



Exploring the Impact of Using - ChatGPT in Light of Goal Orientations and Academic Self-Efficacy

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The emergence of generative AI, especially ChatGPT, has significantly impacted various institutions, including higher education, leading to increased debates among educators about its use. This study aimed to explore how student characteristics—particularly motivational goal orientations and academic self-efficacy—affect the intensity and manner of ChatGPT usage. It also investigated the consequences of using ChatGPT on Students' procrastination, academic performance, and academic flourishing. The study used scales measuring goal orientations, academic self-efficacy, ChatGPT usage, procrastination, and academic flourishing with a sample of 527 (242 male, 285 female) students from Damanhour University (73.2% undergraduate; 26.8% postgraduate). Academic performance was assessed through CGPA, and data were analysed using a structural equation model (SEM) to evaluate the proposed model's adequacy. Findings revealed that students with high academic self-efficacy and learning goal orientation and prove performance goal orientation were less likely to use ChatGPT. Conversely, students with high levels of avoid performance goal orientation used ChatGPT more frequently. ChatGPT usage was associated with increased procrastination and decreased academic performance but did not significantly impact academic flourishing. Additionally, academic self-efficacy and the three goal orientations had varying indirect effects on students through their ChatGPT usage.

Keywords: goal orientations, academic self-efficacy, ChatGPT usage, procrastination, academic flourishing, academic performance

INTRODUCTION

In the past decade, educational practices have undergone significant transformations due to technological advancements, especially artificial intelligence (AI), which refers to the simulation of human intelligence processes by machines and includes various technologies designed to enhance learning experiences (Lo, 2023). Text generation

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models known as Generative Pre-trained Transformers (GPT) have garnered considerable attention in higher education. Among these technologies, ChatGPT has gained widespread fame due to its unprecedented capabilities in generating human-like text and facilitating automated conversations. As a result, students use it for various purposes such as creating text, writing essays and research papers, and completing tasks and academic projects (Strzelecki, 2023).

ChatGPT enables students to generate consistent and contextually appropriate responses to their queries, providing them with an effective resource for their academic work. However, the widespread use of ChatGPT presents several challenges and consequences for higher education. It may negatively impact the social understanding of knowledge (Peters, et. al, 2023), student learning and success (Novak, 2023), and undermine academic integrity (Chaudhry, et. al, 2023) and diminishing students' achievement motivation (Krou, et. al, 2021). It also has the potential to stifle creativity and critical thinking (Abbas, et. al, 2024).

Despite the increasing use of ChatGPT in higher education, most previous studies consist of theoretical discussions, comments, and reviews regarding its use in academic settings (e.g., Cotton, et. al, 2023; Peters, et. al, 2023). Research rarely focuses on the factors driving students to use it or how they determine their usage methods (Strzelecki, 2023). Therefore, understanding the main factors and motivations behind university students' use of ChatGPT is essential. Do students' beliefs about themselves, their performance, and their goal orientations affect the extent and manner of their usage? What are the potential harmful or beneficial consequences? How does ChatGPT usage impact their academic outcomes and flourishing? Can it lead to procrastination in completing required tasks? Answering these questions is vital for educators, policymakers, and students. It can help develop effective strategies for integrating generative AI technologies into the learning process and controlling their misuse in higher education. Thus, this study aimed to address these gaps by investigating the impact of student characteristics—specifically their goal orientations and academic self-efficacy on their use of ChatGPT, and the effects of ChatGPT usage on student procrastination, performance, and academic flourishing. In addition to explore Do the students' beliefs about their performance and their goal orientations affect their academic performance, flourishing, and procrastination through their use of ChatGPT?

Context and Review of Literature

Using ChatGPT as a Generative AI Technology

GPT technology is described as world-changing (Mathew, 2023). It uses vast amounts of available digital data to process and generate human-like texts on various topics. The ChatGPT natural language processing model, developed by OpenAI, is the latest technological advancement. It is a versatile tool designed to simplify automated conversations, generating human-like text responses based on the input it receives (Kalla, et.al, 2023). Thanks to its ability to understand and generate contextually relevant responses, it has become increasingly used in educational settings to support students in various learning tasks (Luan, et. al, 2023).

