

DOES CHATGPT FIT THE TASK? AN EVALUATION OF ITS ROLE IN SUPPORTING ACCOUNTING STUDENTS' ACADEMIC PERFORMANCE THROUGH THE TASK-TECHNOLOGY FIT

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ABSTRACT

This study tests a Task–Technology Fit (TTF) model for ChatGPT adoption in higher education. A purposive sample of 300 accounting students at UIN Raden Mas Said completed a two-part questionnaire (demographics; constructs on five-point Likert scales; AI use by frequency). PLS-SEM analysis confirmed that TTF significantly influences ChatGPT usage, which in turn positively affects academic performance. Future research should expand across disciplines and institutions, adopt longitudinal designs, and explore additional variables such as digital ethics and plagiarism. Mixed-method approaches are also recommended to capture students' lived experiences with AI integration in academic settings.

Keywords: Task–Technology Fit; ChatGPT; Performance Impact

INTRODUCTION

The digital revolution is characterized by the emergence of innovative technologies that drive systemic transformation (Samala et al., 2025). Emerging digital technologies include Artificial Intelligence, the Internet of Things, Blockchain, and immersive technologies such as Virtual Reality and Augmented Reality. Among these innovations, Artificial Intelligence has emerged as the most transformative, reshaping a wide range of sectors, including education (Al Mamary et al., 2024). Artificial Intelligence encompasses technologies such as machine learning, natural language processing, pattern recognition, and virtual agents, which organizations increasingly integrate into existing information systems to enable new applications and improve decision making processes (Zhao et al., 2023). A prominent example is Chat Generative Pre trained Transformer, a Large Language Model based on transformer architecture and developed by OpenAI (Casella et al., 2023). Designed to produce human-like outputs, AI systems are capable of generating text, images, videos, or code by leveraging large-scale training data repositories (Sánchez-Ruiz et al., 2023).

Prior studies have primarily examined the educational applications of ChatGPT (Kuhail et al., 2023). Students increasingly use Chat Generative Pre trained Transformer as a learning support tool to generate ideas for assignments, research projects, examinations, and writing tasks, which in turn can enhance academic performance (Rasul et al., 2023). Empirical evidence indicates that many students hold favorable attitudes toward its use, as they perceive it to address learning difficulties, improve efficiency, strengthen engagement, and increase motivation (Shoufan, 2023).

Despite this growing acceptance, scholars highlight several concerns related to its academic application. These concerns include risks of academic dishonesty and plagiarism, potential algorithmic bias, subscription costs for premium features, reduced creativity, and apprehension regarding job displacement (Kasneji et al., 2023; Owan et al., 2025). El Seoud et al. (2023) further note that chatbots such as ChatGPT generate responses based on pre trained data and cannot fully analyze highly complex situations or make nuanced decisions under uncertainty.

Effective implementation in higher education therefore requires careful alignment between technology and user context (Chen et al., 2023). This alignment involves consideration of user characteristics, task requirements, technological features, and perceived performance outcomes. The Task Technology Fit model proposed by Goodhue and Thompson provides a foundational framework for this evaluation by emphasizing the degree to which a technology supports users' tasks, goals, and needs (Al Dokhny et al., 2024). In the context of student learning activities, the adoption of such systems is largely driven by their performance-related outcomes (Al-Maatouk et al., 2020).

Previous studies have explored the adoption and effectiveness of AI-based technologies, particularly ChatGPT, through various theoretical frameworks such as the Technology Acceptance Model (Al-Okaily, 2025) and the Unified Theory of Acceptance and Use of Technology (Elshaer et al., 2024). Scholars have applied the Task Technology Fit model to evaluate the alignment between students' academic tasks and e learning technologies in contexts such as Saudi Arabia, demonstrating its contribution to improving information system performance (Alyoussef, 2023). Nevertheless, limited studies have employed the Task Technology Fit framework to examine how ChatGPT usage affects academic performance, particularly in accounting education in Indonesia. A clear understanding of how students use ChatGPT and how this usage influences learning

outcomes remains underdeveloped. Identifying these patterns is essential for evaluating its evolving role and long term potential in higher education.

In response, this study develops and empirically tests a Task Technology Fit model that integrates ChatGPT as an AI assisted learning tool for accounting students. The study further evaluates the extent to which alignment between academic tasks and ChatGPT functionality enhances students' academic performance in higher education.

