & Pratt, 2008). Ćwil (2019) insisted that universities provide suitable conditions for lecturers to conduct efficient AI applications. Mun and Hwang (2024) investigated how users' intentions to stick with ChatGPT are ultimately impacted by their perceptions of the usefulness of the information and their level of trust in the information source, as well as how much these perceptions are predicted by the five essential characteristics of information quality: accuracy, richness, timeliness, format, and relevance. Structural equation modeling was used to analyze data gathered from ChatGPT users. The results showed that trust in ChatGPT as a source and the perceived usefulness of the information were significantly positively correlated with each of the five information quality attributes.

Hypothesis 4 (H4): ChatGPT Accuracy can significantly affect Behavioral Intention

**Perceived Novelty:**

Students' adoption of AI's applications in the higher education context. The novelty of the ChatGPT design can be a crucial factor motivating the acceptance of interactive technologies such as ChatGPT s (Mugge & Dahl, 2013; Polyportis & Pahos, 2024).

Hypothesis 5 (H5): Perceived Novelty can significantly affect Behavioral Intention.

**Perceived Usefulness:**

Perceived usefulness is defined as "the individual's subjective perception of and belief in the efficacy of implementing specific information technologies or work processes" (Khani Jeihooni et al., 2022; Mostafa, 2023b, p. 124)

Hypothesis 6 (H6): Perceived Usefulness can significantly affect Behavioural Intention

For the dependent variable:

**Behavioral Intention:**

Educational institutions usually try to understand user behavior by using new applications like AI (Mostafa, 2022). It is essential to understand the factors that affect a user's decision to use a new application (Maleki et al., 2023; Lin, 2023; Mostafa, 2023a; Mostafa, 2023b; Ruan et al., 2020). Table 2 represents a summary of the selected variables extracted from previous research.

**Table 2: Summary of Literature Review**

Paper	Trust (TR)	Perceived severity (PS)	Self-efficacy	ChatGPT accuracy	Perceived novelty	Perceived usefulness	Behavioral Intention
Zhao et al., 2018	x	x					
Singh, et al., 2022		x	x	x	x	x	x
Khani Jeihooni et al. (2022)		x	x				
Maleki (2023)			x				
Rakhshani et al. (2024)		x	x				
Sayed et al. (2022)		x	x				
Lin et al, 2023	x	x	x				

Polyportis and Pahos (2024)	x			x	x		
Mostafa, 2023b						x	

### 3.2 Data collection

A questionnaire was conducted involving 311 Egyptian students. The survey involves six independent variables, one dependent variable, and five demographic variables. Twenty-three questions are placed in the questionnaire, and the Likert-type five-level scales are employed. The options for each question use points 1 to 5 to represent "extremely disagree," "disagree," "neutral," "agree," and "extremely agree," respectively. Results are measured using two statistical software: SPSS 25.0 and AMOS 23.0. Descriptive analysis and a reliability test were conducted. SEM was established, and the confirmatory factor analysis and hypothesis verification were conducted.

Human subjects were interviewed for this study, and all procedures were carried out in compliance with the Helsinki Declaration (La Vaque & Rossiter, 2001) and its subsequent amendments, as well as the institutional and/or national research committee's ethical standards. Participants were fully informed about the study's purpose, the voluntary nature of their participation, and their right to withdraw at any time without incurring penalties before the interviews. All participants provided written informed consent. Any identifying information was eliminated from the data during analysis and reporting, and confidentiality and anonymity were guaranteed.

In addition to gathering five items of demographic data, the questionnaire used in this study was thoughtfully designed to measure six independent variables and one dependent variable. There were 23 items in all, all of which were designed to support the goals of the study and were supported by pertinent research to guarantee content validity. To capture the intensity of participants' attitudes and perceptions, a five-point Likert scale from "extremely disagree" (1) to "extremely agree" (5) was used. This produced nuanced data that could be statistically analyzed. 311 Egyptian students provided the data, guaranteeing a sizable sample size for the use of sophisticated statistical methods. Strong data analysis was made possible using AMOS 23.0 and SPSS 25.0. First, reliability tests and descriptive statistics were conducted to evaluate the consistency.

