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Factors Influencing Students' Motivation to Use ChatGPT for Learning: A TAM and UGT Approach

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Abstract

This study investigates the factors influencing university students' motivation to use ChatGPT for learning, addressing a research gap in understanding how students perceive and adopt generative AI tools in academic contexts. Despite ChatGPT's growing presence in higher education and its potential to support autonomous and flexible learning, limited empirical research has examined the motivational factors driving its use. Specifically, the study evaluates the impact of four key variables—perceived ease of use, perceived usefulness, information seeking, and novelty—on students' intention to use ChatGPT for learning activities. The research was conducted among 274 students from the Office Administration Education Study Program at Universitas Negeri Surabaya, selected through purposive sampling. Employing a quantitative approach, data were collected via a structured survey and analyzed using Structural Equation Modeling–Generalized Structured Component Analysis (SEM–GSCA). The findings reveal that all four variables exert a positive and significant influence on students' intention to use ChatGPT, providing empirical support for both the Technology Acceptance Model (TAM) and Uses and Gratifications Theory (UGT). The study concludes that students' perceptions of ChatGPT's ease of use, usefulness, novelty, and ability to fulfill information needs are critical drivers of their motivation to integrate the tool into their learning practices. Theoretical implications include advancing research on AI adoption in education, while practical implications encourage educators and institutions to promote responsible and effective use of AI tools like ChatGPT to support self-directed and adaptive learning. This study also provides insights into how

generative AI influences students' long-term learning motivation and behavioral intentions.

Keywords: TAM; UGT; ChatGPT; Learning; SEM–GSCA

INTRODUCTION

Entering the digital era, the use of technology in daily activities has increased significantly. One of the most prominent advancements in recent years is Artificial Intelligence (AI). The evolution of artificial intelligence has affected many facets of human activity, including education (Bello et al., 2024). A widely recognized AI application in education today is ChatGPT (Generative Pre-trained Transformer), an AI-based chatbot created by OpenAI, a research and deployment company based in California (Diantama, 2023). The use of ChatGPT among university students has become a common phenomenon. ChatGPT has attracted wide attention from students globally (Zhu et al., 2023), and many students prefer using ChatGPT to search for learning materials rather than traditional search engines like Google (Zhang & Yang, 2024).

According to Kompas.com, ChatGPT became the most popular AI technology in 2024, with 3.1 billion monthly website visits and over 180 million users (Zaenuddin, 2024). Data from Garuda.com show that ChatGPT users in Indonesia are dominated by the 18–24 age group, accounting for 40% of total users. The same source indicates that the education sector represents the highest proportion of ChatGPT usage (35%), followed by the business sector (30%) (Garuda, 2025). In the academic context, nearly all student groups use ChatGPT as a learning tool, including university students. With the increasing demand for students to learn independently and flexibly, many turn to AI technologies like ChatGPT to support their academic activities (Rudolph et al., 2023). Observing the growing amount of student using ChatGPT, especially in higher education, it is crucial to respond to this phenomenon by exploring the factors that influence students' motivation to use it. This is important to ensure that ChatGPT is not only used temporarily but is integrated sustainably and optimally to support academic needs.

Previous studies, such as those by Le et al. (2024), shown that Perceived Ease of Use, Perceived Usefulness, Information Seeking, and Novelty positively affect the students'

motivation for using ChatGPT. However, Tiwari et al. (2024) reported contradictory findings, showing that Perceived Ease of Use does not significantly efect the situation. The majority of earlier research, including those done Le et al. (2024), Tiwari et al. (2024), and Dineshan et al. (2023)—employed SEM–PLS as their data analysis technique. Geographical limitations were also noted; for instance, Le et al. (2024) focused on Vietnamese students, Dineshan et al. (2023) on students from southern Indian universities, and Zogheib and Zogheib (2024) on male students from a Middle Eastern university.