METHOD

This study employed a questionnaire-based survey distributed both offline and online to accounting students at UIN Raden Mas Said as part of the data collection and sampling procedures. Prior to distribution, the instrument underwent linguistic validation, readability assessment, and pilot testing to ensure its validity and reliability. The questionnaire comprised two sections: (1) respondent demographic profiles and (2) measurement of research constructs using a five-point Likert scale, ranging from "1 = strongly disagree" to "5 = strongly agree." An exception was made for the ChatGPT Use, which was measured using self-reported usage frequency, from "never" (1) to "several times" (5). The variables consist of Task–Technology Fit, ChatGPT Use, and Performance Impact. Data collected from 300 respondents were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM).

RESULTS AND DISCUSSION

Table 1 presents the demographic profile of the 300 student respondents. The majority were female (86.33%) and aged 20 or below (75.33%). Most participants were from the 2024 (40.33%) and 2023 (38.00%) cohorts. ChatGPT was primarily used to support accounting-related learning, including understanding course materials (15.60%), generating ideas for discussions or research (15.40%), and completing academic assignments (15.00%).

Table 1. Profil Respondents

Demographic Aspect	Category	Number	Percentage
Gender	Male	41	13.67%
	Female	259	86.33%
Age	≤ 20 tahun	226	75.33%
	21 – 25 tahun	74	24.67%
Enrollment Year	2021	21	7.00%
	2022	44	14.67%
	2023	114	38.00%
	2024	121	40.33%
Purpose of ChatGPT Usage	Completing coursework and academic tasks	47	15.00%
	Locating and reviewing scholarly references	40	12.84%
	Deepening understanding of accounting concepts and materials	49	15.60%
	Facilitating quicker comprehension of accounting-related problems	32	10.29%
	Validating responses to assignments and practice exercises	28	9.01%
	Preparing effectively for examinations	20	6.52%
	Assisting in the creation of financial reports	13	4.17%
	Interpreting and analyzing financial statement data	15	4.84%
	Exploring current trends and developments in the accounting profession	20	6.32%
	Generating ideas for academic discussions, analytical tasks, or accounting research initiatives	48	15.40%

Source: Data processed by Author (2025)

As presented in **Table 2**, the results of the convergent validity and reliability tests for the constructs of Task–Technology Fit, ChatGPT Use, and Performance Impact indicate strong measurement quality. All items demonstrated factor loadings of ≥ 0.70 , confirming that each indicator validly represents its respective construct.

The Variance Inflation Factor values for all indicators are equal to or below 3.33, which indicates that multicollinearity does not threaten the measurement model. The Average Variance Extracted values for each construct exceed the recommended threshold of 0.50, confirming that each construct explains more than half of the variance in its indicators. In addition, Cronbach's Alpha and Composite Reliability values demonstrate strong internal consistency across all constructs, which indicates that the indicators reliably capture their intended theoretical dimensions.

Table 2. Convergent Validity & Reliability

Indicator	Code	Factor Loading	VIF	AVE	Cronbach Alpha's	Composite Reliability
Task–Technology Fit	TTF		1.000	0.721	0.807	0.886
I find that ChatGPT offers appropriate features to assist in completing my accounting assignments.	TTF1	0.837				
I consider ChatGPT to be an effective tool for enhancing my understanding of accounting concepts and supporting task completion.	TTF2	0.845				
Overall, the functionalities provided by ChatGPT align well with my informational needs in accounting. (Huy et al., 2024).	TTF3	0.865				
ChatGPT Use	USE		1.000	0.713	0.794	0.880
Frequency of ChatGPT Use for Accounting Studies: [] Never [] Rarely (once a week) [] Sometimes (2-3 times a week) [] Often (4-6 times a week) [] Very often (every day)	USE1	0.801				
Estimated Weekly Time Spent Using ChatGPT: [] Less than 1 hour [] 1-3 hours [] 4-6 hours [] 7-9 hours [] More than 10 hour	USE2	0.746				
I use ChatGPT primarily when I need to complete urgent accounting assignments under time constraints. (Aldholay et al., 2018; Huy et al., 2024).	USE3	0.970				
Performance Impact	PI			0.619	0.912	0.928
ChatGPT enables me to complete accounting tasks more efficiently.	PI1	0.762				
It enhances my ability to comprehend and resolve accounting-related problems.	PI2	0.812				
My academic outcomes in accounting courses have improved through the use of ChatGPT.	PI3	0.831				
The tool increases my learning efficiency in grasping complex accounting materials.	PI4	0.831				
It supports the revision process by helping me detect and correct errors in my assignments.	PI5	0.728				
ChatGPT contributes to the achievement of my academic and long-term career objectives.	PI6	0.757				
It facilitates the development of analytical thinking in accounting contexts.	PI7	0.806				
The tool encourages creativity and the generation of innovative solutions in accounting tasks. (Aldholay et al., 2018).	PI8	0.758				

Source: Data processed by Author (2025)

Table 3 presents the results of discriminant validity testing using the Fornell–Larcker criterion, which requires that the square root of the Average Variance Extracted (AVE) for each construct exceeds its correlations with all other constructs (Hair et al., 2019). As shown, the square root of AVE values are 0.787 for Performance Impact, 0.849 for Task–Technology Fit, and 0.844 for ChatGPT Use. These results indicate that each construct shares greater variance with its own indicators than with any other construct in the model, thereby confirming adequate discriminant validity.