Appendix A represents the questionnaire, and Table 3 represents the questions mapped to the research variable and its items.

**Table 3: Questions and Variable Items**

Latent Variable	Item	Question
Trust	TR1	I believe that ChatGPT is competent and effective in handling my assignments and projects.
	TR2	I believe ChatGPT is trustworthy.
		I believe that ChatGPT provokes my private data
Perceived severity	PS1	I feel secure when using ChatGPT.
	PS2	I feel ChatGPT is secure when making my assignments and projects
	PS3	I feel secure providing personal information when using ChatGPT.
Self-Efficacy	SF1	I can use ChatGPT without any help from others
	SF2	I can use ChatGPT without much effort.'
ChatGPT Accuracy	CA1	Services offered by ChatGPT are secure
	CA2	ChatGPT provides accurate data.
Perceived Novelty	PN1	ChatGPT is different from the other devices
	PN2	ChatGPT is unique.
Perceived Usefulness	PU1	I find ChatGPT very useful in my daily life.
	PU2	'Using ChatGPT helps me to complete my tasks efficiently.'
Behavioral Intension	BI1	Given the opportunity, I will use ChatGPT
	BI2	I am willing to continuously use ChatGPT in the near future.
	BI3	I am open to using ChatGPT as my mainly method to manage education.
	BI4	I intend to continuously use ChatGPT in the future.

## 4. Discussion of Results

### 4.1 Descriptive Statistics

A survey was created using an online questionnaire. Three hundred and eleven participants were invited by email and Facebook Messenger to participate in this survey. Data collection lasted for 30 days. Of the 330 responses received, 311 were considered valid for further analysis after verifying the incomplete questionnaire and data. Detailed descriptive statistics of respondents' characteristics are shown in Table 4.

**Table 4: Respondents' Profile**

Attribute	Category	Frequency	Percent	
Gender	Male	158	50.8%	
	Female	154	49.5%	
Major	Accounting	103	33.1%	
	Accounting Information System	35	11.2%	
	Finance	40	12.8%	
	Human Resources	15	4.8%	
	Industrial Engineering	3	0.9%	
	Marketing	81	26.0%	
Academic	Pharmacy	39	12.5%	
	Year			
Year	First	19	6.1%	
	Second	7	2.2%	
	Third	274	88.1%	
	Fourth	14	4.5%	
Governorate	Al-Gharbiah	5	1.6%	
	Alex	253	81.3%	
	Assuit	6	1.9%	
	Cairo	18	5.7%	
	Eldakhlea	6	1.9%	
	Residency	Elbehera	5	1.6%
		Fayoum	9	2.8%
		Giza	8	2.5%
		Kafrelshikh	1	0.3%
		Mansoura	2	0.6%
New Valley		2	0.6%	
Portsaied		2	0.6%	
Age	16-18	8	2.5%	
	19	14	4.5%	
	20	145	46.6%	
	21-28	147	46.7.2%	
Total	<b>Total</b>	311		

#### 4.2 Reliability Analysis

Twenty-three items relevant to seven constructs of the proposed research model were selected from previous literature and enhanced based on the specific topic of this study. Cronbach's alpha coefficient was used to determine the reliability of the questionnaire. It examines how closely

related a set of items are as a group (Sekaran, 2003). Cronbach's alpha coefficient is equal to or greater than 0.7, similar to construct constraints based on (Kannan and Tan,2015) proved previously. All items in the survey were measured using a five-point Likert scale ranging from (1) strongly agree to (5) strongly disagree, as shown in Table 5.

**Table 5: Respondents' Profile**

Construct	Cronbach's alpha	Items
Trust (TR)	0.87	2
Perceived severity (PS)	0.82	3
Self-efficacy	0.79	2
Chatgpt accuracy	0.89	2
Perceived novelty	0.75	2
Perceived usefulness	0.88	2
BI	0.91	4
Total	-	17

In this study, the reliability of each construct was evaluated using Cronbach's alpha coefficient. All constructs demonstrated Cronbach's alpha values equal to or greater than 0.70, indicating acceptable to good internal consistency. This suggests that the items within each construct were sufficiently correlated and reliably measured the same underlying concept. According to standard guidelines, a Cronbach's alpha of 0.70 or above is considered acceptable for social science research, confirming that the scales used in this study were reliable and suitable for further analysis.