These inconsistencies in findings, along with limitations in sample population and data analysis techniques, provide opportunities for further research using different approaches and more specific contexts. Therefore, This study's novelty is found in its application of SEM–GSCA, a technique rarely used in similar studies, and its focus on students majoring in Office Administration Education at Universitas Negeri Surabaya—a population that has received limited research attention.

This study's tries to analyze the aspects that affect students' motivation to utilize ChatGPT as a learning tool, using the Technology Acceptance Model (TAM) and Uses and Gratifications Theory (UGT) as the conceptual model. Specifically, it investigates the impacts of Perceived Ease of Use, Perceived Usefulness, Information Seeking, and Novelty on students' Intention to Use ChatGPT, applied Structural Equation Modeling based on the Generalized Structured Component Analysis (SEM–GSCA) approach.

METHODS

This studies adopts a quantitative approach. Quantitative data analysis was employed to test the predetermined hypotheses using inferential statistics (Sugiyono, 2023). This research use explanatory design which is used to analyze relationships between variables formulated in the form of hypotheses. According to Mulyadi (2011), explanatory research aims to explain the causal relationships among variables and test theories that underlie the observed phenomena. In this context, the variables analyzed include Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Information Seeking (IS), and Novelty (N), with Intention to Use (ITU) as the dependent variable.

The population consists of all active students from the Office Administration Education Study Program, 2021–2024 cohorts, at the Faculty of Economics and Business, Universitas Negeri Surabaya, totaling 943 students. Purposive sampling is the technique

used for sample collecting, gained based on certain characteristic related to the research objectives (Sugiyono, 2019). The chosen criteria were: (a) active students from the stated program and cohorts, and (b) those who have used ChatGPT in learning activities. Based on the Krejcie and Morgan (1970) sample quantity table, the required sample quantity was 274 students at a 0.05 significance level. Data were collected using an online questionnaire through the Google Form platform sharing via social media platforms from April to May 2025. The instrument was tested for validity and reliability using JASP software. An item was considered valid if it had a significance value (p-value) < 0.05. The results showed that all 22 items met this criterion, indicating that each item was valid and suitable for further data collection. Cronbach's Alpha used to determine reliability. The reliability analysis produced a Cronbach's Alpha value of 0.775, which exceeds the minimum threshold. Thus, the instrument was deemed to have adequate internal consistency and could be reliably used for data collection.

The data was examined use SEM–GSCA. This technique provides several advantages, including independence from multivariate normality assumptions, stable determine even with few samples, the availability of model fit indices, and minimal convergence issues (Meneau & Moorthy, 2022). Furthermore, GSCA is actively developed and widely applicable in exploratory studies, making it suitable for building strong predictive structural models (Ngatno, 2019). In contrast to previous studies that predominantly employed SEM–PLS, this study contributes a distinct methodological approach by applying SEM–GSCA, which is more flexible and does not require multivariate normality assumptions. This analytical stategy enables a more reliable and flexible modeling of the study's latent connections between variables.

RESULTS

This study involved 274 students from the Office Administration Education program at the Faculty of Economics and Business, Universitas Negeri Surabaya. All respondents met the criteria as users of ChatGPT for learning purposes. The majority were female (86.5%) and male (13,5%). Aged between 19 and 24 years (98.9%). Most participants were from the 2023 cohort (48.2%), followed by those from 2024 (29.9%), 2021 (12.4%), and 2022 (9.4%).

Measurement Model Assessment

Tabel 1 present Indicators of loading assesment. According to Chin (1998), loading values of **≥ 0.5–0.6** are considered acceptable. As shown in the table above, all loading values are **≥ 0.6**, indicating that the measurement model meets the loading requirements.