Table 3. Fornell Larcker Criterion

Construct	Performance Impact	Task–Technology Fit	ChatGPT Use
Performance Impact	0.787		
Task–Technology Fit	0.689	0.849	
ChatGPT Use	0.504	0.454	0.844

Source: Data processed by Author (2025)

In addition to the Fornell–Larcker criterion, discriminant validity was also assessed using the Heterotrait–Monotrait Ratio (HTMT). HTMT values reflect inter-construct correlations, with thresholds ideally remaining below 0.90 (Hair et al., 2019). As presented in **Table 4**, all constructs exhibit acceptable HTMT values, thereby confirming that discriminant validity is satisfactorily established.

Table 4. Heterotrait-Monotrait (HTMT)

Construct	Performance Impact	Task–Technology Fit	ChatGPT Use
Performance Impact			
Task–Technology Fit	0.795		
ChatGPT Use	0.577	0.554	

Source: Data processed by Author (2025)

Table 5 presents the results of hypothesis testing, confirming that all proposed hypotheses are supported. Hypothesis 1 (H1) reveals a significant effect of Task–Technology Fit on the ChatGPT Use, with a path coefficient (β) of 0.454 and a t-statistic of 10.561. Furthermore, Hypothesis 2 (H2) demonstrates that the ChatGPT Use significantly influences Performance Impact, indicated by a path coefficient (β) of 0.504 and a t-statistic of 12.539.

Table 5. Hypothesis Result

H	Path	β	T Statistics	P Values	Conclusion
H1	Task–Technology Fit -> ChatGPT Use	0.454	10.561	0.000	Supported
H2	ChatGPT Use -> Performance Impact	0.504	12.539	0.000	Supported

Source: Data processed by Author (2025)



CONCLUSION

This study concludes that Task–Technology Fit (TTF) serves as a primary driver for students’ adoption of artificial intelligence tools such as ChatGPT. The findings indicate that ChatGPT usage significantly enhances academic performance by increasing efficiency, strengthening understanding of accounting materials, supporting innovation and analytical thinking, and improving overall learning outcomes. In line with prior research showing that Task Technology Fit promotes technology usage and that usage improves performance, the results affirm the explanatory power of the Task Technology Fit model (Chen et al., 2023; Huy et al., 2024). Importantly, the findings suggest that academic benefits depend more on the alignment between ChatGPT’s features and task requirements than on the frequency of use alone. Effective task–technology alignment therefore plays a central role in generating meaningful learning gains. Future research should extend the analysis across different disciplines and institutions, distinguish between free and premium ChatGPT users, and adopt longitudinal designs to capture evolving perceptions and long term effects. Scholars should also examine emerging variables such as digital ethics awareness and plagiarism behavior, and apply mixed method approaches to gain deeper insight into students’ experiences and challenges when integrating AI into higher education.

REFERENCES

A. El-Seoud, S., Ayman, S. E., Nagaty, K., & H. Karam, O. (2023). The Impact of ChatGPT on Student Learning/performing. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4532913>