The use of AI models, particularly ChatGPT, in the education sector has evoked mixed feelings among educators (Lo, 2023). Some educators view ChatGPT as a progressive step toward the future of education and scientific research. It can provide individualized training and personal guidance to students, helping to improve their performance, flourishing, and equipping them with skills for future challenges. ChatGPT can serve as a virtual tutor to aid learners in self-directed learning, assisting them in setting specific learning goals and designing personalized learning plans. It can also identify relevant resources based on learners' various learning styles (Lin, 2023). Additionally, it can monitor and assess learners' performance by providing feedback on their progress, offering personalized recommendations or learning strategies to improve their learning in a meaningful and constructive way (Halaweh, 2023).

Furthermore, it can be used for grammar corrections, vocabulary learning practice (Shaikh, et.al, 2023), and machine translation of educational materials quickly and efficiently into multiple languages, thus making resources accessible to a more diverse student audience. It also contributes to creating more responsive and adaptive interactive learning environments (Grassini, 2023).

Its availability as an online chat service allows students to get immediate help and answer their questions without waiting for human responses. This can increase learning efficiency and effectiveness, reduce students' anxiety and stress levels, and improve their well-being and mental health (Abdillah, et. al, 2023).

At the same time, others question the use of ChatGPT, viewing it as a potential danger that reduces educational activities and encourages laziness (Yilmaz & Yilmaz, 2023a) and procrastination among students (Abbas, et. al, 2024). It also spreads misinformation, lowers creativity, and diminishes critical and independent thinking (Zhang, et. al, 2024).

There are also challenges regarding its accuracy and reliability, as ChatGPT is trained on a vast amount of raw, unrefined data and may not be entirely objective. The effectiveness of generative models depends on the quality and diversity of the data used in their training. If the training sets contain biases, these biases inevitably seep into the model. Indeed, numerous critical errors and inaccurate information generated by ChatGPT have been discovered (Gravel, et .al, 2023).

Moreover, using ChatGPT increases the illicit use of intellectual property. The ease of generating relatively high-quality text can encourage students to misuse it, undermining the academic integrity of the learning process. This may harm the integrity of academic institutions and challenge the primary purpose of assessments—to accurately and fairly measure student learning (Grassini, 2023).

The risk is further heightened when teachers are unable to evaluate students' performance, outputs, and the extent of their benefit from ChatGPT usage, making it difficult for educators to distinguish between them. These tools may mask learning deficiencies, making it harder for teachers to provide proper feedback or develop appropriate intervention strategies. As a result, the educational process becomes less effective, undermining the true purpose of teaching and learning.

Thus, the misuse of ChatGPT contributes to an unfair academic playing field. Students who use it to generate unique content may gain an unfair advantage over their peers who cannot access it or choose not to use it for ethical reasons (Cotton, et .al, 2023). This disparity may skew grades, undermining the value of hard work and personal effort.

Goal Orientations and ChatGPT Usage

Achievement goal orientation is a critical aspect of student development as it shapes their approach to learning (Alhadabi & Karpinski, 2019). It depends on how students perceive their abilities during instruction (Guo & Leung, 2021).

Early theorists divided goal orientations into learning versus performance goals. Learning goals promote self-motivation by enhancing perceptions of challenge, encouraging engagement, excitement, and autonomy. Conversely, performance goals are seen as detrimental, inducing threat perceptions, task disengagement, anxiety, and pressure (Elliot & Harackiewicz, 1996).

The trichotomous model (Deeba & Ahmad, 2023) is now widely accepted, comprising learning orientation (to improve competence), Prove performance orientation (to demonstrate competence), and avoid performance orientation (to avoid incompetence) (Elliot & Harackiewicz, 1996). Where performance goals are further divided into the desire for favorable judgments (prove) and the avoidance of unfavorable ones (avoid) (Vande Walle, 1997).

Motivational orientation is key in driving students to use ChatGPT. Those with high learning goal orientation are unlikely to rely on easy methods like ChatGPT. If they do use it, it's to master tasks and explore different approaches, as this orientation is linked to fulfilling needs and task-focused behavior (Chen, 2015). They seek success-related information, enhancing self-motivation (Elliot & Harackiewicz, 1996). Thus, learning goal orientation is hypothesized to be negatively associated with ChatGPT use (Hypothesis 1).