#### 4.3 Discriminant Validity (DV)

On the other hand, the recommendations of Fornell & Larker (1981) were followed to ensure the discriminant validity of the constructs. The analysis indicated that all constructs possessed a high discriminant validity, where the findings showed that the square root of AVE of each construct is higher than the correlations between the construct and all other constructs. Table 6 shows the results of the discriminant validity assessment.

**Table 6: Discriminant validity assessment**

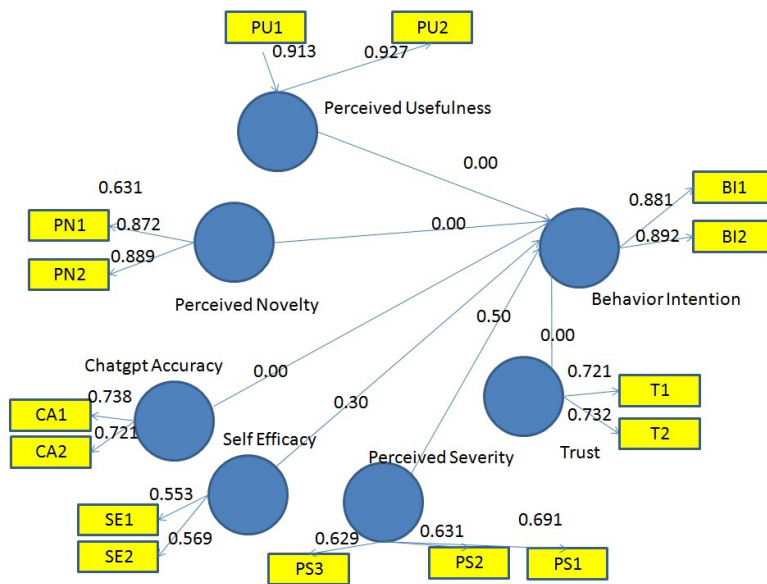
Item	TR	PS	SE	CA	PN	PU	BI
TR	<b>0.852</b>						
PS	0.501	<b>0.813</b>					
SE	0.752	0.881	<b>0.732</b>				
CA	0.256	0.501	0.321	<b>0.950</b>			

PN	0.458	0.586	0.341	0.271	<b>0.863</b>		
PU	0.581	0.758	0.815	0.458	0.256	<b>0.789</b>	
BI	0.501	0.881	0.682	0.229	0.457	0.427	<b>0.881</b>

#### 4.4 Hypothesis Results

Trust represented in H1 was supported since our findings confirmed the significant relationship between trust and behavior intention. These findings agreed with the results of (Zhao and Bacao, 2021), which empirically proved the importance of trust in using applications, as results approved by (Polyportis and Pahos (2024)) that tests using ChatGPT ChatGPT's to be used in higher education.

Figure 3: SmartPLS output of the bootstrapping approach



Perceived severity represented in H2 and Self-efficacy H3 is not supported as it agrees with the results of (Rakhshani et al., 2024), in which severity does not affect student behavior intention to use ChatGPT. Rakhshani et al. (2024) tested the Effect of educational intervention based on protection motivation theory on preventive behaviors. As the results showed, students are unconvinced that ChatGPT's can affect damage experienced when using this application. Students also determined that self-efficacy and taking preventative action when using ChatGPT's will not affect their usage.

ChatGPT accuracy hypothesis H4 is supported by this research and the previous researchers (Polyportis and Pahos, 2024; Singh et al., 2022) in which the results of the ChatGPT accurate level motivate students to use ChatGPT more in their learning process.

Perceived Novelty hypothesis H5 is supported in that the students in the university period are willing to use any new applications and are interested in trying new trends like metaverse and AI. The results agreed with (Polyportis & Pahos, 2024; Singh et al., 2022).

The perceived usefulness hypothesis H6 is supported, and the results were approved by (Singh et al., 2022 and Mostafa, 2023b); university students recognized the importance of ChatGPT's and the benefits of using AI in education.