- Aldholay, A., Isaac, O., Abdullah, Z., Abdulsalam, R., & Al-Shibami, A. H. (2018). An extension of Delone and McLean IS success model with self-efficacy: Online learning usage in Yemen. *International Journal of Information and Learning Technology*, 35(4), 285–304. <https://doi.org/10.1108/IJILT-11-2017-0116>
- Al-Dokhny, A., Alismaiel, O., Youssif, S., Nasr, N., Drwish, A., & Samir, A. (2024). Can Multimodal Large Language Models Enhance Performance Benefits Among Higher Education Students? An Investigation Based on the Task–Technology Fit Theory and the Artificial Intelligence Device Use Acceptance Model. *Sustainability (Switzerland)*, 16(23). <https://doi.org/10.3390/su162310780>
- Al-Maatouk, Q., Othman, M. S., Aldraiweesh, A., Alturki, U., Al-Rahmi, W. M., & Aljeraiwi, A. A. (2020). Task-technology fit and technology acceptance model application to structure and evaluate the adoption of social media in academia. *IEEE Access*, 8, 78427–78440. <https://doi.org/10.1109/ACCESS.2020.2990420>
- Al-Mamary, Y. H., Alfalah, A. A., Alshammari, M. M., & Abubakar, A. A. (2024). Exploring factors influencing university students' intentions to use ChatGPT: analysing task-technology fit theory to enhance behavioural intentions in higher education. *Future Business Journal*, 10(1). <https://doi.org/10.1186/s43093-024-00406-5>
- Al-Okaily, M. (2025). Implementation of generative AI tools in accounting education context. *Journal of Applied Research in Higher Education*. <https://doi.org/10.1108/JARHE-08-2024-0422>
- Alyoussef, I. Y. (2023). Acceptance of e-learning in higher education: The role of task-technology fit with the information systems success model. *Heliyon*, 9(3). <https://doi.org/10.1016/j.heliyon.2023.e13751>
- Cascella, M., Montomoli, J., Bellini, V., & Bignami, E. (2023). Evaluating the Feasibility of ChatGPT in Healthcare: An Analysis of Multiple Clinical and Research Scenarios. *Journal of Medical Systems*, 47(1). <https://doi.org/10.1007/s10916-023-01925-4>
- Chen, J., Zhuo, Z., & Lin, J. (2023). Does ChatGPT Play a Double-Edged Sword Role in the Field of Higher Education? An In-Depth Exploration of the Factors Affecting Student Performance. *Sustainability (Switzerland)*, 15(24). <https://doi.org/10.3390/su152416928>
- Elshaer, I. A., Hasanein, A. M., & Sobaih, A. E. E. (2024). The Moderating Effects of Gender and Study Discipline in the Relationship between University Students' Acceptance and Use of ChatGPT. *European Journal of Investigation in Health, Psychology and Education*, 14(7), 1981–1995. <https://doi.org/10.3390/ejihpe14070132>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. In *European Business Review* (Vol. 31, Issue 1, pp. 2–24). Emerald Group Publishing Ltd. <https://doi.org/10.1108/EBR-11-2018-0203>
- Huy, L. Van, Nguyen, H. T. T., Vo-Thanh, T., Thinh, N. H. T., & Dung, T. T. T. (2024). Generative AI, Why, How, and Outcomes: A User Adoption Study. *AIS Transactions on Human-Computer Interaction*, 16(1), 1–27. <https://doi.org/10.17705/1thci.00198>
- Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., ... Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. In *Learning and Individual Differences* (Vol. 103). Elsevier Ltd. <https://doi.org/10.1016/j.lindif.2023.102274>
- Kuhail, M. A., Alturki, N., Alramlawi, S., & Alhejori, K. (2023). Interacting with educational chatbots: A systematic review. *Education and Information Technologies*, 28(1), 973–1018. <https://doi.org/10.1007/s10639-022-11177-3>
- Owan, V. J., Mohammed, I. A., Bello, A., & Shittu, T. A. (2025). Higher education students' ChatGPT use behavior: Structural equation modelling of contributing factors through a modified UTAUT model. *Contemporary Educational Technology*, 17(4), ep592. <https://doi.org/10.30935/cedtech/17243>
- Rasul, T., Nair, S., Kalendra, D., Robin, M., Santini, F. de O., Ladeira, W. J., Sun, M., Day, I., Rather, R. A., & Heathcote, L. (2023). The role of ChatGPT in higher education: Benefits, challenges, and future research directions. *Journal of Applied Learning and Teaching*, 6(1), 41–56. <https://doi.org/10.37074/jalt.2023.6.1.29>
- Samala, A. D., Rawas, S., Wang, T., Reed, J. M., Kim, J., Howard, N. J., & Ertz, M. (2025). Unveiling the landscape of generative artificial intelligence in education: a comprehensive taxonomy of applications, challenges, and future prospects. *Education and Information Technologies*, 30(3), 3239–3278. <https://doi.org/10.1007/s10639-024-12936-0>
- Sánchez-Ruiz, L. M., Moll-López, S., Nuñez-Pérez, A., Moraño-Fernández, J. A., & Vega-Fleitas, E. (2023). ChatGPT Challenges Blended Learning Methodologies in Engineering Education: A Case Study in Mathematics. *Applied Sciences (Switzerland)*, 13(10). <https://doi.org/10.3390/app13106039>
- Shoufan, A. (2023). Exploring Students' Perceptions of ChatGPT: Thematic Analysis and Follow-Up Survey. *IEEE Access*, 11, 38805–38818. <https://doi.org/10.1109/ACCESS.2023.3268224>
- Zhao, G. Y., El-Gayar, O., & Tu, C. Z. (2023). *Is Artificial Intelligence Attractive? An Empirical Study on User's Intention to Use AI-Enabled Applications*. Hawaii International Conference on System Sciences | <https://hdl.handle.net/10125/103426>