Conversely, students with high prove performance-orientation use all available methods, sometimes successfully, but at other times, their methods may be maladaptive. (Voon & Voon, 2020). In our study we hypothesized that prove performance-orientation is positively linked to ChatGPT use (Hypothesis 2).

Lastly, those with high avoid performance orientation seek to avoid failure and incompetence (Elliot & Harackiewicz, 1996), viewing achievement situations as threatening. They may seek easy ways to avoid failure (Chen, 2015), which can hinder learning (Voon & Voon, 2020). Thus, avoid performance- orientation is hypothesized to positively relate to ChatGPT use (Hypothesis 3).

Academic Self-Efficacy and ChatGPT Usage

Self-efficacy, derived from social cognitive theory (Bandura, 1986), refers to an individual's belief in their ability to perform or master a specific task (Celcima, et. al, 2024). It is a key determinant of performance, as individuals need both skills and a

belief in their capacity to succeed (Santos& Alliprandini, 2023), and it varies depending on the task or context (Pajares, 2002).

Academic self-efficacy is the belief in one's ability to succeed in academic tasks , and is closely linked to overall educational performance (Khan, 2013). It significantly influences academic motivation and has both direct and indirect effects on academic achievement through self-satisfaction (Tabernero& Hernandez, 2011).

Regarding ChatGPT usage, students with varying levels of academic self-efficacy are likely to use it differently. Those with high academic self-efficacy exhibit greater confidence in planning and completing tasks, show enthusiasm for learning, and persist through challenges (Honicke & Broadbent, 2016). Hence, they are expected to rely more on their abilities than on AI tools. Conversely, students with low self-efficacy may over-rely on AI. Thus, the study hypothesizes that academic self-efficacy is negatively associated with ChatGPT usage (H4).

ChatGPT Usage and Academic Procrastination

Procrastination occurs when individuals voluntarily and irrationally delay tasks, leading to late submissions or last-minute exam preparation (Santyasa,et.al,2021). Some people procrastinate habitually, while others only in specific circumstances; it can be influenced by various environmental and personal factors such as personality traits like neuroticism (Ocansey, et. al, 2022), learning styles (Visser, et. al, 2018), perfectionism (Osenk, et. al, 2020), or fear of failure (Gil-Flores, et. al, 2020). Additionally, procrastination is linked to self-regulation problems, time management difficulties and contextual factors like teaching styles (Codina, et. al, 2018).

Academic procrastination can result in negative consequences, such as stress, anxiety, decreased self-efficacy, impulsiveness, and poor performance (Dumitrescu, et .al, 2011). It often leads to increased workloads and time pressure, resulting in rushed or incomplete work, and even academic cheating (Patzek, et. al, 2015). The associated feelings of guilt, anxiety, and depression, as well as social disapproval for not meeting responsibilities further exacerbate the issue (Gil-Flores, et. al, 2020).

These negative outcomes significantly impact students' academic performance, leading to lower achievement (Gupta, et. al, 2024) .

Generative AI, such as ChatGPT, may influence procrastination tendencies among students. Using shortcuts like ChatGPT might encourage procrastination, as students may feel they can complete assignments quickly and with minimal effort. This sense of control over tasks may lead them to delay their work, ultimately promoting procrastination. Some evidence suggests that ChatGPT usage may contribute to student laziness (Yilmaz & Yilmaz, 2023a). Therefore, it is hypothesized that using ChatGPT, which helps students' complete tasks with little effort, will foster procrastination, especially among students lacking motivation or a desire for mastery (Hypothesis 5).

Using ChatGPT and Academic Performance

Academic performance in this study is defined as the level of success or proficiency a student achieves in various educational endeavors, measured through academic

assessments and exams (York, et.al, 2015). It reflects the acquisition of knowledge, skills, and competencies across different subjects, serving as a key indicator of a student's academic abilities (Barowski ,2023), and is measured here by the cumulative GPA.

