Investigating Factors Influencing the Utilization of ChatGPT Among Students in Higher Accounting Education: Expanding the Technology Acceptance Model

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Abstract: The study investigated the factors influencing the behavioural intention to utilize ChatGPT among accounting students in higher education. Drawing on the technology adoption model, the research explores how self-efficacy and perceived risk affect their intention to adopt ChatGPT as a learning aid. The study adopted a simple random sampling technique and gathered data from 200 accounting students from Ghanaian universities. The data gathered was measured using PLS-SEM technique. The study found that the most crucial factor influencing the behavior intention toward ChatGPT among accounting students is perceived usefulness. The study also found that attitude is also very significant factor affecting the behavioural intention to adopt ChatGPT. Perceived usefulness and perceived ease of use were found to have positive relationships on student's attitude toward ChatGPT adoption. The study also found that whereas self-efficacy showed a positive effect on attitude, perceived risk showed a negative effect on attitude toward ChatGPT adoption. The findings underscore the direct influence of self-efficacy and perceived risk in AI adoption and suggest that educational policies should prioritize training programs and promote accountability frameworks around AI tools.

Keywords: ChatGPT, Students, Accounting education, TAM

1. Introduction

Artificial Intelligence has become widely used in education to support academic tasks instead of substituting human tasks. AI intelligence technologies consist of tools such as ChatGPT, Gemini and Copilot (Mustofa et al., 2025). However, the study focuses on ChatGPT adoption by students since it is the most widely accepted and recognized generative AI among educators and students. ChatGPT was built by OpenAI, a business enterprise and developed from large scale language applications including natural language processing (NLP), big data analytics and speech recognition technology. ChatGPT has the ability to generate responses comparable to human user, understand and answer users' questions in a natural and conversational way. In the context of education, it can assist teachers and students to ask complex questions and receive detailed and immediate responses (Menon and Shilpa, 2023; Sundkvist and Kulset, 2024), offers personalized learning support, more interactive and engaging learning experience (Menon and Shilpa, 2023).

Technology in education has evolved with ChatGPT gaining increasing academic interest in higher education in both developed and developing countries. In developing countries like Ghana, ChatGPT can enable academic institutions to democratize access to knowledge, support teachers and students, provide cost-effective learning resources and prepare learners for a digital, AI-driven workforce. However, the potential benefits of ChatGPT is yet to be realized by academic institutions in developing countries. To achieve these benefits, there must be maximum utilization of the technology. The acceptance of ChatGPT among students are crucial for the successful execution of the technology in academic institutions. However, knowledge and understanding relating to drivers affecting students' utilization of ChatGPT are very scarce. Then again, majority of studies have overlooked the role of self-efficacy and perceived risk in the utilization of ChatGPT among students.

Al-Hattami (2025) has found that when users have self-efficacy, it can boost their confidence to accept and engage with e-learning platforms. Then again, perceived risk consisting of technology risk and security risk can have negative impacts on users behavioural intention (Chatterjee et al., 2022). Ferri et al. (2021) have stated that even though perceived risk is significant, only a limited number of studies have integrated the variable into TAM to explain users' adoption decisions.

The aim of this study is to investigate the impact of cognitive factors (perceived usefulness and perceived ease of use and psychological factors (self-efficacy and perceived risk) on the behavioural intention to use ChatGPT by accounting students in higher education.

TAM was the theoretical framework that underlined the study. The reason for utilizing TAM is because of its wide acceptability by prior studies in unravelling factors driving students' acceptance of both existing and new technology. The framework posits that perceived usefulness (PU) and perceived ease of use (PEOU) are fundamental predictors of users' behavioural intention to use ChatGPT. Other studies have proposed that incorporating external variables such perceived risk (PR) and self-efficacy might increase the explanatory power of technology acceptance in higher education. To validate the planned framework, a questionnaire was developed and distributed. A total of 200 valid responses were gathered to authenticate the study's hypothesis.

The study's contribution is as follows: The study builds and extends traditional TAM by examining self-efficacy and perceived risk in the ChatGPT context used in accounting education. It also contributes to theory by exploring how self-efficacy by accounting students affects behavioural intention to use ChatGPT for learning purposes. Also, exploring the impact of perceived risks can inform university policies on acceptable AI use, ensure consistency and fairness.