Table 1. *Indicators of Loading Assessment*

	Estimate	SE	95%CI	
PEOU				
PEOU1	**0.880**	0.016	0.853	0.914
PEOU2	**0.739**	0.036	0.654	0.794
PEOU3	**0.824**	0.024	0.779	0.866
PU				
PU1	**0.796**	0.023	0.753	0.841
PU2	**0.872**	0.018	0.833	0.904
PU3	**0.809**	0.027	0.756	0.859
IS				
IS1	**0.781**	0.023	0.719	0.814
IS2	**0.726**	0.036	0.632	0.782
IS3	**0.749**	0.031	0.688	0.793
IS4	**0.739**	0.034	0.664	0.804
IS5	**0.712**	0.031	0.652	0.77
IS6	**0.730**	0.031	0.672	0.787
N				
N1	**0.670**	0.056	0.534	0.754
N2	**0.772**	0.028	0.712	0.832
N3	**0.723**	0.038	0.643	0.778
N4	**0.770**	0.028	0.722	0.815
N5	**0.791**	0.025	0.726	0.834
N6	**0.691**	0.038	0.612	0.755
ITU				
ITU1	**0.840**	0.019	0.8	0.874
ITU2	**0.861**	0.015	0.827	0.894
ITU3	**0.833**	0.021	0.783	0.869
ITU4	**0.826**	0.025	0.781	0.861

Tabel 2 present Construct Quality Measures (Reliability of indicators). The outcomes in the table reveal that the PVE numbers for the variables PEOU, PU, IS, N, and ITU are above 0.50. The Alpha and Rho numbers are likewise more than 0.70. Hence,

it possible to mean all variables in the study's construct demonstrate acceptable levels of convergent validity, internal consistency, and composite reliability.

Table 2. Construct Quality Measures (Reliability of indicators)

	PEOU	PU	IS	N	ITU
PVE	0.666	0.683	0.547	0.544	0.706
Alpha	0.748	0.768	0.834	0.831	0.861
Rho	0.856	0.866	0.879	0.877	0.906
Dimensionality	1.0	1.0	1.0	1.0	1.0

Tabel 3 present R Squared Values of Components in Structural Model. The R^2 values indicated that 58.6% of the variation in Perceived Usefulness (PU) was explained by Perceived Ease of Use (PEOU), and 63.7% of the variation in Intention to Use (ITU) was indicated by PEOU, PU, IS, and Novelty (N).

Table 3. R Squared Values of Components in Structural Model

PEOU	PU	IS	N	ITU
0	0.586	0	0	0.637

Structural Model Assessment

Tabel 4 present Structural Model Fit Measures. The model fit indices also supported model adequacy: FIT = 0.542 and AFIT = 0.539, meaning over half of the model variance was explained. GFI = 0.975 and SRMR = 0.07 indicated a good model fit (Hwang et al., 2021).

Table 4. Structural Model Fit Measures

FIT	AFIT	FITs	FITm	GFI	SRMR	OPE	OPEs	OPEm
0.542	0.539	0.244	0.61	0.975	0.07	0.46	0.764	0.391

Tabel 5 present Path Coefficients. The path coefficient results showed that all hypothesized relationships were supported, with positive and statistically significant effects. All coefficients fell within the 95% confidence intervals and did not include zero, indicating statistically significant effects. These findings confirm that PEOU, PU, IS, and N positively influence students' motivation to use ChatGPT (ITU), supporting the theoretical model used in this study.

Table 5. Path Coefficients

	Estimate	SE	95%CI		Kesimpulan
PEOU→PU	0.765	0.033	0.699	0.825	Terima H1
PEOU→ITU	0.169	0.071	0.024	0.31	Terima H2
PU→ITU	0.197	0.079	0.036	0.348	Terima H3
IS→ITU	0.408	0.065	0.292	0.544	Terima H4
N→ITU	0.158	0.053	0.048	0.284	Terima H5