Studies on the impact of ChatGPT on academic performance show mixed results. Some research indicates that ChatGPT can improve student performance by helping with goal setting and resource identification according to different learning styles (Lin, 2023). However, other studies suggest that excessive use of ChatGPT can be detrimental, leading to lower GPAs and reduced analytical, creative, and critical thinking skills (Abbas, et. al, 2024; Zhang, et. al, 2024). Over-reliance on ChatGPT might lead to a standardized, less enriched learning experience, diminishing the depth of knowledge, thus, it is hypothesized that there is a negative relationship between ChatGPT usage and academic performance, especially among students lacking motivation and a passion for mastery (Hypothesis 6)

Using ChatGPT and Academic Flourishing

Academic flourishing, a form of positive mental health, involves high levels of happiness, satisfaction, meaningful and purposeful life, fulfilling social relationships, optimism, and engagement (Seligman, 2018). It encompasses positive emotions, constructive peer relationships, engagement, meaning, and academic flow within educational environments, ultimately leading to exceptional academic achievements (Diener et al., 2010).

Academic flourishing is positively related to several factors, including life satisfaction, academic flow and performance, behavioral and cognitive engagement, (Chamizo-Nieto, et. al, 2021).

Few studies have explored the link between ChatGPT usage and academic flourishing. It is anticipated that ChatGPT, by providing continuous support and immediate answers, will enhance student well-being and thus academic flourishing. Therefore, it is hypothesized that there is a positive relationship between ChatGPT usage and academic flourishing (Hypothesis 7).

Hypotheses of the Study

The main hypotheses of the study consist of seven hypotheses as follows:

H1: Learning goal orientation would negatively correlate with ChatGPT usage.

H2: Prove performance orientation would positively correlate with ChatGPT usage.

H3: Avoid performance orientation would positively correlate with ChatGPT usage.

H4: Academic self-efficacy would negatively correlate with ChatGPT usage.

H5: Using ChatGPT would positively correlate with academic procrastination.

H6: Using ChatGPT would negatively correlate with academic performance.

H7: Using ChatGPT would positively correlate with academic flourishing.

In addition to the seven hypotheses, the following hypotheses are proposed to test the indirect effects of academic self-efficacy and the three goal orientations on procrastination, flourishing, and academic performance through using ChatGPT:

H8: ChatGPT will mediate the relationship between learning goal orientation and procrastination, academic flourishing, and academic performance (8a, 8b, 8c).

H9: ChatGPT will mediate the relationship between prove performance orientation and procrastination, flourishing, and academic performance (9a, 9b, 9c).

H10: ChatGPT will mediate the relationship between avoid performance orientation and procrastination, flourishing, and academic performance (10a, 10b, 10c).

H11: ChatGPT will mediate the relationship between academic self-efficacy and academic procrastination, flourishing, and performance (11a, 11b, 11c).

METHOD

Sample and Data Collection:

The study tools were distributed to 527 voluntary students from Damanhour University, with the option to opt out at any time. Participant confidentiality was guaranteed. The sample comprised 242 males and 285 females, with an average age of 23.31 years ($SD = 4.22$). Approximately 73.2% were undergraduates, while 26.8% were postgraduates.

The modified Diener, et. al (2010) scale was used to measure academic flourishing, consisting of eight items on a three-point Likert scale, with scores ranging from 8 to 24. Higher scores indicate greater flourishing, reflecting abundant psychological resources and strengths. The reliability level is acceptable ($\alpha = 0.81$).

Academic Self-Efficacy was measured using the Celcima, et .al (2024) scale, which includes 10 items scored on a four-point scale, with scores ranging from 10 to 40. Higher scores indicate greater academic self-efficacy. The reliability level is acceptable ($\alpha = 0.78$).

Vande Wall (1997) scale assessed three dimensions of Goal Orientations: (Learning, Prove performance, and Avoid performance) goal orientation. The scale includes 13 items distributed as 5, 4, and 4 items across the dimensions, respectively, with responses on a five-point Likert scale. The reliability is acceptable ($\alpha = 0.85, 0.81, 0.77$) for the three orientations, respectively.