The results of this study closely mirror what we already know about the Protection Motivation Theory (PMT) and how users behave with new technologies in educational settings. The crucial role of "trust" in shaping behavioral intentions, as shown in H1, aligns with the findings of Zhao and Bacao (2021), who pointed out that trust is a key element in how users engage with applications. This idea is further backed by Polyportis and Pahos (2024), who confirmed that trust plays a significant role in students' acceptance of ChatGPT in higher education. On the flip side, the rejection of H2 and H3, which pertain to perceived severity and self-efficacy, echoes earlier research by Rakhshani et al. (2024), where perceived severity didn't strongly influence behavioral intentions in educational contexts. Just like the students in Rakhshani's study, those in this research didn't see potential risks or their ability to manage those risks as major factors in their decision to use ChatGPT.

Moreover, the support for H4, H5, and H6, which cover ChatGPT's accuracy, perceived novelty, and perceived usefulness, reflects wider trends in how educational technology is being adopted. The findings on accuracy (H4) back up previous studies by Polyportis and Pahos (2024) and Singh et al. (2022), highlighting that when AI tools deliver high-quality results, they boost user trust and engagement. The perceived novelty (H5) was also supported, aligning with the idea that university students are generally open to embracing new technologies, including AI and the metaverse (Singh et al., 2022). Finally, the affirmation of perceived usefulness (H6) reinforces the conclusions of Singh et al. (2022) and Mostafa (2023b), who showed that students see real educational benefits from using AI tools like ChatGPT. Together, these findings emphasize the importance of PMT-based frameworks in shaping educational policies and practices, pointing out

which psychological factors educators and institutions should focus on to promote responsible and effective use of technology.

### 5. Conclusion and Future Work

Technological developments in Artificial intelligence are affecting many fields. Recent advancements in AI have implications for education as these models can understand and generate human-like text (Adiguzel et al., 2023). AI applications can transform the learning process. However, the usage of AI in education also raises concerns about assessment and evaluation (Mostafa, 2023b). This research focused on understanding university students' perspectives on using ChatGPT. It understood the factors that affect the intention to use ChatGPT.

Unfortunately, many variables affect the learning process other than student performance, including trust, perceived severity, self-efficacy, ChatGPT accuracy, perceived novelty, and perceived usefulness. It was clear that students enjoyed the usage of ChatGPT in the education process.

Universities need to understand the importance of using new technologies in education, like ChatGPT's, but also understand the drawbacks and control their usage by the students. Generation Z depends on applications in their daily activities, so when they find AI applications that will ease the learning process, they will use them heavily in most educational activities. Universities should provide explicit learning outcomes when presenting courses and curriculum designs. The capabilities of AI tools can address curriculum designs. Universities must develop rules and policies to use AI technologies, such as ChatGPT, effectively.

The results of this study carry significant weight for both how institutions operate and the larger landscape of educational policy. On the institutional side, universities need to acknowledge that Generation Z students are increasingly turning to AI tools like ChatGPT for their academic work. It's essential for them to think about how to incorporate these technologies into the learning experience in a thoughtful and ethical way. This means creating clear guidelines and policies regarding the use of AI in assignments, assessments, and research to uphold academic integrity while also tapping into the educational advantages that AI can offer. Additionally, schools should rethink their curricula and course structures to include specific learning outcomes that support AI-assisted learning, ensuring that students not only know how to use these tools effectively but also grasp the underlying concepts. On a wider policy scale, educational authorities ought to encourage the responsible use of AI in education by backing research, offering training for teachers, and setting up national frameworks for AI integration that

consider both the benefits and potential pitfalls. The limitations of this study also point to the necessity for more extensive datasets and inclusive research that involves educators and postgraduate students, which can help shape well-rounded policy development.

Two limitations are stated in this study. First, the dataset of the students was limited to 311. More students should be involved in this process. The second limitation is the number of selected variables. Selected variables were limited to trust, perceived severity, self-efficacy, ChatGPT accuracy, novelty, and usefulness. Future studies must focus on including postgraduate students' and teachers' opinions; ChatGPT can also be used in curriculum development.

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