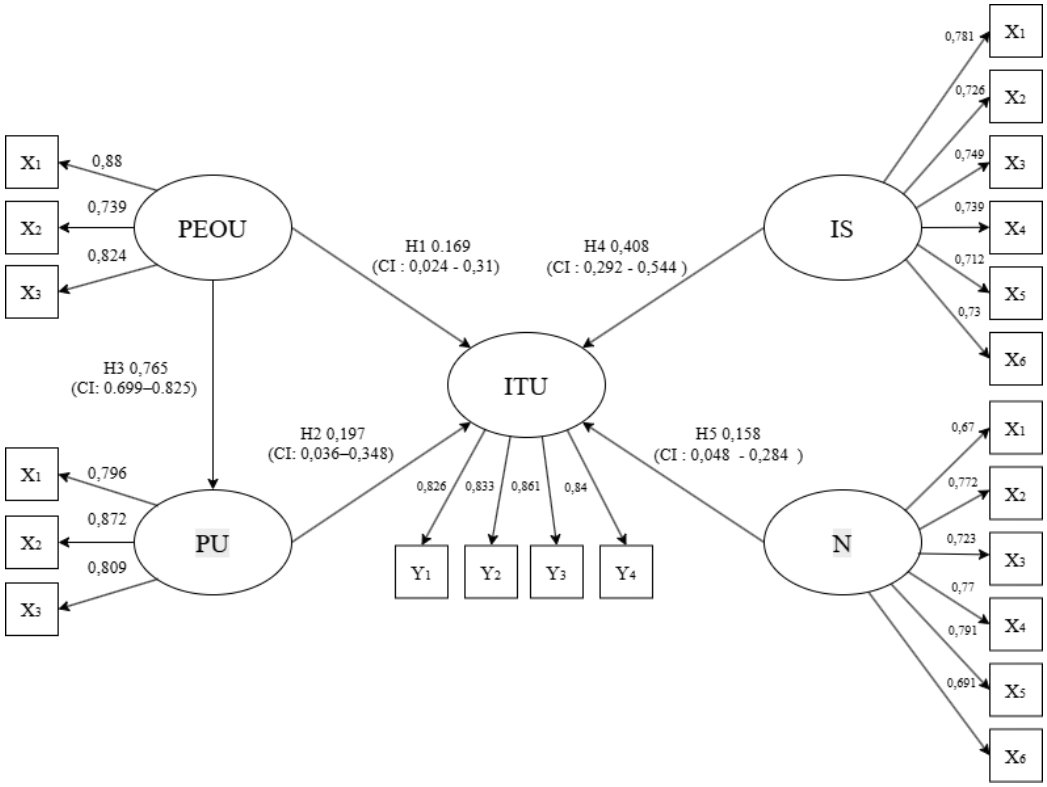

Figure 1. Path Coefficient

DISCUSSION

This research attempts to evaluate the aspects which influence students' motivation to use ChatGPT for learning, focusing on five key variabels: Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Information Seeking (IS), Novelty (N), and Intention to Use (ITU). The discussion below elaborates on the significance of each relationship based on empirical results and aligns them with relevant theories and previous research. Perceived Ease of Use (PEOU) positively and significantly affects students' Intention to Use (ITU) ChatGPT. The easier ChatGPT is to use, the more motivated students are to

use it in learning, such as understanding material, completing tasks, or finding academic references. These results support TAM theory by Davis (1989) and are congruent with the findings of Le et al. (2024), Zogheib and Zogheib (2024), and Camilleri and Falzon (2021).

Perceived Usefulness (PU) contributes positively and significantly to the formation of Intention to Use (ITU) ChatGPT. This implies that the more beneficial students perceive ChatGPT to be—such as helping them grasp complex materials or complete assignments efficiently—the more motivated they are to continue using it for learning. This finding agrees with Davis (1989) theory Technology Acceptance Model, which emphasizes that perceived usefulness is an important predictor of technology acceptance. The result is supported by studies from Le et al. (2024), Ma et al. (2024), and Zogheib and Zogheib (2024), all of which show that PU positively influences ChatGPT use in academic settings. The Perceived Usefulness (PU) of ChatGPT is positively and significantly affected by Perceived Ease of Use (PEOU). In another words, the easier ChatGPT is to use, the more students see it as a useful equipment for learning activities like completing assignments or understanding complex topics. This result confirm Davis (1989) theory Technology Acceptance Model Technology Acceptance Model and the assertion by Venkatesh and Davis (2000) that ease of use enhances perceived usefulness. It is also in line with the results of Wu and Wang (2005) and Wang et al, (2023), which show that PEOU positively influences the perceived usefulness of AI technologies.