The Busko (1998) scale was used to measure Academic Procrastination, consisting of 16 items (9 positive and 7 negative) with responses on a five-point Likert scale. Scores were reversed, so higher scores indicate more procrastination, while lower scores indicate less procrastination. The reliability level is acceptable ($\alpha = 0.75$).

In this study, ChatGPT usage was defined as the extent to which students use ChatGPT for academic purposes such as assignments, projects, or exam preparation. The Abbas, et. al (2024) scale, consisting of 8 items on a six-point Likert scale, was used. Higher scores indicate greater use of ChatGPT. An open-ended question was included for

students to describe their use of ChatGPT, their methods, and the types of tasks they accomplish with it. The reliability level is acceptable ($\alpha = 0.88$).

An objective measure of academic performance was used to avoid biases from self-reports or social desirability. Academic performance was assessed using students' Cumulative Grade Point Average (CGPA). Participants, all enrolled in semester-based programs, reported their latest CGPA, which ranged from 1 (lowest) to 4 (highest).

Analysis Method

Data analysis using AMOS 21. To see the size of the fit of a model, it must be measured using several goodness's of fit indicators according to Hair, et.al (2014), namely, first from the chi-square and df values, second from the absolute fit index (GFI, RMSEA or SRMR), third from the incremental fit index (CFI or TLI), fourth based on goodness of fit index (GFI, CFI, TLI) and fifth based on the badness of fit index (RMSEA, SRMR), above 0.95 with RMSEA 0.08.

FINDINGS

Structural model: We tested the study's hypotheses for direct and indirect effects Table (1,2); the structural model is presented in Fig. 1. We will focus on the paths and hypotheses of interest in our study.

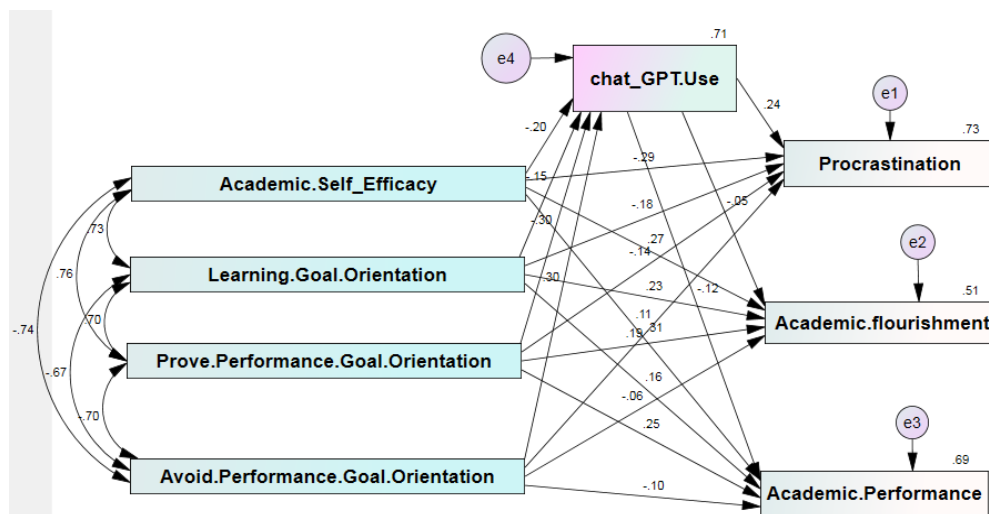


Figure 1
Structural model

Table 1
Direct effects

H	Path	Coefficient	T Statistics	P-value	Status
H 1	Learning goal orientation ---> chat_GPT.Use	-.149	4.004	.000	Supported
H 2	Prove performance goal. ---> chat_GPT.Use	-.300	7.643	.000	Didn't Support
H3	Avoid performance goal. ---> chat_GPT.Use	.296	7.903	.000	Supported
H4	Academic.Self_Efficacy ---> chat_GPT.Use	-.201	4.707	.000	Supported
H 5	chat_GPT.Use ---> Procrastination	.235	5.606	.000	Supported
H 6	chat_GPT.Use ---> Performance	-.116	2.597	.009	Supported
H 7	chat_GPT.Use ---> Flourishing	-.046	.812	.417	Didn't Support