The research is outlined as follows: Part 2 includes the explanation on TAM theory and subsequently the research hypotheses. Part 3 includes the materials and methods and part 4 includes the data analysis with results in part 5. Part 6 includes the theoretical and managerial contributions and the final part includes the conclusion.

2. Literature Review

Technology Acceptance Model (TAM)

TAM is the theory that underpinned this study. TAM is a well-known individual-level framework that has been adopted by many research to establish relationship between user beliefs, attitudes and intentions (Ly and Ly, 2022). TAM emphasizes PU and PEOU as core determinants. The theory indicates that at the individual level, PU and PEOU drives user AT and both PU and AT drive BI toward technology adoption (Dahri et al., 2024). Due to its lucidity in describing the users' attitude toward digital technology adoption, it has been extensively involved in diversified fields (Xu, Khan and Shahzad, 2024). Prior studies such as Shao et al. (2024) and Ferri et al. (2021) have emphasized that integrating perceived risk and self-efficacy extends the TAM by showing how risk consideration and perceived confidence also shape user attitude. Shao et al. (2024) have indicated that numerous empirical studies have shown that users with high self-efficacy, perceives the technology as useful and simple to apply. Also, Ferri et al. (2021) have also emphasized that perceived risk is a direct determinant of intention and has an adverse effect on intention. .

3. Research Hypothesis

Perceived Usefulness (PU)

In the context of this study, perceived usefulness (PU) denotes the degree to which a student beliefs that using ChatGPT can improve his academic performance (Davis, Bagozzi and Warshaw, 1989). In TAM, PU is one of the most crucial predictors of user's BI (Davis, Bagozzi and Warshaw, 1989). Some scholars have suggested students may perceived ChatGPT in higher accounting education as useful when it promotes the exchange of ideas, provides personalized feedback, continuous learning support, real-time problem-solving (Baig and Yadegaridehkordi, 2024), provides supplementary learning materials (Ortiz-Bonnin and Blahopoulou, 2025). Similarly, other studies indicated positive experiences with ChatGPT such as a reliable responses and efficient task completion contributes to users' belief of its usefulness. Hence, studies such as Dahri et al. (2024) have found that when users perceive ChatGPT as useful, it might influence the attitude of students in higher accounting education to accept. Then again, Shahzad et al. (2024) have found that PU has a significant impact on the behavioural intention of students toward ChatGPT. However, Sukendro et al. (2020) found no relationship between PU and AT among students to use e-learning. Thus, the study hypothesizes that:

H1: PU can positively influence students' AT toward ChatGPT in higher accounting education

H2: PU can positively influence students' BI toward ChatGPT in higher accounting education

Perceived Ease of Use (PEOU)

In the context of this study, perceived ease of use (PEOU) denotes the degree to which the students beliefs that using the technology is ease to use, ease to learn, user-friendly, intuitive and accessible (Davis, Bagozzi and Warshaw, 1989). It is a core determinant of TAM and play a crucial role in technology acceptance (Davis, Bagozzi and Warshaw, 1989). According to Shahzad, Xu and Javed (2024), ChatGPT may be perceived as ease to use in higher education by students if it is characterized intuitiveness user-friendliness and accessibility. Some prior

studies have found a positive and strong impact between PEOU and AT in higher education (Sukendro *et al.*, 2020).This demonstrates the higher the PEOU, the higher the students' behavioural intention would be toward ChatGPT usage in higher accounting education. Also, studies conducted by Amaning (2024) in higher education in Ghana that the inaccessibility of virtual accounting education negatively affected the easiness and success of the system among students/ Also, studies such as Shahzad, Xu and Javed (2024) found that PEOU significantly affect students' BI to use technology among students in higher education in China. Thus, the study hypothesizes that:

H3: PEOU can positively influence AT toward ChatGPT in higher accounting education

Self-Efficacy (SE)

SE which was advanced by Bandura (1997) states that behavior is facilitated by the strength of an individual's self-efficacy beliefs. Self-efficacy is explained in this study as a students' evaluation of his or her competence to perform desirable behaviours in specific contexts. It has been emphasized that SE can enable users to effectively organize and implement strategies to have a positive user experience when using ChatGPT (Yao and Wang, 2024). It can enhance easiness, flexibility in learning and foster a positive attitude toward the usage of ChatGPT (Xu, Khan and Shahzad, 2024). Some scholars have emphasized that SE can affect behavioural intention to use and actual use behavior of students (Hatlevik, 2017). Al-Hattami and Almaqtari (2023) have emphasized that when a student has high level of SE, he or she engages with digital technologies in a creative and innovative ways. Then again, (Yao and Wang, 2024) a study conducted among pre-service teachers found that SE can affect their intention toward AI in education. In contrast, Tang, Che-Han and Oanh (2014) found no effect between SE and BI to use e-learning. They claim that in mandatory academic settings, SE may not become invaluable in the usage of e-learning among students in higher educational environment. Thus, the study hypothesizes that:

H4: SE can positively influence students' AT toward ChatGPT in higher accounting education

Perceived risk (PR)

PR refers to an individual's belief about the potential consequences of an event given the extent of uncertainty associated with a specific behavior (Wissal et al., 2021). This means that when students belief that when ChatGPT may become risky to their academic performance and encounter losses, they may refrain their usage. Some studies have emphasized that students may perceive ChatGPT as risky when there are information inaccuracies, security and integrity issues (Ortiz-Bonnin and Blahopoulou, 2025). It may also be perceived as dangerous if the overreliance on ChatGPT would minimize their critical thinking, problem-solving and creative skills (Abbas, Jam and Khan, 2024; Ortiz-Bonnin and Blahopoulou, 2025). Based on these reasons, some prior studies have attempted to link the relationship between PR and AT. In academic context, Ortiz-Bonnin and Blahopoulou (2025) have found that PR has a negative and significant impact on BI to use ChatGPT. Also, Sarosa (2022) have found that security problem was the major PR indicator affecting high school students BI toward using online learning. Thus, the study hypothesizes that:

H5: PR can negatively influence students' AT toward ChatGPT in higher accounting education

Attitude (AT)

In the context of this study, AT can be emphasized as either a positive or negative feelings of the student toward using ChatGPT. It includes behavioural, cognitive and affective elements. Both TAM and the theory of planned behavior consider AT to be a crucial construct that can determine the user's behavioural intention to accept a technology. Masa'deh et al. (2024) used TAM to describe the antecedents affecting the usage of ChatGPT among Jordanian university students and found that AT has a positive influence on BI. Then again, a study conducted by (Hussein, 2017) found that AT is a significant predictor influencing the BI to use e-learning by students. Thus, the study hypothesis that:

H6: AT can positively influence students' AT toward ChatGPT in higher accounting education.

4. Materials and Method

Participants

The population of the study consisted of all accounting students enrolled in bachelors and master's degree at a Ghanaian university. A simple random sampling method was utilized to select the study's samples. The study which spanned for three (3) months from February 2025 to April 2025 provided the researchers with two

hundred and twenty (224) responses. However, two hundred (200) valid responses were validated for further analysis.

Research instrument

The study employed an online questionnaire developed using Google Forms. A content validity was carried out by two academic experts to confirm the validity and accuracy of the measuring items. We further performed a pilot study with twenty-five students engaged in ChatGPT usage and were later dropped after modification of the study. The measuring items consisted of 19 questions which were modified from prior studies. The questionnaire items for PU and PEOU were modified from (Shahzad, Xu and Javed, 2024), SE was modified from (Yao and Wang, 2024), PR was modified from (Kenesei et al., 2025), AT and BI was modified from (Masa'deh et al., 2024). We adopted a five (5)-point Likert scale to measure survey items from 1 (strongly disagree) to 5 (strongly agree).

5. Data Analysis

Measurement Assessment

Construct Reliability

The study employed SmartPLS version 3.0 to measure the construct reliability and validity. Table 1 shows the statistical measures relating to items with constructs including composite reliability (CR) and cronbach alpha (CA). It can be observed in Table 1 that all items loadings range between 0.828 and 0.946. The results how that item loading are acceptable since they are higher than 0.70. The construct reliability was measured using both CA and CR. The CA ranged between 0.802 and 0.883 and the CR ranged from 0.882 and 0.929. According to (Hair, Howard and Nitzl, 2020), a construct reliability is accepted when their CA or CR values falls between 0.70 and 0.95 and hence the construct validity of the study was established.

Convergent Validity (CV)

The study also measured the CV of the constructs using average variance extracted (AVE) AVE determines the average difference shared between the construct and its individual indicators and its value should be 0.50 or above (Hair, Howard and Nitzl, 2020). Table 1 shows establishment of convergent validity since AVEs falls between 0.714 and 0.813.