Information Seeking (IS) demonstrates a strong and meaningful impact on students' Intention to Use (ITU). This implies that the stronger students' drive to obtain academic information, the more likely to adopt ChatGPT as a academic equipment. Students find ChatGPT effective in delivering quick and relevant explanations that support their understanding. This finding aligns with Dineshan et al. (2023), who describe IS as the students' need to access relevant knowledge. It is also gets assist from Le et al. (2024) and Yang et al. (2023), who affirm students use ChatGPT to seek, verify, and comprehend academic information. Hence, information-seeking motives play a critical role in encouraging continued ChatGPT usage. Novelty (N) contributes positively and significantly to the formation of Intention to Use (ITU). In other words, the greater students' interest in innovative technologies like ChatGPT, the stronger their intention to continue using it for learning. ChatGPT is perceived as offering a new, interactive, and efficient learning experience. This finding supports Alzyoud et al. (2024) also Dineshan et al. (2023), who concentrated that novelty drives technology acceptance. Baharun and

Haslinda (2022) also noted that innovations such as AI can create more engaging learning environments.

This study contributes both practically and theoretically. On a practical level, the findings show that students are highly motivated to use ChatGPT in learning, particularly driven by perceived ease of use, usefulness, information seeking, and novelty. Educational institutions and instructors may integrate ChatGPT as a learning support tool, provided that proper guidance is given to make sure ethical and successful use. On a theoretical level, the study reinforces and extends the applicability of the Technology Acceptance Model (TAM) and Uses and Gratifications Theory (UGT) in the context of artificial intelligence in education. The results confirm that both models remain relevant for analyzing user motivation toward emerging technologies like generative AI. Future studies may build on this by incorporating additional constructs such as digital literacy, trust in technology, or subjective norms. This study's has several boundaries. First, the respondent distribution was not evenly spread across student cohorts, with a large proportion coming from the 2023 batch. This imbalance could restrict the generalizability of the findings. Second, the model only adopted constructs from TAM and UGT, excluding other potentially influential factors such as social influence, trust, or prior technological experience. Future research is encouraged to include a broader population and additional variables to deepen understanding of ChatGPT adoption in education.

CONCLUSION

This paper attempt to analyze the aspects influencing students' motivation to use ChatGPT for education, adopting the Technology Acceptance Model (TAM) and Uses and Gratifications Theory (UGT) as the theoretical framework. The results reveal that Perceived Ease of Use, Perceived Usefulness, Information Seeking, and Novelty all have a positive and significant effect on students' Intention to Use ChatGPT. These outcome highlight that ease of use, perceived benefits, the need to seek information, and the novelty of the technology are essential drivers in students' acceptance of artificial intelligence equipment in higher education environments.

Despite these insights, the study has several boundaries. The sample distribution was uneven across student cohorts, potentially affecting representativeness. Second, the model was limited to TAM and UGT without incorporating mediating or moderating

variables. Third, the sample was drawn from a single academic program at one university. This affect the generalizability of the findings. Future study's is encouraged to explore alternative models such as the Expectation Confirmation Model (ECM) or the Theory of Reasoned Action (TRA). Further studies could also include additional variables such as trust, attitude toward AI, or self-efficacy to enrich the explanatory power of the model. Expanding the sample to broader student populations across multiple institutions would improve the generalizability of results. Comparative studies between ChatGPT and other AI chatbots are also recommended to evaluate the relative effectiveness of these tools in educational contexts.

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