As shown in Table 1, the findings indicated that: Learning Goal Orientation had a significant negative relationship with ChatGPT usage ($\beta = -0.149$, $t = 4.004$, $p < 0.01$), supporting Hypothesis 1. Contrary to Hypothesis 2, prove performance orientation had a negative and significant effect on ChatGPT usage ($\beta = -0.30$, $t = 7.643$, $p < 0.01$), this result didn't support hypothesis 2. Avoid performance orientation had a positive and significant effect on ChatGPT usage ($\beta = 0.296$, $t = 7.903$, $p < 0.01$), supporting Hypothesis 3. Academic self-efficacy was negatively related to the use of ChatGPT ($\beta = -0.201$, $t = 4.707$, $p < 0.01$) supporting Hypothesis 4.

Consistent with hypothesis 5, the findings revealed that the use of ChatGPT was positively related to procrastination ($\beta = 0.235$, $t = 5.606$, $p < 0.01$) this results supported hypothesis 5. Furthermore, the use of ChatGPT was found to have a negative effect on academic performance (CGPA) ($\beta = -0.116$, $t = 2.597$, $p < 0.01$) this result supported hypothesis 6. Contrary to our expectations the result revealed that the effect of the use of ChatGPT on academic flourishing was negative and not significant ($\beta = -0.046$, $t = 0.812$, $p \geq 0.1$) this result did not support hypothesis 7.

Table 2
Indirect Effects

H	Path	Coefficient	T Statistics	P-value	Status
H 8a	Learning goal --> chat_GPT. --> Proc-	-.105	4.962	.000	Supported
H 8b	Learning goal. --> chat_GPT. -->Flouri-	.006	4.625	.000	Supported
H 8c	Learning goal. --> chat_GPT. -->Perfo-	.001	4.143	.000	Supported
H 9a	Prove perfor... --> chat_GPT. --> Proc-	-.261	3.393	.000	Supported
H 9b	Prove perfor. --> chat_GPT. -->Flouri-	.015	3.598	.000	Supported
H 9c	Prove perfor. --> chat_GPT. -->Perfo-	.003	5.888	.000	Supported
H 10a	Avoid perfor. --> chat_GPT. --> Procr-	.265	3.004	.003	Supported
H 10b	Avoid perfor. --> chat_GPT. -->Flouri-	-.015	1.179	.238	Not sup
H 10c	Avoid perfor. --> chat_GPT. -->Perfor-	-.004	2.415	.016	Supported
H11a	Self_efficacy --> chat_GPT. -->Proc-	-.094	6.993	.000	Supported
H 11b	Self_efficacy --> chat_GPT. -->Flouri-	.005	4.725	.000	Supported
H 11c	Self_efficacy --> chat_GPT. -->Perfor-	.001	6.889	.000	Supported

Table 2 shows that Learning goal orientation had a negative indirect effect on Procrastination through ChatGPT ($\beta = -.105$, $t = 4.962$, $p < 0.01$), but a positive indirect effect on Academic Flourishing ($\beta = .006$, $t = 4.625$, $p < 0.01$) and Academic Performance ($\beta = .001$, $t = 4.143$, $p < 0.01$), supporting hypotheses 8a, 8b, and 8c.

Similarly, prove performance orientation had a negative indirect effect on Procrastination through ChatGPT ($\beta = -.261$, $t = 3.393$, $p < 0.01$), but a positive indirect effect on Academic Flourishing ($\beta = .015$, $t = 3.598$, $p < 0.01$) and Academic Performance ($\beta = .003$, $t = 5.888$, $p < 0.01$), supporting hypotheses 9a, 9b, and 9c.

In addition, avoid performance orientation had a positive indirect effect on procrastination through ChatGPT ($\beta = .265$, $t = 3.004$, $p < 0.01$), and negative indirect effect on academic performance ($\beta = -.004$, $t = 2.415$, $p < 0.05$), however it's indirect effects on Academic Flourishing through ChatGPT was insignificant ($\beta = -.015$, $t = 1.179$, $p \geq 0.1$). These findings support hypotheses 10a and 10c but not 10b.