Table 1: Construct reliability and validity

Construct	CA	CR	AVE
AT	0.802	0.882	0.714
BI	0.860	0.915	0.782
PEOU	0.883	0.927	0.810
PR	0.871	0.913	0.777
PU	0.874	0.914	0.726
SE	0.885	0.929	0.813

Discriminant Validity (DV)

The study also measured the DV using Fornell-Larcker (FL) and heterotrait-monotrait ratio (HTMT). Fornell-Larcker (FL) preliminary assessed to test the discriminant validity of the constructs. Fornell and Larcker (1981) emphasize DV is established when each construct AVE is greater than the squared inter-construct association. Table 2 shows that DV was established since the construct AVE was higher than the squared inter-construct correlation. The HTMT can be explained as the average value of the item associations across constructs in relation to the average value of the item correlation measuring the same construct (Hair et al., 2019). Henseler, Ringle and Sarstedt (2015) suggest that DV is established when HTMT is below 0.90. Table 3 depicts that discriminant validity is also established through HTMT.

Table 2: Fornell-Larcker

	AT	BI	PEOU	PR	PU	SE
AT	0.845					
BI	0.683	0.884				
PEOU	0.593	0.677	0.900			
PR	-0.093	-0.084	0.007	0.882		
PU	0.560	0.695	0.571	-0.027	0.852	
SE	0.601	0.739	0.674	0.029	0.629	0.901

Table 3: HTMT

	AT	BI	PEOU	PR	PU	SE
AT						
BI	0.808					
PEOU	0.696	0.773				
PR	0.095	0.090	0.041			
PU	0.650	0.793	0.645	0.048		
SE	0.692	0.839	0.757	0.043	0.711	

Structural Assessment

After the measurement assessment, the SmartPLS version 3.0 was utilized to examine the path relationship of the structural model. Table 4 and Figure 1 show the path relationship and structural model. The findings show that PU has the highest positive effect on BI ($\beta = 0.455, \rho = 0.00$). The study also found that AT has a very high positive effect on BI ($\beta = 0.429, \rho = 0.00$). The study also found that PEOU has a positive effect on AT ($\beta = 0.282, \rho = 0.001$). The study also found that SE has a positive effect on AT ($\beta = 0.271, \rho = 0.001$). The study found that PU has a positive effect on AT ($\beta = 0.225, \rho = 0.001$). The study found that PR has small and negatively effect on AT ($\beta = -0.097, \rho = 0.074$).

Table 4: Hypothesis testing

Hypothesis	Path	Original Sample (O)	Standard Deviation (STDEV)	T Statistics	P Values
H1	PU -> AT	0.225	0.067	3.341	0.000
H2	PU -> BI	0.455	0.066	6.927	0.000
H3	PEOU -> AT	0.282	0.087	3.253	0.001
H4	SE -> AT	0.271	0.088	3.080	0.001
H5	PR -> AT	-0.097	0.067	1.446	0.074
H6	AT -> BI	0.429	0.072	5.957	0.000

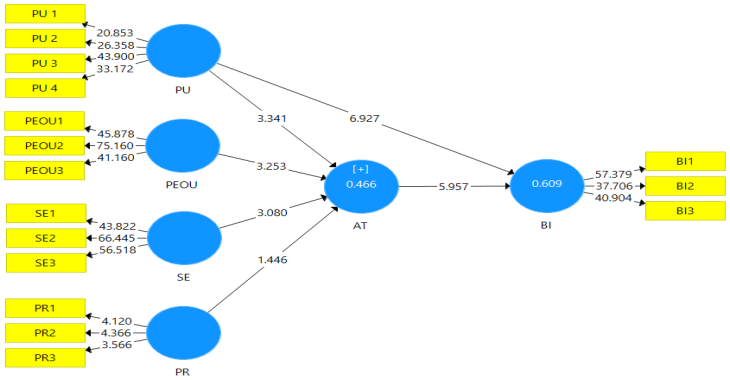

Figure 1: Structural diagram

6. Discussion

The study utilized TAM to evaluate the factors influencing students' utilization of ChatGPT in higher accounting education. The following factors were assessed in this study: attitude and behavioural intention as well as perceived usefulness, perceived ease of use, self-efficacy and perceived risk among students. The study discovered that PU positively impact students' AT toward utilizing ChatGPT in higher accounting education. The findings corroborate with prior studies such as (Sukendro et al., 2020; Dahri et al., 2024; Shahzad, Xu and Javed, 2024). The study also found that PU has the highest positive effect on students' behavioural intention toward utilizing ChatGPT in higher accounting education. This means that the students expect ChatGPT to provide exchange accurate accounting information, provide personalized feedback, adaptive content delivery, and continuous learning support to have a positive feeling and subsequently adopt the technology.