Academic self-efficacy negatively influenced procrastination via ChatGPT ($\beta = -.094$, $t = 6.993$, $p < 0.01$) and positively impacted academic flourishing ($\beta = .005$, $t = 4.725$, $p < 0.01$) and academic performance ($\beta = .001$, $t = 6.889$, $p < 0.01$) through ChatGPT. These findings support hypotheses 11a, 11b, and 11c.

(Table 3) show the results of the previous model test through several absolute fit measures with the rule of thumb in the Structural Equation Model (SEM).

Table 3
Model test results

Index	Goodness of Fit	Criteria	Description
Chi Square	0.081 (p value = 0.776)	P value > 0.1 Not significant	Good of fit
CMIN/DF	0.081	≤ 3.00	Good of fit
RMSEA	0.001	$\leq 0,08$	Good of fit
TLI	1.007	≥ 0.95	Good of fit
CFI	1	≥ 0.95	Good of fit
GFI	0.999	≥ 0.90	Good of fit
AGFI	0.999	≥ 0.90	Good of fit

Table 3 shows that Chi-Square was 0.081 ($p = 0.776$), indicating no significant difference from the data. The CMIN/DF value of 0.081 was well below the 3.00 threshold, and the RMSEA was 0.001, significantly lower than the 0.08 cutoff, suggesting a very close fit. The Tucker-Lewis Index (TLI) was 1.007, exceeding the 0.95 threshold, while the Comparative Fit Index (CFI) was 1.00, indicating a perfect fit. Both the Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI) were near 1, reflecting an excellent fit. From these results, it becomes clear that the model for evaluating ChatGPT usage is statistically robust and fits the data well, confirming its validity for analyzing the intended relationships.

DISCUSSION

Table 1 shows that students with high learning goal orientation used ChatGPT minimally, often avoiding it due to concerns about mastering tasks and achieving deep understanding they seek. Analyzing some responses from students with high learning goal orientation to the open question about their use of ChatGPT, most responses indicated that they avoided it due to the inaccuracy of its outputs and concerns that relying on it would lead to uniform and unoriginal responses. Additionally, some comments highlighted that when they do use ChatGPT, it is not for cheating but as a

platform to develop better skills, master the learned materials, and improve their grades in a technology-driven educational environment. They may also use it as a tool to enhance their writing quality, observe different ways of expressing ideas, or understand how to structure their thoughts coherently while continuously reviewing and criticizing their outputs. Therefore, it can be said that students with a learning goal orientation used ChatGPT in the correct way that leads to positive outcomes. This aligns with the perspective that emphasizes the positive aspects of using ChatGPT in education, such as (Halaweh, 2023; Lin, 2023).

Similarly, students with a high prove performance goal orientation also reported low usage of ChatGPT, while those with avoid performance goal orientation reported on the open question about their use of ChatGPT that they used it more frequently to accomplish many tasks, and often the results are satisfactory for them even without reviewing them. These students are likely to use ChatGPT to mask their lack of ability, relying on it as an easy solution without much effort, often without reviewing its output.

Therefore, it can be said that students with avoid performance goal orientation used ChatGPT in the wrong way, which leads to negative outcomes. This aligns with the perspective that emphasizes the negative aspects of using ChatGPT in education, such as (Skavronskaya et al., 2023; Yilmaz & Yilmaz, 2023a).

Additionally, students with high levels of academic self-efficacy were less likely to use ChatGPT. Many of them enjoy their independence in completing academic tasks, unlike those with low academic self-efficacy who are more prone to frustration and seek external help, such as ChatGPT.

This can be explained according to Celcima, et. al (2024) as self-efficacy is seen as an important determinant of students' intrinsic motivation, which ultimately allows them to remain self-reliant and consistent in their academic journey. The feeling of academic self-efficacy enables students to enjoy their academic activities by reading additional sources or participating in various discussion groups, rather than resorting to easy, quick sources like ChatGPT. Notably, there is evidence suggesting that academic self-efficacy is inversely related to the inappropriate use of technology and reliance on artificial intelligence (Odacı, 2013; Li, et. al, 2021). but this result differs from (Zhang, et. al, 2024), where no strong link was found between self-efficacy and AI reliance, although academic stress mediated this relationship.

Thus, the results of our study confirm that the nature of students' use of ChatGPT, whether positive or negative, is associated with students' characteristics (their learning goal orientations and their academic self-efficacy).

Furthermore, the results suggest that excessive use of ChatGPT can negatively impact students' academic outcomes. Frequent users of ChatGPT were more likely to procrastinate, given its constant availability, which led to rushed tasks and lower academic performance. This is consistent with the results of both (Yilmaz & Yilmaz, 2023a ; Abbas, et. al, 2024).

Contrary to our expectations, the results revealed that frequent use of ChatGPT does not determine the level of academic flourishing among students. The impact of ChatGPT

use was non-significant but negative, suggesting that using ChatGPT might harm students' flourishing and their satisfaction with their academic life. This may be attributed to the fact that academic flourishing, as measured in the current study, is perceived by the students themselves—they evaluate their satisfaction with their abilities and academic competence. It seems that some students, even if they complete their tasks easily using ChatGPT, still feel internally dissatisfied with their mastery and competence. On the other hand, some students may experience satisfaction and academic well-being simply by completing the required tasks at any level, regardless of quality.

The mediating effects shown in table 2 show that a learning goal orientation discourages students from using ChatGPT for their academic tasks. This decreased use leads to improving their academic performance and flourishing and reduces procrastination.

This is consistent with (Anderman & Wolters, 2006; Kaplan & Maehr, 2007; Elliot & Harackiewicz, 1996) where students with a learning goal orientation strive for mastery and the effective use of resources, which in turn reflects on their academic competence.

Similarly, a prove performance goal orientation reduced ChatGPT usage, leading to better academic performance and flourishing. This is consistent with (Harackiewicz, et. al, 2002; Voon & Voon, 2020) where prove goal orientation has an adaptive value on the student's learning process and performance in many cases.

Conversely, avoid performance goal orientation increased ChatGPT usage, which in turn raised procrastination and negatively impacted academic performance, with significant negative indirect effects. It also harmed academic flourishing, though the effect was not statistically significant. This is consistent with (Anderman & Wolters, 2006; Kaplan & Maehr, 2007) where avoiding goal orientation has maladaptive values on the student's learning process and performance.

The mediating effects revealed that high academic self-efficacy reduces ChatGPT usage, resulting in better academic performance and flourishing, and lower procrastination. This is consistent with (Celcima, et. al, 2024; Odacı, 2013; Li, et. al, 2021) as academic self-efficacy has positive effect on students' development in the learning process

CONCLUSION

This study is among the first to explore factors driving students' use of ChatGPT, revealing that motivational orientations and academic self-efficacy are key in determining the extent and nature of its use for academic tasks. It contributes valuable insights to the literature on the potential impacts of ChatGPT in higher education. Specifically, it shows that excessive use of ChatGPT can lead to procrastination and lower academic performance and flourishing, particularly for students with low motivation and academic self-efficacy. While ChatGPT cannot be disregarded, understanding its consequences and limitations is crucial. Educators should guide students on how to use it effectively to enhance their skills and provide appropriate

support tailored to their personal traits and motivational orientations to maximize benefits and minimize drawbacks.

Students should be educated on the risks of overusing ChatGPT. Effective interventions could include training programs and awareness campaigns that balance personal effort with AI assistance. Educators should encourage critical thinking and assign collaborative projects, while also revising assessment methods to emphasize and discover creativity and problem-solving over AI reliance. Recognizing and rewarding students' genuine intellectual achievement fosters a sense of accomplishment that can outweigh the allure of quick AI-based solutions.

Future studies should also examine the long-term use of ChatGPT on memory, various learning outcomes, and students' academic integrity.

There are some limitations in the current study that should be focused on in future research, particularly regarding the nature of the sample, as it includes both undergraduate and graduate students. There are significant differences between these two groups that need to be studied and understood in terms of their effects, as the tasks for which ChatGPT is used may differ completely.

Additionally, it is important to note that measuring the variables of the current study through questionnaires is susceptible to bias, as self-reporting is based on students' self-perceptions.

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