The study found that perceived ease of use (PEOU) has positive effect among students to use ChatGPT. The findings agrees with prior studies such as Shahzad, Xu and Javed (2024). It is plausible that when ChatGPT is user-friendly, easy to learn, good user interface and intuitive, it might increase their positive feeling. We also align with studies such Amaning (2024) that if the students do not feel that ChatGPT is incompatible and inaccessible, they may abort it due to uneasiness. However, if ChatGPT is compatible and easily accessible by students remotely, they may be encouraged to have positive attitude towards it.

The study found that SE has positive effect on AT among students to use ChatGPT in higher accounting education. The study's findings align with prior studies such as (Yao and Wang, 2024) which found a positive effect between self-efficacy and attitude. The findings demonstrate that SE can improve the adaptability of students toward digital learning tools. This also implies that SE can improve the easiness and flexibility in learning which can foster a positive attitude to use ChatGPT. Also, SE can also enable the students to have a positive AT and apply the technology in a creative and innovative manner and thus align with findings of prior studies such as (Al-Hattami and Almaqtari, 2023).

The study found that PR has a small and negative effect on students' AT to use ChatGPT. The findings align with Ortiz-Bonnin and Blahopoulou (2025). This implies that when ChatGPT leads to information inaccuracies, privacy and security issues, students may have a negative feeling concerning its usage. Their attitude toward ChatGPT may also be impeded if there is a high likelihood that the usage of digital learning platform can expose them to various ethical issues such as plagiarism, non-transparency, information bias and virus and malware attacks.

The study found that AT has a high positive effect on students' BI to use ChatGPT. The study's finding aligns with the results of Hussein (2017) which found AT as a predictor affecting the behavioural intention to use e-learning by students. Also, a positive AT shows that other important determinant influence the students' AT to use ChatGPT than PR.

7. Theoretical and Managerial Implication

The study contributes to present knowledge by adopting TAM to examine the factor affecting the utilization of ChatGPT in higher accounting education. The study found that PU, PEOU, SE and PR explained 46.6% of the variation in AT and both PU and AT explained 60.9% of the variations in BI to use ChatGPT. The findings shows that TAM can be very effective in the explaining the application of ChatGPT in higher accounting education in the context of developing countries. The study's findings show that SE and PR can be recognized as an antecedent of AT and BI to adopt ChatGPT among accounting students. The study also reaffirms the main assumption in the TAM confirming that PU and PEOU are crucial antecedents affecting AT and BI to use technology. The findings of the study strengthens the theoretical knowledge that cognitive beliefs and psychological beliefs are both critical in explaining ChatGPT among students in higher accounting education

The study has some managerial implications. The study found that when students have high self-efficacy, the goal of integrating ChatGPT into accounting curriculum can be achieved by educators. Also, the findings show that ChatGPT must be implemented systematically to allow mastery by students and to use ChatGPT ethically. Also, AI literacy courses and mentoring sessions must be organized so that less tech-savvy students have confidence to use the technology ethically and appropriately. Then again, administrators and educators can adopt student feedback on ChatGPT to improve teaching outcomes. Universities must establish clear guidelines on ethical AI use to mitigate risks such as cyber security issues and plagiarism. They must also provide training and accountability frameworks around AI tools.

8. Limitations and Future Studies

First, the study was carried out among students in the accounting profession and future studies could replicate the studies among students in other academic disciplines in similar setting to prove or disprove the findings. Moreover, the study was conducted in Ghana and the findings might not apply to participants in the setting of other developing countries. Hence, future studies are recommended to replicate the study in other context. Secondly, data was gathered utilizing a self-administered questionnaire allowing participants to report their own perceptions and experiences. Moreover, 53.4% and 39.1% of the variance in AT and BI were unaccounted for by the independent constructs in the study. Thus, future studies should measure the framework with addition elements such as ethics, subjective norm and trust that could affect both AT and BI. Future studies.

Ethical declaration: Ethical clearance was not required. However, informed consent was sought from the participants involved in the research study.

AI declaration: AI tools were not used for the creation of the paper.

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